CASTAIC LAKE WATER AGENCY

January 11, 2008

Delores Brown, Chief
Office of Environmental Compliance
California Department of Water Resources
901 P Street
Sacramento, CA 95814

DELORES

Dear Ms. Brown:

This letter is submitted by Castaic Lake Water Agency (CLWA), a special act district that contracts with the State of California, through the Department of Water Resources (Department), for water supplies from the State Water Project (SWP). CLWA's customers pay for and benefit from the water supplies provided by the SWP (Castaic Lake Water Agency Law, Wat. Code-App. §103-1, *et seq.*). CLWA is mandated by the Legislature to purchase and deliver sufficient supplies of SWP water to serve the needs of its customers in the Santa Clarita Valley (Cal. Wat. Code-App. § 103-15).

The Department has prepared the Draft EIR on the Monterey Amendment to the SWP Water Supply Contracts, which is entitled "Draft Environmental Impact Report on the Monterey Amendment to the State Water Project Contracts (Including Kern Water Bank Transfer) and Associated Actions as Part of a Settlement Agreement" (Monterey Plus DEIR). The Monterey Plus DEIR re-evaluates the environmental effects of the Monterey Amendments, which have been in operation for over a decade.

In 1996, the Monterey Amendment amended the 1960s-era SWP contracts between the Department and each of the 29 public agencies (Contractors) that contract for SWP supplies. The Monterey Amendment updated a number of SWP contract provisions to address assumptions and changes in conditions that had occurred since the 1960's. The Monterey Amendment also incorporated opportunities for modern, more progressive water management. Among its significant accomplishments were:

- **Settled disputes over SWP water allocations** – The amended water allocation provisions eliminated the agriculture-first shortage requirements for contract water supplies (i.e., Table A water) as well as the agricultural priority to surplus water, and instead required the allocation of shortages in proportion to Contractors' contract amounts. In exchange, the agricultural Contractors agreed to permanently retire a portion of their contract amounts and permanently transfer an additional portion to urban Contractors.

- **Gave contractors more flexibility in managing limited SWP supplies** – The amended water management provisions promote Contractor storage of

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water in underground water storage banks during wet periods for later use during dry times, and improved Contractor opportunities for greater beneficial use from SWP facilities.

- **Increased rate stability and funding for local investment in water management programs** – The amended financial provisions use Contractor money originally committed for additional SWP facilities and instead use it to assist Contractors in stabilizing their water rates and increasing their funding for local development of water conservation, water recycling, conjunctive use, and other water management programs.

The added flexibility provided by the Monterey Amendment has allowed the SWP Contractors to weather the most recent drought without enduring the substantial hardships of the drought of the early 1990s, despite increased water demands occurring since that time and increasing pressures on SWP operations.

The Monterey Plus DEIR includes an exhaustive analysis of the environmental effects of the Monterey Amendment and Settlement Agreement. The Monterey Plus DEIR was drafted with the advice and collaboration from a wide range of affected interest represented by the Department, the State Water Contractors, the Planning and Conservation League, the Citizens Planning Association of Santa Barbara, and Plumas County Flood Control and Water Conservation District. The Monterey Plus DEIR adequately describes the environmental effects of the Monterey Amendment. The analysis in the Monterey Plus DEIR shows that:

- There have been no significant environmental impacts resulting from the Monterey Amendment from 1996 through the present.

- With limited exceptions, future environmental impacts from the Monterey Amendment are also at less-than-significant levels. Those few resource categories where potentially significant impacts have been identified involve either a provision analyzed under a worst-case scenario that is unlikely to occur, or involve certain future projects that will be subject to additional, project-level CEQA review.

In the interest of ensuring the Monterey Plus DEIR is complete in all respects, CLWA submits the following comments that are specifically directed to issues related to the Kern-Castaic Transfer. That 1999 permanent transfer of 41,000 AFY of SWP Table A amount from Kern County Water Agency (KCWA) and its member unit, Wheeler Ridge Maricopa Water Storage District (WRMWSD), to CLWA is included as part of the Monterey Amendment's aggregate pre-approved permanent 130,000 AFY SWP Table A transfers (Attachments 1 and 2). Several events and legal decisions related to the Kern-Castaic Transfer have taken place since the signing of the Monterey Settlement Agreement. CLWA provides the following information concerning these events and legal decision for incorporation into the Final EIR.

I. Kern-Castaic Transfer EIR Litigation

CLWA's original EIR prepared in connection with the Kern-Castaic Transfer was challenged in 1999 by Friends of the Santa Clara River (Friends) in the Los Angeles County Superior Court (*Friends of the Santa Clara River v. Castaic Lake Water Agency* [LASC Case Number BS 056954] ["Friends Action"]). On appeal, the Second Appellate District held that since the EIR tiered off the Monterey Amendment EIR that was later decertified, CLWA would also have to decertify its EIR as well and prepare a revised EIR. CLWA, however, was not enjoined from using any water that is part of the Kern-Castaic Transfer (*Friends of the Santa Clara River v. Castaic Lake Water Agency* ("*Friends I*") (2002) 95 Cal.App.4th 1373, 1387-1388) (Attachment 3).

Friends then appealed the trial court's refusal upon remand to enjoin CLWA's use of the transfer water. The determination that CLWA was not enjoined from using any water that is part of the Kern-Castaic Transfer was upheld by the same division of the Second Appellate District in an unpublished decision (*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2003) 2003 Cal.App. Unpub. LEXIS 11239) (Attachment 4).

Under the jurisdiction of the Los Angeles County Superior Court in the Friends Action, CLWA prepared and circulated a revised Draft EIR for the Kern-Castaic Transfer, received and responded to public comments regarding the revised Draft EIR, and held two separate public hearings concerning the revised Draft EIR. CLWA approved the revised EIR for the Kern-Castaic Transfer on December 22, 2004 (2004 EIR) and lodged the 2004 EIR with the Los Angeles Superior Court as part of its Return to the Preemptory Writ of Mandate in the Friends Action (CLWA Resolution Certifying Final 2004 EIR and CLWA Return to Peremptory Writ of Mandate – Attachments 5 and 6). Thereafter, the Friends Action was dismissed with prejudice – that is, permanently (Attachment 7).

In January 2005, two new challenges to CLWA's environmental review (i.e., the revised Draft EIR) for the Transfer were filed in the Ventura County Superior Court by the Planning and Conservation League (PCL) and the California Water Impact Network (CWIN); these cases were consolidated and transferred to Los Angeles County Superior Court (*Planning and Conservation League v. Castaic Lake Water Agency* [LASC Case No. BS 098724) (PCL Action). As part of its ruling on the demurrers, the trial court noted that the Kern-Castaic Transfer is valid and that principles of collateral estoppel barred petitioners from re-raising issues resolved by the Second Appellate District with respect to the original EIR for the Transfer (Trial Court's Rulings on Demurrers and Motion for Legal Determination – Attachments 8 and 9).

On May 22, 2007, a final Statement of Decision was filed by the trial court in the PCL Action. It included a determination that the Kern-Castaic Transfer is valid and cannot

be terminated or unwound. The trial court, however, also found one defect in the 2004 EIR and ordered CLWA to correct the defect and report back to the court. The defect did not relate to the environmental conclusions reached in the 2004 EIR; rather CLWA is required to better establish the basis for selecting three alternative scenarios covered in the 2004 EIR (Attachment10). As a result, judgment was entered against CLWA and another Peremptory Writ of Mandate issued directing CLWA to set aside its certification of the 2004 EIR (Attachment 11). The Writ, however, specifically stated that it did not call for CLWA to set aside the Transfer (Attachment 12).

On July 9, 2007, PCL and CWIN appealed the Judgment in the PCL Action (Attachment 13.) Cross-appeals have since been filed by CLWA and two of the real parties (Attachments 14 and 15).

II. Other Court Decisions Recognizing the Finality of the Kern-Castaic Transfer

The trial court in the PCL Action was neither the first court nor the only court to recognize that the Kern-Castaic Transfer is final, permanent and not subject to rescission.

A. In *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (*SCOPE II*) (2007) 157 Cal. App. 4th 149, the Second Appellate Court upheld the trial court's denial of the County of Los Angeles recertification, after remand and revision, of an EIR for West Creek development in the Santa Clarita Valley (Slip Op., p. 27). (Attachment 16). In evaluating the certainty of the Kern-Castaic Transfer using the four principles set forth by the California Supreme Court in *Vineyard*, the Court of Appeal concluded that the transfer is permanent and final, and that with or without the Monterey Amendment, the Transfer can legally occur and will continue to exist (Slip Op. p. 18-25). Although the SCOPE II decision does not address the other permanent SWP Table A transfers in Attachment E to the Monterey Settlement Agreement, the decision's rationale supports similar conclusions for each of those transfers.

B. In *Sierra Club v. City of Santa Clarita (* LASC Case No. BS098722), the trial court rejected Sierra Club's challenge to the EIR for the Riverpark development in Santa Clarita (Attachment 17). In the trial court's August 14, 2006 Statement of Decision, it concluded that substantial evidence supported the City's conclusion that the Kern-Castaic Transfer was final, permanent and not subject to rescission.

C. In *California Water Impact Network v. Castaic Lake Water Agency* (LASC Case No. BS 103295), the trial court rejected CWIN's and Friend's challenge to CLWA's 2005 Urban Water Management Plan (Attachment 18). In its August 3, 2007 Statement of Decision, the trial

court concluded that substantial evidence supported the determination that "the Kern-Castaic Transfer remains a valid and reliable water source" (Attachment 17, p. 12-13). The trial court identified this evidence as including (1) the Kern-Castaic Transfer was completed in 1999, and DWR has allocated and annually delivered the water in accordance with the completed transfer; (2) the Court of Appeal held that the only defect in the 1999 EIR was that it tiered from the Monterey Agreement EIR, which was later decertified (*Friends I, supra,* 95 Cal. App. 4th at p. 1387); (3) the defect has been remedied by the preparation of a revised EIR that did not tier from the Monterey Agreement EIR; (4) the Monterey Amendments settlement agreement expressly authorizes the operation of the SWP in accordance with the Monterey Amendments, which facilitated the Kern-Castaic Transfer; (5) the Court of Appeal refused to enjoin the Kern-Castaic Transfer, and instead required preparation of a revised EIR; and (6) the Kern-Castaic Transfer contracts remain in full force and effect, and no court has ever questioned their validity or enjoined the use of this portion of CLWA's SWP Table A Amount (*Ibid.*).

D. In *Santa Clarita Oak Conservancy v. City of Santa Clarita* (LASC Case No. BS 084677), environmental groups challenged a return EIR for the Gate-King Industrial Park Project. In its Statement of Decision, the trial court upheld the sufficiency of the return EIR, and determined that substantial evidence supported the City's conclusion that the Kern-Castaic Transfer was permanent and would continue to exist with or without the Monterey Amendment (Attachment 19). It identified this evidence as including (1) the 41,000 AFY Kern-Castaic Transfer being completed and implemented in 1999, (2) CLWA paying approximately $47 million for the additional SWP Table A Amount, (3) these monies having been delivered, and the sales prices having been financed through CLWA by tax-exempt certificates of participation, (4) DWR having increased CLWA's SWP Table A Amount and delivered or made available to CLWA the 95,200 AFY (which includes the 41,000 AFY transfer amount) because it was a permanent transfer/reallocation of SWP Table A Amount between SWP contractors, (5) DWR listing the 41,000 AFY as part of CLWA's allocation in its published Notices to State Water Project Contractors, (6) DWR treating the transfer as permanent and final, (7) DWR not objecting to CLWA preparing its own EIR for the Kern-Castaic Transfer, and (8) DWR expressly allocating the 41,000 AFY as part of CLWA's annual SWP Table A Amount in DWR's 2005 SWP Delivery Reliability Report (Attachment 18, p. 15-16).

III. Conclusion

In summary, CLWA notes that it supported implementation of the Monterey Amendment in 1996, and that it supports its continued implementation into the future. CLWA also commends the Department for having prepared this thorough and significant document. Thank you for the opportunity to comment on the Draft EIR. If you have any questions, please contact me at (661) 513-1239.

Sincerely,

Dan Masnada
General Manager

Attachments

AGREEMENT TO PURCHASE
WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT
STATE WATER PROJECT ENTITLEMENT TO WATER

WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT, a public entity ("Wheeler Ridge") and **CASTAIC LAKE WATER AGENCY**, a public entity ("Castaic") hereby agree as follows:

ARTICLE 1. DEFINITIONS.

When used in this contract, the following terms shall have the meanings hereinafter set forth:

1.01 "CEQA" means the California Environmental Quality Act, Public Resources Code Section 21000 et seq.

1.02 "Closing Date" means the date within two weeks after the date on which all applicable conditions precedent are completed to Castaic's and Wheeler Ridge's satisfaction or waived.

1.03 "DWR" means the Department of Water Resources, State of California.

1.04 "Effective Date" means the date this Agreement becomes effective which shall occur when it is last executed by both parties.

1.05 "Firm Water" means that State Water Project water designated in Table A of the Kern/State Water Contract to be made available to the Kern County Water Agency by DWR. Wheeler Ridge's allocation of firm water is specified in Table 1 of the Wheeler Ridge/Kern Contract.

1.06 "Incremental Capacity" means capacity beyond reach 10 of the California Aqueduct.

1.07 "Kern/State Water Contract" means the contract between Kern County Water Agency and the State of California dated November 15, 1963 and all amendments thereto.

1.08 "Monterey Agreement" means the agreement between the Department of Water Resources and the State Water Project contractors outlining principles for amendments to the State Water Project contracts as agreed to on December 1, 1994, and as implemented through contract amendments with the SWP Contractors, the amendment to the Kern/State Water Contract being dated December 13, 1995, and the Castaic/State Water Contract being dated December 11, 1996.

1.09 "Purchase Price" means the price to be paid by Castaic for State Water Project Entitlement and capacity in the California Aqueduct in various quantities from the beginning of the California Aqueduct to Reaches 14 through 16 of the California Aqueduct all as set forth in Exhibit A.

The parties agree that the basis of the purchase price is $1000 per acre-foot for the transferred entitlement including conveyance capacity from the beginning of the California Aqueduct through Reach 10 of the California Aqueduct. For Incremental Capacity through Reaches 14, 15 and 16, the parties agree to an incremental charge of $25 per acre-foot per Reach beyond Reach 10. The total unit price for the transferred entitlement by Reach is as follows:

	Unit Price
Reach 14 (Includes 14A, 14B and 14C)	$1100/AF
Reach 15	$1125/AF
Reach 16	$1150/AF

1.10 "Transferred Entitlement" means the entitlement to the delivery of Firm Water from the State Water Project being transferred to Castaic pursuant to this Agreement including rights to delivery capacity in the State Water Project facilities within the California Aqueduct as set forth in Exhibit A.

1.11 "Wheeler Ridge/Kern Contract" means the contract between Wheeler Ridge and Kern County Water Agency dated May 8, 1970, and all amendments thereto.

1.12 "Wheeler Ridge Water Entitlements" means Wheeler Ridge's current entitlements to the delivery of Firm Water from the State Water Project, including Wheeler Ridge's rights to delivery capacity in State Water Project facilities within the California Aqueduct in Reach 14, 15 and 16 as such facilities are described in the Wheeler Ridge/Kern Contract.

ARTICLE 2. GENERAL.

2.01. The Kern County Water Agency ("Kern") and the State of California, acting through DWR, previously entered into the Kern/State Water Contract for the acquisition and delivery of water to Kern.

2.02. Subsequently, Wheeler Ridge and Kern entered into the Wheeler Ridge/Kern Contract for the acquisition and delivery to Wheeler Ridge of a portion of the water delivered to Kern under the Kern/State Water Contract.

2.03. The Wheeler Ridge/Kern Contract gives to Wheeler Ridge a contract entitlement for therein defined Firm Water, to be provided from Kern's State Water Project entitlements. Wheeler Ridge currently has a Firm Water entitlement of 238,088 acre feet per annum.

2.04. The Wheeler Ridge/Kern Contract in Articles 25 and 28 thereof provides for assignment by Wheeler Ridge of all or a portion of its Firm Water to successors and assigns of Wheeler Ridge subject to approval of such assignment by Kern, which shall not be arbitrarily, capriciously or unreasonably refused, and Article 31

as amended December 13, 1995, specifically provides for permanent transfers of contract entitlement, subject to certain procedures therein specified.

2.05. Kern has agreed as a condition of the Monterey Agreement to facilitate the transfer of up to 130,000 acre feet of its member units State Water Project entitlement to out of County entities.

2.06. Wheeler Ridge has entered into water service contracts with various of its landowners providing for delivery of water made available under the Wheeler Ridge/Kern Contract, and various landowners which have entered into such Water Service Contracts with Wheeler Ridge wish to forego the right to use and permanently relinquish all or a part of the entitlement available under such Water Service Contracts.

2.07. Castaic desires to acquire, and Wheeler Ridge desires to sell, in perpetuity, a portion of the Wheeler Ridge Water Entitlements, in the quantity specified in Article 3.01 of this Agreement.

2.08. Wheeler Ridge has reviewed and approved as a responsible agency, the environmental document for its action contemplated in this Agreement, in compliance with CEQA, which through approval of that certain "Final Environmental Impact Statement – Transfer of State Water Project entitlement from Belridge Water Storage District, Lost Hills Water District, and Wheeler Ridge-Maricopa Water Storage District." (SCH#98021041) on June 23, 1998, has been completed. Castaic has reviewed and certified as a lead agency the environmental document for its action contemplated in this Agreement in compliance with CEQA, which through approval of that certain "Final Environmental Impact Report – Castaic Lake Water Agency – Supplemental State Water Project Entitlement" (SCH #98041127) on March 29, 1999, has been completed. This transaction is proceeding on the express and mutual assumption and understanding of the parties hereto that both parties have complied with environmental review obligations as required by law and that all other parties having such obligations have likewise complied with law, or will do so before the

closing date. In the event either or both of the parties are determined not to have complied, then each party shall take all necessary steps to promptly produce environmental documents which are in compliance with law.

2.09. This transaction is proceeding on the express and mutual assumption and understanding of the parties hereto that all rights of first refusal of third parties pursuant to the Monterey Agreement have been waived or not exercised by the respective parties holding such rights, and that any such rights of first refusal within Wheeler Ridge have been waived or not exercised.

ARTICLE 3. PURCHASE AND PAYMENT TERMS.

3.01. Purchase and Sale. At the closing, and upon satisfaction or waiver of all conditions to its performance, Wheeler Ridge hereby sells to Castaic and Castaic acquires, in perpetuity, 41,000 acre feet per annum of Wheeler Ridge Water Entitlements at the Purchase Price.

3.02. Payment. Payment of the Purchase Price shall be made as follows:.

Castaic shall, upon approval of the Wheeler Ridge Water Entitlements transfer by the Department of Water Resources and Kern County Water Agency, and to the reasonable satisfaction of Castaic, pay the Purchase Price to Wheeler Ridge, upon execution of transfer documentation to the reasonable satisfaction of Castaic.

3.03 Additional Payment for 1999 Water Charges and Use of Water.

Castaic shall, upon approval of the Wheeler Ridge Water Entitlement transfer by the Department of Water Resources and Kern County Water agency, pay to Wheeler Ridge the 1999 State Water Project obligation associated with the Transferred Entitlement as set forth in Exhibit B. Said payment shall include the Delta Water charge, Transportation Capital and OMP&R charges and the Water Revenue Bond Surcharge as charged to the Kern County Water Agency by the Department of Water Resources for the Transferred Entitlement. During 1999,

Wheeler Ridge shall have full use of the 41,000 acre-feet of Transferred Entitlement.

3.04 Future Annual SWP Costs of Transferred Entitlement. All costs associated with the Transferred Entitlement shall be assumed by and paid by Castaic commencing January 1, 2000.

DWR and KCWA will be requested to make the appropriate adjustments in components of the "proportionate use factors" used to calculate cost shares of SWP transportation facilities, consistent with this Agreement, to assure the cost allocation intent of this Agreement is implemented.

In conjunction with the transfer of 41,000 acre-feet of SWP entitlement, Castaic will be transferred a proportionate share of Wheeler Ridge's share of capacity through Reach 13 of the California Aqueduct. The shares of capacity in Reaches 14 through 16 are set forth in Exhibit A.

ARTICLE 4. DWR COMPLIANCE

4.01. Transfer. The Transfer contemplated by this Agreement shall be subject to all of the terms and conditions contained in Article 53 of the December 13, 1995, Amendment 17 of the Water Supply Contract between the State of California Department of Water Resources and Kern. The parties hereto shall execute such documents and assume such obligations as specified therein with respect to this transfer. Castaic shall assume a proportionate share of the Annual obligations of Wheeler Ridge specified in Article 15 of the Wheeler Ridge/Kern Contract based on the proportion that the Wheeler Ridge Water Entitlements transferred under the Wheeler Ridge/Kern Contract, including a proportional share of the fixed State Water Project costs, as described in Article 3.04.

4.02. Point of Delivery. The points of delivery of the transferred Wheeler Ridge Water Entitlements shall be from Reaches 14, 15 and 16 of the California Aqueduct as shown in Exhibit A and Castaic shall bear all costs of delivery to the Castaic

Service Area. Actual physical delivery of water will be subject to schedules approved by DWR.

ARTICLE 5. CONDITIONS PRECEDENT

5.01 Castaic Conditions Precedent. Castaic's obligation to purchase hereunder is subject to satisfaction or express written waiver by Castaic of each of the following conditions precedent. Failure of any of the following conditions to be met to the satisfaction of or waived by Castaic shall entitle Castaic to terminate this Agreement. Castaic shall timely communicate such failure to Wheeler Ridge. The following conditions precedent apply:

(a) Final written approval of Kern County Water Agency of the transfer of Wheeler Ridge Water Entitlements as contemplated herein, which shall be deemed evidenced by execution of the Wheeler Ridge/Kern contract as attached hereto as Exhibit C hereof;

(b) Final written approval of DWR to the transfer of Wheeler Ridge Water Entitlements as contemplated herein, including written assurance by DWR that the water which is the subject of this transfer will continue to be delivered into the California Aqueduct, up to the delivery points of Castaic, which shall be deemed evidenced by DWR execution of the Kern/State Water Contract and the Castaic/State Water Contract amendments as attached hereto in Exhibits D and E hereof;

(c) Execution and implementation of all necessary contract amendments and cancellations by owners of land within Wheeler Ridge representing Contract Amounts of Water of 41,000 acre-feet for the water transfer hereunder;

(d) Execution of amendments consistent with the terms of this Agreement of the Wheeler Ridge/Kern Contract, the Kern/State Water Contract and the Castaic/State Water Contract;

(e) There are no material, adverse changes to the representations and warranties made by Wheeler Ridge in Article 8.02;

(f) Delivery by Wheeler Ridge of an opinion of its legal counsel addressed to Castaic that this Agreement has been duly authorized, executed and delivered by Wheeler Ridge and constitutes the valid and binding obligation of Wheeler Ridge enforceable against Wheeler Ridge in accordance with its terms, subject to the effect of any bankruptcy, insolvency, reorganization, moratorium or other laws or judicial decisions affecting the enforcement of creditors' right generally, including but not limited to the effect of statutory and other laws or judicial decisions regarding fraudulent conveyances or transfers and preferential transfers and that presently there is no litigation in which Wheeler Ridge is a party which in any way affects Wheeler Ridge's ability to complete the transfer of the Transferred Entitlement.

5.02 Wheeler Ridge Conditions Precedent. Wheeler Ridge's obligation to sell hereunder is subject to satisfaction or express written waiver by Wheeler Ridge of each of the following conditions precedent. Failure of any of the following conditions to be satisfied or waived by Wheeler Ridge shall entitle Wheeler Ridge to terminate this Agreement. Wheeler Ridge shall timely communicate such failure to Castaic. The following conditions precedent apply:

(a) Documentation by Castaic of its financial ability to meet the payment obligations under the terms of this agreement;

(b) Payment of the sum(s) by Castaic herein provided;

(c) Final written approval of Kern County Water Agency of the transfer of Wheeler Ridge Water Entitlements as contemplated herein;

(d) Final written approval of DWR to the transfer of Wheeler Ridge Water Entitlements as contemplated herein, including written assurance by DWR

that the water which is the subject of this transfer will continue to be delivered into the California Aqueduct, up to the delivery points of Castaic;

(e) Execution and implementation of all necessary contract amendments and cancellations by owners of land within Wheeler Ridge representing Contract Amounts of Water of 41,000 acre-feet for the water transfer hereunder;

(f) Execution of amendments consistent with the terms of this Agreement of the Wheeler Ridge/Kern Contract, the Kern/State Water Contract and the Castaic/State Water Contract; and

(g) There are no material, adverse changes to the representations and warranties made by Castaic in Article 8.02.

ARTICLE 6. COSTS.

All costs associated with the environmental review of the action contemplated in this Agreement shall be allocated between the parties as follows:

(a) All costs associated with the review of the contemplated action within Wheeler Ridge or Kern County, including the costs of any lawsuit brought by any interest challenging Wheeler Ridge's Environmental Review, shall be borne by Wheeler Ridge.

(b) All costs associated with the review of the environmental impacts of the contemplated action within Castaic, including the costs of any lawsuit brought by any interest challenging Castaic's Environmental Review, and impacts associated with conveyance of water to Castaic shall be borne by Castaic; and

(c) In the event that any costs do not reasonably fall within categories (a) or (b) of this paragraph, then Wheeler Ridge and Castaic shall share such

costs equally. In the event that the parties cannot agree how to allocate such costs, they shall submit the issue to an impartial arbitrator agreed to by both parties. The decision of the arbitrator as to the allocation of costs shall be final, non-appealable and binding on the parties.

ARTICLE 7. CLOSING COVENANTS

7.01. Concurrent with Close of the sale, the following shall be accomplished:

(a) Wheeler Ridge shall obtain execution of all necessary contract amendments and cancellations by owners of land within Wheeler Ridge representing Contract Amounts of Water of 41,000 acre-feet for the water transfer hereunder pursuant to Article 5.01(c), and as further described in Article 5.02(e) wherein said landowners shall waive any and all claims to the Wheeler Ridge Water Entitlements herein described or to any water rights resulting therefrom, and shall covenant not to initiate any legal action as to any use or entitlement; and

(b) Castaic shall pay or cause to be paid to Wheeler Ridge the purchase price.

7.02. In no event shall the sale close later than April 1, 1999, and if not closed by that date, this Agreement shall terminate.

ARTICLE 8. MISCELLANEOUS.

8.01. As-Is. Subject to the representations and warranties set forth in Article 8.02, Castaic represents and warrants that Castaic is purchasing the Wheeler Ridge Water Entitlements, "As-Is", with respect to the quality of the water transferred under this Agreement and the physical availability of water arising from political, environmental, climatological, physical condition of the aqueduct, and hydrologic conditions.

8.02. Representations and Warranties. The parties, as indicated hereinbelow, hereto represent and warrant that as of the date of this Agreement and as of the date of transfer:

(a) Wheeler Ridge represents and warrants that it is the legal owner of the Wheeler Ridge Water Entitlements with full authority to transfer such entitlements;

(b) Wheeler Ridge represents and warrants that its entry into this Agreement does not create or result in the breach of any other agreement to which Wheeler Ridge is a party or to which Wheeler Ridge is otherwise subject or bound; Castaic represents and warrants that its entry into this Agreement does not create or result in the breach of any other agreement to which Castaic is a party or to which Castaic is otherwise subject or bound;

(c) Wheeler Ridge represents and warrants that title to the Wheeler Ridge Water Entitlements is held free and clear of any liens, encumbrances, or rights of any other party, other than obligations of the State Water Project and obligations to bond holders related to construction of its distribution system which will be fully funded and paid through funds provided to Wheeler-Ridge upon closing, and Wheeler Ridge shall maintain the Wheeler Ridge Water Entitlements free and clear of any such claims and assume full responsibility therefor;

(d) Wheeler Ridge represents and warrants that the execution and delivery of this Agreement by Wheeler Ridge has been validly authorized by all requisite action on the part of Wheeler Ridge; Castaic represents and warrants that the execution and delivery of this Agreement by Castaic has been validly authorized by all requisite action on the part of Castaic;

(e) Wheeler Ridge represents and warrants that other than *Planning and Conservation League v. Department of Water Resources, et al.*, Sacramento County Superior Court Case No. 95 CS 03216, there currently

breach of or default under any applicable law or administrative rule or regulation of the State, or of any department, division, agency or instrumentality thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, bond, resolution, indenture, contract, agreement or other instrument to which Wheeler Ridge is a party or is otherwise subject or bound; Castaic represents and warrants that compliance by Castaic with the provisions of this Agreement will not conflict with or constitute a breach of or default under any applicable law or administrative rule or regulation of the State, or of any department, division, agency or instrumentality thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, bond, resolution, indenture, contract, agreement or other instrument to which Castaic is a party or is otherwise subject or bound.

8.03. Covenants. Wheeler Ridge and Castaic covenant and agree as follows:

(a) The representations and warranties included or provided for in this Agreement or in any Schedule or certificate or other document delivered pursuant to this Agreement shall survive the Closing Date for a period of twenty (20) years, or such shorter period as may be required by law.

(b) The parties shall cooperate with each other, and, will from time to time, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such further instruments, including documents of transfer, certifications and opinions as may reasonably be required for carrying out the intention of or facilitating the performance of this Agreement and as will facilitate Castaic's issuance of any notes, bonds, or other obligations to finance payment of the Purchase Price.

8.04. Finders. Castaic and Wheeler Ridge represent to each other that neither has dealt with any finder, agent, broker or person with respect to this transaction and no other finder, agent, broker or other person is entitled to the payment of a fee, commission or other compensation with respect thereto. Wheeler Ridge hereby agrees to indemnify and hold Castaic harmless from all loss and liability

including, without limitation, costs and attorneys' fees in the event any claim is made which is contrary to such representation. Castaic hereby agrees to indemnify and hold Wheeler Ridge harmless from all loss and liability including, without limitation, costs and attorneys' fees in the event any claim is made which is contrary to such representation.

8.05. Interpretation. This Agreement has been executed in California and California law shall apply to this Agreement. The captions of paragraphs used in this Agreement are for convenience only. The provisions hereof shall be binding upon and inure to the benefit of the successors and assigns of Wheeler Ridge and Castaic. Any amendment or modification of this Agreement must be in writing, signed by Wheeler Ridge and Castaic. This Agreement contains the entire agreement of the parties hereto and supersedes any prior written or oral agreements. All oral or written representations, agreements, arrangements or understandings relating to the subject matter are fully expressed herein. The parties agree and acknowledge that this Agreement has been mutually reviewed by counsel for the two parties and that the provisions of Civil Code §1654 shall not apply to the interpretation of this Agreement.

8.06 Time of Essence. Time is of the essence of this Agreement.

8.07. Attorneys' Fees. In the event any party to this Agreement brings any legal or equitable proceedings for enforcement of any of the terms or conditions of this Agreement, or any alleged disputes, breaches, defaults or misrepresentations in connection with any provision of this Agreement, the prevailing party in such action, or the nondismissing party where the dismissal occurs other than by reason of a settlement, shall be entitled to recover its reasonable costs and expenses, including, without limitation, reasonable attorneys' fees and costs of defense paid or incurred in good faith. The "prevailing party," for purposes of this Agreement, shall be deemed to be that party who obtains substantially the result sought, whether by settlement, dismissal or judgment or as determined by the court, arbitrator or mediator to whom the dispute is submitted.

8.08. Additional Documents. From time to time, each party shall execute and deliver such instruments of transfer and other documents as may be reasonably required to carry out the purpose and intent of this Agreement.

8.09. Assignment. This Agreement may be assigned by Castaic upon written consent of Wheeler Ridge.

8.10. Dependency and Survival of Provisions. The respective warranties, representations, covenants, agreements, obligations and undertakings of each party hereunder shall be construed as dependent upon and given in consideration of those of the other party and shall survive the completion of the transfer for the period prescribed in Section 8.03(a). No waiver by either party on any provision hereto shall be deemed a waiver of any other provision hereof or of any subsequent breach by either party of the same or any other provision.

8.11. Notices. All notices, approvals, consents or other documents required or permitted under this Agreement shall be in writing, and, except as otherwise provided herein, shall be effective upon personal delivery or three (3) days after deposit in the United States mails, registered and not certified mail, with first-class postage fully prepaid, addressed as follows:

Wheeler Ridge: Wheeler Ridge-Maricopa Water Storage District
P. O. Box 9429
Bakersfield, CA 93389-9429
Attention: Engineer-Manager

With a copy to: Ernest A. Conant, Esq.
The Law Offices of Young Wooldridge
1800 30th Street, 4th Floor
Bakersfield, CA 93301

Castaic Lake: Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
Attention: General Manager

With a copy to: Robert H. Clark, Esq.
27066 Jarana Court
Valencia, CA 91354-2231

or to such other addresses as either party shall, from time to time, specify in the manner provided herein.

8.12. Venue. The parties agree that, in any action to interpret or enforce this Agreement, venue shall be improper in the counties of Kern or Los Angeles.

8.13. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed as original, but all of which together shall constitute one and the same Agreement

IN WITNESS WHEREOF, Wheeler Ridge and Castaic, by execution of counterparts hereof, have approved this Agreement. This Agreement shall become effective upon its execution by Wheeler Ridge and Castaic.

Dated: March 31, 1999

WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT

By: _____
Its President, Board of Directors

By: _____
Its Secretary, Board of Directors

CASTAIC LAKE WATER AGENCY

By: _____
Its President, Board of Directors

By: _____
Its Secretary, Board of Directors
Asst

EXHIBIT "A"
WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT
STATE WATER PROJECT ENTITLEMENT TO WATER

California Aqueduct Reach	Current Wheeler Ridge-Maricopa Entitlement To and Through Reach Acre-Feet	Current Wheeler Ridge-Maricopa Capacity In Reach (cfs)	Transferred Entitlement To and Through Reach (Ac. Ft.)	Transferred Entitlement In Reach (Ac. Ft.)	Transferred Capacity in Reach (cfs)	Unit Price ($/AF)	Purchase Price
14A	238,088	699.0	41,000	16,317	120.4	1100	17,948,700
14B	197,988	619.0	24,683	12,519	77.2	1100	13,770,900
14C	113,188	424.0	12,164	2,617	45.6	1100	2,878,700
15A	80,788	320.0	9,547	3,571	37.8	1125	4,017,375
16A	40,624	168.0	5,976	5,976	24.7	1150	6,872,400
Total				41,000			45,488,075

c\wrm\docs\Agreement to Purchase WRM - Castaic Exh A

EXHIBIT "A"

EXHIBIT B

Castaic Lake Water Agency
Obligation for 1999 Water Costs

Reach	Delta Water Charge	Transportation Charge: Capital Component	Transportation Charge: Minimum OMP&R Component	Water Revenue Bond Surcharge	Total
14A	$ 386,000	$176,700	$ 204,900	$106,000	$873,600
14B	296,200	147,200	161,700	84,700	689,800
14C	61,900	29,500	34,500	17,300	143,200
15	84,500	44,700	62,100	26,900	218,200
16	141,400	113,600	114,800	48,900	418,700
Total	**$ 970,000**	**$511,700**	**$578,000**	**$ 283,800**	**$2,343,500**

TABLE 1
WHITEWATER RIDGE-MARICOPA WATER STORAGE DISTRICT

Entitlements for deliveries from the California Aqueduct in thousands of acre-feet

Year	Reach 14A* Contract Entitlement	Reach 14A* Surplus	Reach 14A* Total	Reach 14B* Contract Entitlement	Reach 14B* Surplus	Reach 14B* Total	Reach 14C* Contract Entitlement	Reach 14C* Surplus	Reach 14C* Total	Reach 15* Contract Entitlement	Reach 15* Surplus	Reach 15* Total	Reach 16* Contract Entitlement	Reach 16* Surplus	Reach 16* Total	(1) TOTAL ENTITLEMENTS Total Contract Entitlement	(2) TOTAL ENTITLEMENTS Surplus	(3) TOTAL ENTITLEMENTS Former Table 1 Entitlement (Col 1+2)	(4) Annual Obligation In % of Total State Charges
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971	2 100	6 000	8 100	4 700	13 100	17 800	2 300	6,200	8 500	0 900	2,400	3,300	-	0 100	0 100	10 000	27 800	37 800	10 8713
1972	6 600	5 500	12 100	14 600	11 800	26 400	7 000	5,700	12,700	14 800	12 900	26,900	1 100	1,000	2 100	44 100	36 100	80 200	17 1610
1973	8 600	8 200	16,800	18 000	17 300	35 300	8 700	8 300	17 000	18 500	17,700	36 200	1 400	1 400	2 800	55 200	52 900	108 100	20,7593
1974	11 700	22 000	33 700	15 500	30 400	46 100	7 400	14 500	21 900	13 700	31,100	45 800	1,200	2 400	3,600	51,000	100 600	151 600	26,5374
1975	12 300	22 500	34 800	18 400	33 200	51 600	9,400	16 800	26 200	17,100	34,000	48 100	1,200	2,400	3 600	58 400	105,900	164 300	27 1810
1976	14 300	22 700	37 000	22 800	35 600	58 400	10 900	17 000	27,900	19 900	31,200	51,100	1 500	2,400	3,900	69,400	106 900	176 300	28 6431
1977	16 500	22 000	38 500	26 100	34 600	60 700	12 600	16 500	29,100	22 900	30,300	53,200	3 900	6 100	8,900	81 900	106 500	190 400	25 8870
1978	17 300	20 100	37 400	27 300	31 800	59 100	15 100	17 600	32 700	24 000	27 800	51 800	10 700	12 400	23 100	94 400	109 700	204 100	23 9768
1979	19 200	19 900	39,100	30 400	31 300	61 700	16 700	17 400	34,100	26 500	29 400	57 900	11,800	12 300	24,100	108 500	110,300	218 900	23 4767
1980	21,000	19 200	40 200	34 200	33 800	68 200	18 400	16 700	35 100	31,200	28,300	58 500	12,900	11,800	24 800	119 700	108 100	228 800	23 8326
1981	23 200	18 400	41 600	42 500	33 600	76 100	20 300	16 100	36 400	34 400	27,200	61,600	14,400	11 300	25,700	134,800	106 600	241 400	23 0521
1982	24 100	18 900	43 000	46 900	32 800	79,700	21 100	14,800	35,900	35 700	25 000	60,700	26 900	14,700	35 600	148,700	104 200	252 900	22 7347
1983	26 800	15 200	41 800	54 100	31,200	85,300	23,200	13,300	36 500	39 300	22 600	61,800	23 100	13,200	36 300	166 300	93 400	261 700	23 3158
1984	27 900	14 000	41,900	56 700	28,700	85 400	24 300	12 200	36 500	41,100	20 800	61,900	31,000	15 600	46 600	181 000	91 308	272 308	22 9927
1985	31 900	13 800	45 700	60 600	26 200	86 800	25 900	11,100	37 000	43 900	18 900	62 800	33 400	14 300	47,700	195,700	84 300	280 000	23 6998
1986	33 700	12 300	45 500	65 700	24 300	90 000	26 800	10 000	36 800	45 700	16,800	62 500	39 200	14,400	53,600	210 800	77 800	288 400	23 7085
1987	35 400	10 700	46 100	71 100	21 500	92 600	28 700	8 800	37 300	48,700	14 700	63 400	42 500	12,700	55 200	226,400	68 200	294 600	23 7092
1988	37 200	8 900	46 100	78 600	18 900	97,500	30 100	7,200	37 300	51,200	12 100	63,300	35,165	8 376	43 541	232 265	55 476	287 741	21,9637
1989	38 500	7 400	45 900	81 500	15 800	97 300	31 200	6 000	37 200	52 800	10,300	63 100	38,840	7 577	46,417	242 840	47 077	289 917	22 0568
1990	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37,300	55 000	8 300	63 300	40 624	5 146	46 770	252 924	38 146	291 070	27 4784
1991	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37 300	55 000	8 300	63 300	40 624	5 146	46 770	252 924	38 146	291 070	22 3761
1992	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37,300	55 000	8 300	63,300	40 624	5 146	46 770	252,924	38 146	291 070	22 3761
1993	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37,300	55 000	8,300	63 300	40 624	5 146	46,770	252 924	38 146	291 070	22 3761
1994	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37 300	55 000	8 300	63 300	40 624	5 146	46,770	252 924	38 146	291 070	22 3761
1995	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37,300	55 000	8,300	63 300	40 624	5 146	46 770	252 924	38 146	291 070	22 3761
1996	40 100	6 000	46 100	84 800	12 800	97 600	32 400	4 900	37 300	40 164	6 061	46 225	40 624	5 146	46,770	238,088	35 907	273 995	21 0198
1997	40 100	6 000	46 100	84 800	12 800	97,600	32 400	4 900	37 300	40,164	6,061	46 225	40,624	6 146	46,770	238,088	35 907	273 995	21 0218
1998	40 100	6 000	46,100	84 800	12 800	97 600	32 400	4 900	37,300	40 164	6 061	46 225	40 624	6 146	46,770	238,088	35 907	273 995	21,0197
1999	23 783	4 298	28 081	72 261	12 800	85 081	29,783	4 900	34 683	36 593	6,061	42 654	34 648	6,146	40,794	197 068	34 205	231 293	17 1701
2014	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4,900	34 683	36 593	6 061	42 654	34,648	6 146	40,794	197 068	34 205	231 293	17 1701
2015	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4,900	34,683	36 593	6 061	42 654	34,648	6 146	40,794	197,068	34 205	231 293	17 2408
2016	23 783	4 298	28 081	72 261	12,800	85 081	29 783	4 900	34 683	36 593	6 061	42 654	34 648	6 146	40,794	197,068	34 205	231 293	17 3178
2017	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42 654	34 648	6 146	40,794	197,068	34 205	231 293	17 4011
2018	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42 654	34 648	6 146	40,794	197 068	34 205	231 293	17 4737
2019	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42 654	34 648	6 146	40 794	197 068	34,205	231 293	17 5000
2020	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36,593	6 061	42,654	34 648	6,146	40 794	197,068	34 205	231 293	18 5202
2021	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36,593	6 061	42,654	34 648	6,146	40,794	197 068	34 205	231 293	18 5322
2022	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42,654	34 648	6,146	40,794	197,068	34 205	231 293	18 5364
2023	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42 654	34,648	6 146	40,794	197,068	34 205	231 293	18 5364
2024	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42 654	34 648	6 146	40 794	197,068	34 205	231 293	18 5397
2025	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4,900	34 683	36 593	6 061	42 654	34 648	6 146	40 794	197 068	34,205	231 293	18 5439
2026	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42,654	34 648	6 146	40,794	197,068	34 205	231 293	18 5447
2027-2039	23 783	4 298	28 081	72 261	12 800	85 081	29 783	4 900	34 683	36 593	6 061	42,654	34,648	6 146	40 794	197,068	34 205	231 293	18 5455

* As designated in Bulletin 132 85

041723

2/25/99 Kern County Water Agency State Contract Administration

Adjustment of Capacity for Entitlement Transfers

A. Original Contract Capacity - Wheeler Ridge-Maricopa WSD

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	263,200	47,358	785	-	785	47,360	17.99%	17.99%
14A	40,100	263,200	46,633	773	-	773	46,635	17.72%	17.72%
14B	84,800	223,100	40,178	666	32	698	42,110	18.01%	18.87%
14C	32,400	138,300	24,915	413	104	517	31,190	18.02%	22.55%
15	55,000	105,900	19,063	316	104	420	25,340	18.00%	23.93%
16	50,900	50,900	9,170	152	59	211	12,730	18.02%	25.01%
	263,200								

B. Transfer to Improvement District No. 4 (11,830 AF in Reach 16)
WRMWSD Amendment #2

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess (3) Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	11,830	2,129	35	-	35	2,129	17.99%	17.99%
14A	-	11,830	2,096	35	-	35	2,098	17.72%	17.72%
14B	-	11,830	2,130	35	2	37	2,251	18.01%	18.87%
14C	-	11,830	2,131	35	9	44	2,674	18.02%	22.55%
15	-	11,830	2,130	35	12	47	2,853	18.00%	23.93%
16	11,830	11,830	2,131	35	14	49	2,975	18.02%	25.01%
	11,830								

C. Remaining Capacity After Transfer to Improvement District No. 4 (11,830 AF in Reach 16)
WRMWSD Amendment #2

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess (3) Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	251,370	*45,229*	750	-	750	45,231	17.99%	17.99%
14A	40,100	251,370	*44,537*	738	-	738	44,539	17.72%	17.72%
14B	84,800	211,270	*38,048*	631	30	661	39,859	18.01%	18.87%
14C	32,400	126,470	*22,784*	378	95	473	28,516	18.02%	22.55%
15	55,000	94,070	*16,934*	281	92	373	22,487	18.00%	23.93%
16	39,070	39,070	*7,039*	117	45	162	9,754	18.02%	25.01%
	251,370								

Note: Column 4 was incorrectly shown in WRM Amendment #2 as max monthly delivery (Column 8).
This error was corrected in WRM's Amendment #3.

001176

041724

Adjustment of Capacity for Entitlement Transfers

D. Amended Transfer to Improvement District No. 4 (10,276 AF in Reach 16)
This corrects an error originally computed for WRMWSD Amendment #2; fixed in Amendment #3

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS) (3)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	10,276	1,849	31	-	31	1,849	17.99%	17.99%
14A	-	10,276	1,821	30	-	30	1,821	17.72%	17.72%
14B	-	10,276	1,851	31	1	32	1,940	18.01%	18.87%
14C	-	10,276	1,851	31	8	38	2,317	18.02%	22.55%
15	-	10,276	1,850	31	10	41	2,459	18.00%	23.93%
16	10,276	10,276	1,851	31	12	43	2,570	18.02%	25.01%
	10,276								

E. Remaining Capacity After Amended Transfer to Improvement District No. 4 (10,276 AF in Reach 16)
This corrects an error originally computed for WRMWSD Amendment #2; fixed in Amendment #3

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS) (3)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	252,924	45,509	754	-	754	45,511	17.99%	17.99%
14A	40,100	252,924	44,812	743	-	743	44,814	17.72%	17.72%
14B	84,800	212,824	38,327	635	31	666	40,171	18.01%	18.87%
14C	32,400	128,024	23,064	382	96	479	28,873	18.02%	22.55%
15	55,000	95,624	17,214	285	94	379	22,882	18.00%	23.93%
16	40,624	40,624	7,318	121	47	168	10,160	18.02%	25.01%
	252,924								

F. Transfer to Tejon-Castac WD (4,021 AF in Reach 15)
WRMWSD Amendment #3

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	4,021	723	12	-	12	723	17.99%	17.99%
14A	-	4,021	712	12	-	12	712	17.72%	17.72%
14B	-	4,021	724	12	1	13	759	18.01%	18.87%
14C	-	4,021	724	12	3	15	907	18.02%	22.55%
15	4,021	4,021	724	12	4	16	961	18.00%	23.93%
16	-	-	-	-	-	-	-	18.02%	25.01%
	4,021								

Adjustment of Capacity for Entitlement Transfers

G. Remaining Capacity After Transfer to Tejon-Castac WD (4,021 AF in Reach 15)

WRMWSD Amendment #3

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	248,903	44,785	742	-	742	44,787	17.99%	17.99%
14A	40,100	248,903	44,100	731	-	731	44,102	17.72%	17.72%
14B	84,800	208,803	37,603	623	30	653	39,412	18.01%	18.87%
14C	32,400	124,003	22,339	370	93	464	27,967	18.02%	22.55%
15	50,979	91,603	16,490	273	90	363	21,919	18.00%	23.93%
16	40,624	40,624	7,318	121	47	168	10,160	18.02%	25.01%
	248,903								

H. Entitlement Relinquished for KWB (10,815 AF in Reach 15)

WRMWSD Amendment #4

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	10,815	1,946	32	-	32	1,946	17.99%	17.99%
14A	-	10,815	1,916	32	-	32	1,916	17.72%	17.72%
14B	-	10,815	1,948	32	-	32	1,948	18.01%	18.87%
14C	-	10,815	1,948	32	-	32	1,948	18.02%	22.55%
15	10,815	10,815	1,947	32	-	32	1,947	18.00%	23.93%
16	-	-	-	-	-	-	-	18.02%	25.01%
	10,815								

I. Remaining Capacity After Entitlement Relinquished for KWB (10,815 AF in Reach 15)

WRMWSD Amendment #4

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	238,088	42,839	710	-	710	42,840	17.99%	17.99%
14A	40,100	238,088	42,184	699	-	699	42,186	17.72%	17.72%
14B	84,800	197,988	35,655	591	30	621	37,465	18.01%	18.87%
14C	32,400	113,188	20,391	338	93	431	26,019	18.02%	22.55%
15	40,164	80,788	14,543	241	90	331	19,972	18.00%	23.93%
16	40,624	40,624	7,318	121	47	168	10,160	18.02%	25.01%
	238,088								

Note: WRM Amendment #4 had incorrect capacities and max monthly deliveries. Apparently the error in Amendment #2 caused the error in Amendment #4.

Adjustment of Capacity for Entitlement Transfers

J. Amended Contract Capacity - Capacity Exchange with Tejon-Castac WD (3,121 AF)
WRMWSD Amendment #5 (TJCWD water moved out of Reach 15)

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	3,121	562	9	-	9	562	17.99%	17.99%
14A	-	3,121	553	9	-	9	553	17.72%	17.72%
14B	-	3,121	562	9	1	10	622	18.01%	18.97%
14C	-	3,121	562	9	3	12	743	18.02%	22.55%
15	3,121	3,121	562	9	4	13	803	18.00%	23.93%
16	-		-	-	-	-	-	18.02%	25.01%
	3,121								

K. Amended Contract Capacity - Capacity Exchange with Tejon-Castac WD (3,121 AF)
WRMWSD Amendment #5 (TJCWD water moved to Reach 16)

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	3,121	562	9	-	9	562	17.99%	17.99%
14A	-	3,121	553	9	-	9	553	17.72%	17.72%
14B	-	3,121	562	9	1	10	622	18.01%	19.94%
14C	-	3,121	562	9	3	12	743	18.02%	23.81%
15	-	3,121	562	9	4	13	803	18.00%	25.73%
16	3,121	3,121	562	9	4	13	780	18.02%	25.01%
	3,121								

L. Remaining Capacity After Capacity Exchange with Tejon-Castac WD (3,121 AF)
WRMWSD Amendment #5

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline (1) Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	238,088	42,839	710	-	710	42,840	17.99%	17.99%
14A	40,100	238,088	42,184	699	-	699	42,186	17.72%	17.72%
14B	84,800	197,988	35,655	591	30	621	37,465	18.01%	18.92%
14C	32,400	113,188	20,391	338	93	431	26,019	18.02%	22.99%
15	43,285	80,788	14,543	241	90	331	19,972	18.00%	24.72%
16	37,503	37,503	6,756	112	43	155	9,380	18.02%	25.01%
	238,088								

Adjustment of Capacity for Entitlement Transfers

M. Transfer to Castaic Lake Water Agency (41,000 AF)
WRMWSD Amendment #6

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	41,000	7,377	122	-	122	7,377	17.99%	17.99%
14A	16,317	41,000	7,284	120	-	120	7,284	17.72%	17.72%
14B	12,519	24,683	4,445	74	4	77	4,670	18.01%	18.92%
14C	2,617	12,164	2,191	36	10	46	2,796	18.02%	22.99%
15	3,571	9,547	1,719	28	11	39	2,360	18.00%	24.72%
16	5,976	5,976	1,077	18	7	25	1,494	18.02%	25.01%
	41,000								

N. Remaining Capacity After Transfer to Castaic Lake WA (41,000 AF)
WRMWSD Amendment #6

(1) Reach	(2) Contract Firm Entitlement (AF)	(3) Maximum Annual Delivery (AF)	(4) Mainline Monthly Delivery (AF)	(5) Mainline Capacity (CFS)	(6) Excess Capacity (CFS)	(7) Total Capacity (CFS)	(8) Maximum Monthly Delivery (AF)	(9) Mainline Monthly Peaking (%)	(10) Total Monthly Peaking (%)
13B	-	197,088	35,462	588	-	588	35,463	17.99%	17.99%
14A	23,783	197,088	34,919	579	-	579	34,921	17.72%	17.72%
14B	72,281	173,305	31,210	517	26	544	32,794	18.01%	18.92%
14C	29,783	101,024	18,200	302	83	385	23,223	18.02%	22.99%
15	39,714	71,241	12,824	213	79	292	17,612	18.00%	24.72%
16	31,527	31,527	5,680	94	37	131	7,885	18.02%	25.01%
	197,088								

(1) Monthly peaking % = Col 5 / (Col 3 / 60.33 af/mo).
(2) CFS = Col 5 / 60.33 af/mo.
(3) Reduced proportionately to mainline cfs reduction.
(4) Excess capacity retained by WRMWSD.

[illegible] Maricopa WSD
6A (14A)
Entitlement

	TABLE ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			JOIL
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
64																									
65																									
66																									
67																									
68																					1,174.00				
69																					2,851.00				
70																					3,754.00				
71	6,900	1,200	6,000	8,100	4.40	29.80	65.80	93.70	8.30	24.58	8.30	11.57	12.80	16.90	18.10	47.60	14.05	14.05	3.02	5.86	4,564.00	1.4055	0.8458	2.0513	(96.8487)
72	4,800	1,800	5,500	12,100	44.80	38.10	51.20	133.90	9.30	21.17	9.30	11.07	114.80	43.00	14.30	171.90	23.87	23.87	2.60	14.21	3,761.00	1.6640	0.6613	2.3259	73.1059
73	6,100	2,600	8,200	16,800	56.70	48.00	76.30	181.00	9.30	19.20	9.30	10.77	145.10	59.50	20.80	225.40	23.79	23.79	2.54	13.42	8,256.00	2.1261	0.7673	2.8934	11.6983
74	6,200	5,000	22,000	33,200	57.70	86.40	204.60	347.70	9.30	17.08	9.30	10.47	182.60	151.50	62.90	407.20	30.29	30.29	2.86	12.11	4,784.00	3.8665	1.2588	5.1253	13.5505
75	7,100	5,200	27,500	34,800	65.80	88.40	220.50	378.50	8.60	17.00	8.60	10.84	197.00	144.30	84.60	405.90	27.75	27.75	2.87	11.66	7,311.00	3.9882	1.2091	5.1773	6.7504
76	8,600	5,500	22,700	37,000	86.20	94.40	222.50	403.10	9.60	17.18	9.60	10.89	215.20	134.50	72.00	421.70	24.48	24.46	3.17	11.40	8,125.00	3.0003	1.1621	4.9674	4.1107
77	10,700	5,800	22,000	38,500	104.90	99.90	215.60	420.40	9.80	17.22	9.80	10.92	241.70	131.00	73.50	446.20	22.58	22.58	3.34	11.59	8,957.00	3.5803	1.1160	4.6963	5.1822
78	11,700	5,600	20,100	37,400	114.70	106.00	197.00	419.70	9.80	19.28	9.80	11.22	277.20	132.70	68.70	478.60	23.69	23.69	3.42	12.06	10,777.00	2.8913	1.0021	3.8934	12.3067
79	13,300	5,900	19,900	39,100	130.30	113.70	195.00	439.00	9.80	19.27	9.80	11.23	310.20	137.60	70.00	517.80	23.32	23.32	3.52	13.21	11,850.00	2.7817	0.9720	3.7537	15.2182
80	15,000	6,000	19,200	40,200	154.50	115.90	197.60	468.20	10.30	19.32	10.30	11.65	345.30	138.90	68.90	552.30	23.02	23.02	3.59	13.74	12,641.00	2.7862	0.9169	3.7031	15.2272
81	17,000	6,700	18,400	41,600	175.10	119.50	189.50	484.10	10.30	19.27	10.30	11.64	384.00	140.10	66.20	590.30	22.59	22.59	3.60	14.19	13,618.00	2.6730	0.8761	3.5491	17.9909
82	17,900	6,200	16,900	41,000	184.40	119.50	174.10	478.00	10.30	19.27	10.30	11.66	399.70	138.40	61.00	599.10	22.33	22.33	3.61	14.61	14,598.00	2.4578	0.8191	3.2769	20.2157
83	20,300	6,300	15,200	41,800	229.40	121.10	171.80	522.30	11.30	19.22	11.30	12.50	445.20	138.20	54.90	638.30	21.93	21.93	3.61	15.27	15,647.00	2.5632	0.7740	3.3372	18.5733
84	21,600	6,300	14,000	41,900	244.10	121.20	154.70	523.50	11.30	19.24	11.30	12.49	489.20	138.80	50.70	658.70	21.72	21.72	3.62	15.67	16,627.00	2.6194	0.7289	3.3483	20.2832
85	25,000	6,900	13,800	45,700	307.50	131.40	169.70	608.60	12.30	19.05	12.30	13.32	537.80	140.40	49.60	736.00	21.51	21.51	3.61	16.11	17,563.00	2.7171	0.7482	3.4653	17.3098
86	26,400	6,800	12,300	45,500	324.70	126.70	151.30	602.70	12.30	18.63	12.30	13.25	551.50	142.10	39.00	732.60	20.89	20.89	3.17	16.10	18,045.00	2.6384	0.7021	3.3405	17.7314
87	28,500	6,900	10,700	46,100	364.80	128.10	137.00	629.90	12.80	18.56	12.80	13.66	590.00	142.80	33.60	766.40	20.70	20.70	3.14	16.62	18,953.00	2.6487	0.6759	3.3226	17.8105
88	30,300	6,900	8,900	46,100	387.80	128.10	113.90	629.80	12.80	18.56	12.80	13.66	621.80	141.60	27.70	791.10	20.52	20.52	3.11	17.16	19,796.00	2.5337	0.6471	3.1808	20.3893
89	31,800	6,900	7,400	45,900	420.30	127.90	98.40	646.60	13.30	18.54	13.30	14.09	648.20	141.10	23.20	810.50	20.45	20.45	3.13	17.66	20,461.00	2.5351	0.6251	3.1602	20.2221
90	33,200	6,900	6,000	46,100	441.60	127.90	79.80	649.30	13.30	18.64	13.30	14.08	674.00	140.10	0.40	814.50	20.30	20.30	0.07	17.67	21,083.00	2.4731	0.6056	3.0787	20.2824
91	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,137.00	2.6155	0.6052	3.2207	18.4226
92	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,131.00	2.6156	0.6053	3.2209	18.4226
93	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,130.00	2.6157	0.6053	3.2210	18.4226
94	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,129.00	2.6158	0.6053	3.2211	18.4226
95	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,129.00	2.6158	0.6053	3.2211	18.4226
96	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,129.00	2.6158	0.6053	3.2211	18.4226
97	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,127.00	2.6161	0.6054	3.2215	18.4226
98	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,127.00	2.6161	0.6054	3.2215	18.4226
99	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,127.00	2.6161	0.6054	3.2215	18.4226
14	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,127.00	2.6161	0.6054	3.2215	18.4226
15	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	21,042.00	2.6267	0.6078	3.2345	18.4226
16	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,954.00	2.6377	0.6104	3.2481	18.4226
17	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,848.00	2.6511	0.6135	3.2646	18.4226
18	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,761.00	2.6621	0.6161	3.2783	18.4226
19	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,730.00	2.6667	0.6170	3.2837	18.4226
20	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,706.00	2.6693	0.6177	3.2870	18.4226
21	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,697.00	2.6711	0.6181	3.2892	18.4226
22	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,687.00	2.6717	0.6183	3.2900	18.4226
23	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,687.00	2.6717	0.6183	3.2900	18.4226
24	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,683.00	2.6722	0.6184	3.2906	18.4226
25	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,678.00	2.6729	0.6185	3.2914	18.4226
26	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,677.00	2.6730	0.6186	3.2916	18.4226
27	33,200	6,900	6,000	46,100	468.10	127.90	84.60	680.60	14.10	18.54	14.10	14.76	675.30	140.30	18.70	834.30	20.34	20.34	3.11	18.10	20,676.00	2.6731	0.6186	3.2917	18.4226

Ridge Maricopa WSD
18 (14R)
ntitlement

TABLE 1 ENTITLEMENT Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	AGENCY PRICING Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	STATE PRICING Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	MULTIPLIER Total ($1,000)	CONTRACT PERCENT Basic (%)	Option (%)	Total (%)	2010 Support (%)
																				2,124.00				
																				2,955.00				
																				3,754.00				
2 000	2 700	13 100	17,800	19.60	68.60	128.40	216.60	9.80	25.41	9.80	12.17	29.20	39.40	39.60	108.20	14.60	14.60	3.02	6.06	4,568.00	3.7399	1.5018	4.7417	[illegible]
10 600	4 000	11 800	26 400	103.90	48.70	115.80	308.20	9.98	22.18	9.60	11.87	304.90	115.00	30.70	450.60	28.76	28.76	2.80	17.07	5,761.00	3.8101	1.5397	5.3498	31.8073
17 700	5 300	17 300	35 300	124.50	107.90	169.50	401.90	9.80	20.38	9.80	11.38	317.90	132.70	43.90	494.50	25.03	25.03	2.54	14.06	6,254.00	4.6995	1.7247	6.4242	18.7260
8 600	6 900	30 600	46 100	84.30	134.70	299.90	518.90	9.80	19.82	9.80	11.26	257.70	206.80	87.50	557.00	29.97	29.97	2.86	11.97	6,784.00	5.6633	1.9856	7.6489	3.9964
10 600	7 800	33 200	51 600	109.20	148.80	347.00	600.00	10.30	19.08	10.30	11.63	302.20	222.40	95.30	619.90	28.51	28.51	2.67	12.01	7,311.00	6.1715	2.0353	8.2068	3.2107
14 000	4 800	35 600	54 400	144.70	167.20	366.70	678.10	10.30	19.00	10.30	11.61	376.70	236.80	117.00	726.40	26.91	26.91	3.17	12.44	8,123.00	6.2895	2.0584	8.3479	6.6497
17 000	9 100	34 600	60 700	175.10	173.70	358.40	705.70	10.30	19.09	10.30	11.62	423.60	226.80	115.60	766.00	24.92	24.92	3.34	12.62	8,952.00	5.9372	1.9403	7.8775	7.9373
19 400	8 900	31 800	59 100	189.50	168.00	327.50	705.00	10.30	21.12	10.30	11.93	474.90	279.70	108.80	813.40	25.81	25.81	3.42	13.76	10,777.00	4.7973	1.7445	6.5418	13.3268
21 100	9 300	31 300	61 700	217.30	196.30	327.40	738.00	10.30	21.11	10.30	11.93	532.60	234.70	110.20	877.50	25.24	25.24	3.52	16.22	11,698.00	4.6136	1.6761	6.2517	16.1254
25 800	10 400	33 000	69 200	278.60	218.90	356.10	851.90	10.80	20.66	10.80	12.31	637.80	257.10	118.50	1,013.40	24.72	24.72	3.59	14.64	12,641.00	5.0233	1.7158	6.7391	15.9365
31 100	11 400	33 600	76 100	335.80	235.30	362.90	934.10	10.80	20.64	10.80	12.27	740.80	271.50	121.00	1,133.30	23.82	23.82	3.60	14.89	13,640.00	5.1232	1.7251	6.8483	17.5770
34 900	12 000	32 800	79 700	376.90	245.30	354.20	977.40	10.80	20.53	10.80	12.28	815.80	280.40	118.40	1,214.40	23.37	23.37	3.61	15.24	14,590.00	5.0110	1.6841	6.6951	19.5158
41 400	12 700	31 200	85 300	448.50	259.10	368.20	1,115.80	11.80	20.40	11.90	13.08	951.00	291.70	112.60	1,355.30	22.97	22.97	3.61	15.89	15,647.00	5.4752	1.6559	7.1311	17.6714
43 900	12 800	28 700	85 400	518.00	261.10	338.70	1,117.80	11.80	20.40	11.80	13.09	1,000.50	291.70	103.90	1,396.10	22.79	22.79	3.62	16.35	16,627.00	5.1525	1.5703	6.7228	19.9341
47 600	13 000	26 200	86 800	609.30	264.60	335.40	1,209.30	12.80	20.35	12.10	13.03	1,070.00	292.20	94.60	1,456.80	22.48	22.48	3.61	16.78	17,563.00	5.3789	1.5066	6.8855	16.9893
52 200	13 500	24 300	90 000	668.70	267.40	311.00	1,246.60	12.80	19.61	12.80	13.05	1,137.40	294.70	77.00	1,508.60	21.79	21.79	3.17	16.78	18,045.00	5.4264	1.4819	6.9083	17.3671
57 200	13 900	21 500	92 600	780.80	274.10	286.00	1,320.90	13.30	19.77	13.30	14.26	1,232.70	299.50	67.50	1,599.70	21.55	21.55	3.14	17.28	18,953.00	5.5231	1.4462	6.9693	17.4281
64 000	14 600	18 900	97 500	851.20	288.20	251.40	1,388.80	13.30	19.80	13.30	14.24	1,363.00	311.90	58.60	1,737.70	21.36	21.36	3.11	17.67	19,796.00	5.5698	1.4457	7.0155	20.6781
66 900	14 600	15 800	97 300	923.70	286.50	218.00	1,427.70	13.80	19.62	13.80	14.67	1,423.00	310.50	49.50	1,783.00	21.27	21.27	3.13	18.32	20,481.00	5.5774	1.4002	6.9776	19.9271
70 100	14 700	12 800	97 600	967.40	287.20	176.60	1,431.20	13.80	19.54	13.80	14.66	1,481.20	310.60	0.90	1,792.70	21.13	21.13	4.07	18.37	21,063.00	5.4262	1.3622	6.7884	20.1851
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,132.00	5.7770	1.3619	7.0497	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,131.00	5.7281	1.3620	7.0901	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,130.00	5.7283	1.3620	7.0903	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,129.00	5.7286	1.3621	7.0907	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,129.00	5.7286	1.3621	7.0907	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,129.00	5.7286	1.3621	7.0907	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,127.00	5.7292	1.3622	7.0914	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,127.00	5.7292	1.3622	7.0914	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,127.00	5.7292	1.3622	7.0914	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,127.00	5.7292	1.3622	7.0914	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	21,042.00	5.7523	1.3677	7.1200	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,854.00	5.7765	1.3735	7.1500	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,848.00	5.8058	1.3805	7.1863	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,761.00	5.8302	1.3863	7.2165	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,730.00	5.8389	1.3883	7.2272	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,708.00	5.8456	1.3899	7.2355	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,692.00	5.8496	1.3909	7.2405	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,687.00	5.8510	1.3912	7.2422	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,687.00	5.8510	1.3912	7.2422	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,681.00	5.8521	1.3915	7.2436	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,678.00	5.8536	1.3916	7.2454	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,677.00	5.8538	1.3919	7.2457	18.3542
70 100	14 700	12 800	97 600	1,023.50	287.80	186.90	1,498.20	14.60	19.58	14.60	15.35	1,484.00	311.20	39.80	1,835.00	21.17	21.17	3.11	18.80	20,676.00	5.8541	1.3920	7.2461	18.3542

[illegible] WSD
4C (14C)
Entitlement

	TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOR
	Firm [AF]	Option [AF]	Surplus [AF]	Total [AF]	Firm [$1,000]	Option [$1,000]	Surplus [$1,000]	Total [$1,000]	Firm [$/AF]	Option [$/AF]	Surplus [$/AF]	Average [$/AF]	Firm [$1,000]	Option [$1,000]	Surplus [$1,000]	Total [$1,000]	Firm [$/AF]	Option [$/AF]	Surplus [$/AF]	Average [$/AF]	Total [$1,000]	Basic [%]	Option [%]	Total [%]	Suppor't [%]
1964																					.				-
1965																					.				-
1966																					.				-
1967																					.				-
1968																					2,174.00				-
1969																					2,951.00				-
1970																					3,754.00				
1971	1 000	1 300	6 200	8 500	10.30	30.50	63.90	104.70	10.31	23.46	10.31	12.32	13.30	17.20	18.70	49.20	13.26	13.26	3.02	5.78	4,560.00	1.8243	0.6677	2.2920	########
1972	5 100	1 900	8 700	17 700	52.50	39.54	84.70	150.78	10.30	20.78	10.30	11.87	143.90	53.60	14.80	212.30	28.21	28.21	2.60	16.77	5,761.00	1.9302	0.6856	2.6158	29.0155
1973	6 100	2 800	9 300	[illegible]	67.80	49.70	85.50	198.00	10.30	19.12	10.30	11.65	177.40	75.60	21.10	274.10	29.08	29.08	2.54	16.17	6,258.00	2.3705	0.7944	3.1649	27.7636
1974	4 100	3 300	14 500	21 900	42.20	61.30	149.40	252.90	10.30	18.58	10.30	11.55	119.80	96.50	41.50	257.80	29.23	29.23	2.88	11.77	6,784.00	2.8243	0.9036	3.7279	1.9007
1975	5 400	4 000	16 800	26 200	58.30	72.00	181.40	311.70	10.80	18.00	10.80	11.80	151.50	117.20	48.20	311.90	28.05	28.05	2.87	11.90	7,311.00	3.2766	0.9646	4.2634	0.0841
1976	8 700	4 200	17 000	27 900	77.40	78.50	183.60	332.50	10.80	18.21	10.80	11.92	181.20	113.60	53.90	348.70	27.04	27.04	3.17	12.56	8,123.00	3.1515	0.9418	4.0933	4.6458
1977	8 200	4 400	16 500	29 100	88.60	80.50	178.20	347.30	10.80	18.30	10.80	11.93	213.00	114.30	55.10	382.40	25.97	25.97	3.34	13.14	8,952.00	2.9803	0.8992	3.8795	9.1789
1978	10 200	4 900	17 600	32 700	110.20	98.00	190.10	398.30	10.80	20.00	10.80	12.18	277.00	133.10	68.20	478.30	27.16	27.16	3.42	14.38	10,777.00	2.7865	0.9093	3.6958	15.3094
1979	11 600	5 100	17 400	34 100	125.30	102.00	187.90	415.20	10.80	20.00	10.80	12.18	308.80	135.00	61.20	505.00	28.62	28.62	3.52	14.83	11,696.00	2.6774	0.8719	3.5493	17.9122
1980	13 100	5 300	16 700	35 100	148.00	108.00	188.70	442.70	11.30	20.00	11.30	12.61	343.70	139.10	60.00	542.80	26.24	26.24	3.59	15.46	12,641.00	2.6636	0.9385	3.6021	18.4414
1981	14 800	8 500	18 100	38 400	167.20	109.78	181.90	458.80	11.30	19.95	11.30	12.80	381.40	141.70	58.00	581.10	25.77	25.77	3.60	15.96	13,640.00	2.5594	0.8043	3.3637	21.0463
1982	15 700	5 400	14 800	35 900	177.40	107.90	167.20	452.40	11.30	19.98	11.30	12.80	393.90	135.50	53.40	582.80	25.09	25.09	3.61	16.23	14,590.00	2.3619	0.7389	3.1008	22.3747
1983	17 700	5 600	13 300	36 560	217.70	109.80	163.60	491.10	12.30	19.98	12.30	13.45	426.70	132.80	48.00	607.30	24.11	24.11	3.61	16.64	15,647.00	2.4369	0.7017	3.1386	18.1316
1984	18 800	5 500	12 200	38 500	231.20	109.90	150.10	491.10	12.30	19.98	12.30	13.45	443.70	129.80	44.20	617.70	23.60	23.60	3.62	16.97	16,627.00	2.2933	0.6604	2.9537	20.4954
1985	20 300	5 600	11 100	37 000	270.00	111.50	147.60	529.10	13.30	19.91	13.30	14.30	473.60	130.60	40.10	644.30	23.33	23.33	3.61	17.41	17,563.00	2.3777	0.6349	3.0126	17.6799
1986	21 300	5 300	10 000	36 800	283.30	107.20	133.00	523.50	13.30	19.49	13.30	14.73	481.60	124.40	31.70	637.70	22.61	22.61	3.12	17.33	18,045.00	2.3070	0.5941	2.9011	17.9081
1987	23 100	5 600	8 600	37 300	318.80	106.70	116.70	546.20	13.80	19.41	13.80	14.64	516.50	125.70	27.00	668.70	22.36	22.36	3.14	17.93	18,953.00	2.3063	0.5735	2.8818	18.3191
1988	24 500	5 600	7 200	37 300	338.10	108.60	99.40	546.10	13.80	19.39	13.80	14.64	542.40	124.00	22.40	688.80	22.14	22.14	3.11	18.47	19,796.00	2.2100	0.5466	2.7566	20.7177
1989	25 600	5 600	6 000	37 200	366.10	106.70	85.80	560.60	14.30	19.41	14.30	15.07	564.70	123.50	18.80	707.00	22.06	22.06	3.13	19.05	20,461.00	2.2086	0.5313	2.7399	20.1072
1990	26 800	5 600	4 900	37 300	383.20	108.30	70.10	561.60	14.30	19.34	14.30	15.06	586.70	122.60	0.30	708.60	21.89	21.89	6.07	18.02	21,083.00	2.1501	0.5137	2.6638	20.8568
1991	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,132.00	2.2653	0.5139	2.7792	19.0712
1992	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,131.00	2.2654	0.5139	2.7793	19.0712
1993	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,130.00	2.2655	0.5140	2.7795	19.0712
1994	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,129.00	2.2656	0.5140	2.7796	19.0712
1995	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,129.00	2.2656	0.5140	2.7796	19.0712
1996	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,129.00	2.2656	0.5140	2.7796	19.0712
1997	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,127.00	2.2658	0.5140	2.7798	19.0712
1998	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,127.00	2.2658	0.5140	2.7798	19.0712
1999	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,127.00	2.2658	0.5140	2.7798	19.0712
2014	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,127.00	2.2658	0.5140	2.7798	19.0712
2015	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	21,042.00	2.2750	0.5161	2.7911	19.0712
2016	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,954.00	2.2845	0.5183	2.8028	19.0712
2017	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,848.00	2.2961	0.5209	2.8170	19.0712
2018	26 800	5 600	4 900	37 300	404.70	108.80	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,361.00	2.3058	0.5231	2.8289	19.0712
2019	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,130.00	2.3092	0.5239	2.8331	19.0712
2020	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.38	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,706.00	2.3119	0.5245	2.8364	19.0712
2021	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	16.76	587.70	122.80	15.30	725.70	21.93	21.93	3.11	19.46	20,692.00	2.3135	0.5248	2.8383	19.0712
2022	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	16.10	16.75	587.70	122.80	16.20	745.70	21.93	21.93	3.11	19.46	20,687.00	2.3140	0.5250	2.8390	19.0712
2023	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,687.00	2.3140	0.5250	2.8390	19.0712
2024	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	16.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,683.00	2.3145	0.5251	2.8396	19.0712
2025	26 800	5 600	4 000	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,678.00	2.3150	0.5252	2.8402	19.0712
2026	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,677.00	2.3151	0.5252	2.8403	19.0712
[illegible]	26 800	5 600	4 900	37 300	404.70	108.60	74.00	587.30	15.10	19.39	15.10	15.75	587.70	122.80	15.20	725.70	21.93	21.93	3.11	19.46	20,676.00	2.3152	0.5252	2.8404	19.0712

[illegible]

Ridge Mar'l ops WSD
15(15)
Entitlement

Year	TABLE A ENTITLEMENT Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	AGENCY PRICING Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	STATE PRICING Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	MULTIPLIER Total ($1,000)	CONTRACT PERCENT Base (%)	Option (%)	Total (%)	JOA Support (%)
64																									
65																									
66																									
67																									
68																					7,124.00				
69																					7,951.00				
70																					3,754.00				
71	400	500	2 400	3 300	4.60	27.40	27.30	59.30	11.39	54.80	11.39	17.97	-13.20	15.20	7.20	34.60	30.44	30.44	3.02	10.48	4,566.00	0.6983	0.5998	1.2981	[illegible]
72	10 800	4 000	12 100	26 900	123.10	83.40	137.90	344.40	11.40	20.85	11.40	12.80	389.80	144.40	31.50	565.70	36.09	36.09	2.60	21.03	5,761.00	4.5305	1.4477	5.9782	39.1197
73	13 100	5 400	17 700	36 200	149.30	104.70	201.60	455.80	11.40	19.39	11.40	12.59	381.70	157.40	45.00	584.10	29.14	29.14	2.54	16.14	6,256.00	5.6122	1.6736	7.2858	27.9654
74	8 700	7 000	31 100	46 800	103.50	132.50	370.10	606.10	11.90	18.93	11.90	12.95	267.80	215.50	88.90	572.20	30.78	30.78	2.86	12.23	6,784.00	6.9811	1.9531	8.9342	(15.9245)
75	9 900	7 200	31 000	48 100	117.80	135.30	368.90	622.00	11.90	18.79	11.90	12.93	272.40	198.10	89.00	559.50	27.52	27.52	2.87	11.63	7,311.00	6.6571	1.8506	8.5077	[illegible]
76	12 200	7 200	31 700	51 100	145.20	145.80	371.30	662.30	11.90	18.94	11.90	12.98	319.00	201.40	98.90	619.30	26.15	26.15	3.12	12.12	8,123.00	6.3585	1.7949	8.1534	(8.9433)
77	14 900	8 000	30 300	53 200	177.30	152.10	360.60	690.00	11.90	19.01	11.90	12.97	376.80	207.30	101.70	640.30	25.29	25.29	3.34	12.19	8,952.00	6.0087	1.6991	7.7078	(11.4258)
78	16 200	7 800	27 800	51 800	192.80	184.20	330.80	687.80	11.90	21.05	11.90	13.28	431.20	207.60	95.10	733.90	26.62	26.62	3.42	14.17	10,777.00	4.8585	1.5736	6.3871	6.2815
79	19 800	8 700	29 400	57 900	235.60	181.80	349.90	787.30	11.90	20.90	11.90	13.25	519.40	228.20	103.50	851.10	26.23	26.23	3.52	14.70	11,698.00	5.0051	1.5541	6.5592	9.8481
80	22 200	9 000	28 300	59 500	275.30	188.10	350.90	814.30	12.40	20.90	12.40	13.69	574.80	233.00	101.60	909.40	25.89	25.89	3.59	15.20	12,641.00	4.9537	1.4880	6.4417	10.4574
81	25 100	9 300	27 200	61 600	311.20	193.70	337.30	842.20	12.40	20.83	12.40	13.67	640.00	237.30	97.90	975.80	25.52	25.52	3.60	15.64	13,610.00	4.7544	1.4201	6.1745	13.6913
82	26 600	9 100	25 000	60 700	329.80	190.10	318.60	879.90	12.40	20.89	12.40	13.67	670.90	229.50	90.30	990.70	25.27	25.27	3.61	16.32	14,590.00	4.3852	1.3029	5.6881	16.2749
83	30 000	9 300	22 500	61 800	402.00	194.00	301.50	897.50	13.40	20.86	13.40	14.52	745.20	231.00	61.70	1,037.40	24.84	24.84	3.61	17.15	15,647.00	4.4961	1.2399	5.7360	15.1270
84	31 800	9 300	20 800	61 900	426.10	194.10	278.70	898.90	13.40	20.87	13.40	14.57	782.60	228.90	75.30	1,086.80	24.61	24.61	3.62	17.56	16,627.00	4.2389	1.1674	5.4063	17.2891
85	34 500	9 400	18 900	62 800	495.60	195.60	272.20	964.80	14.40	20.63	14.40	15.36	838.00	220.30	68.20	1,134.50	24.29	24.29	3.61	18.07	17,563.00	4.3785	1.1148	5.4933	14.9581
86	36 300	9 400	16 800	62 500	522.70	191.50	241.90	956.10	14.40	20.37	14.40	15.30	855.30	221.50	53.30	1,130.00	23.56	23.56	3.17	18.68	18,045.00	4.2372	1.0617	5.2984	15.3894
87	39 200	9 500	14 700	63 400	584.10	193.00	219.00	996.10	14.90	20.32	14.90	15.71	913.00	221.30	48.20	1,180.50	23.29	23.29	3.14	18.62	18,953.00	4.2373	1.0183	5.2556	15.6205
88	41 600	9 600	12 100	63 300	619.80	154.60	189.30	994.70	14.90	20.27	14.90	15.71	959.30	221.40	37.60	1,218.30	23.06	23.06	3.11	19.25	18,796.00	4.0817	0.9930	5.0747	18.1534
89	41 300	9 500	10 300	63 900	664.80	193.00	158.60	1,018.40	15.40	20.37	15.40	16.14	993.70	218.00	32.20	1,243.90	22.95	22.95	3.13	19.71	20,461.00	4.0340	0.9433	4.9773	18.1285
90	45 500	9 500	8 300	63 300	700.70	192.40	137.80	1,020.90	15.40	20.25	15.40	16.13	1,036.50	218.40	0.80	1,253.50	22.78	22.78	0.07	19.80	21,083.00	3.9297	0.9126	4.8423	18.3560
91	45 600	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,132.00	4.1246	0.9124	5.0370	16.9022
92	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,131.00	4.1247	0.9124	5.0371	16.9022
93	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,130.00	4.1249	0.9124	5.0373	16.9022
94	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,129.00	4.1251	0.9125	5.0376	16.9022
95	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,129.00	4.1251	0.9125	5.0376	16.9022
96	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,128.00	4.1251	0.9125	5.0376	16.9022
97	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,127.00	4.1255	0.9126	5.0381	16.9022
98	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,127.00	4.1255	0.9126	5.0381	16.9022
99	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,127.00	4.1255	0.9126	5.0381	16.9022
14	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,127.00	4.1255	0.9126	5.0381	16.9022
15	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	21,042.00	4.1422	0.9163	5.0585	16.9022
16	45 500	9 600	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,934.00	4.1598	0.9201	5.0797	16.9022
17	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,848.00	4.1807	0.9248	5.1055	16.9022
18	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,761.00	4.1983	0.9287	5.1270	16.9022
19	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,730.00	4.2045	0.9301	5.1346	16.9022
20	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,706.00	4.2094	0.9311	5.1405	16.9022
21	45 500	9 600	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,692.00	4.2123	0.9318	5.1441	16.9022
22	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,687.00	4.2133	0.9320	5.1453	16.9022
23	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,687.00	4.2133	0.9320	5.1453	16.9022
24	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,681.00	4.2141	0.9322	5.1463	16.9022
25	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,678.00	4.2151	0.9324	5.1475	16.9022
26	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,677.00	4.2153	0.9324	5.1477	16.9022
[illegible]	45 500	9 500	8 300	63 300	737.10	192.80	134.50	1,064.40	16.20	20.29	16.20	16.82	1,038.30	216.80	25.80	1,280.90	22.82	22.82	3.11	20.24	20,676.00	4.2155	0.9325	5.1480	16.9022

001184

Ridge-Maricopa WSD
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	TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZONE
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
70																									
71																									
72																									
73																									
74																					2,124.00				
75																					2,951.00				
76																					3,754.00				
77			0.100	0.100	-	21.00	1.30	22.30	13.00	-	13.00	223.00	-	-	0.30	0.30			3.02	3.00	6,568.00	0.0285	0.4597	0.4882	
78	0.800	0.300	1.000	2.100	10.60	28.60	13.30	52.50	13.26	95.33	13.28	25.00	20.66	7.80	2.60	31.20	26.00	26.00	2.60	14.86	5,761.00	0.4149	0.4964	0.9113	
79	1.000	0.700	1.400	2.800	13.30	30.10	18.60	62.00	13.29	75.25	13.29	22.14	21.50	8.60	3.60	33.70	21.50	21.50	2.56	12.04	6,256.00	0.5099	0.4811	0.9710	
80	0.600	0.800	2.400	3.800	8.00	34.80	31.90	74.70	13.30	58.00	13.30	20.75	17.40	17.40	6.90	41.10	29.00	29.00	2.88	13.58	6,784.00	0.5881	0.5130	1.1011	
81	0.700	0.500	2.400	3.600	9.70	32.20	33.10	75.00	13.81	64.40	13.81	20.83	18.90	13.40	6.90	39.10	26.82	26.83	2.87	10.86	7,311.00	0.5854	0.4404	1.0258	
82	0.900	0.600	2.400	3.900	12.40	34.60	33.10	80.10	13.39	57.67	13.79	20.54	20.86	13.80	7.60	42.26	23.07	23.07	3.17	10.82	8,193.00	0.5801	0.4760	0.9961	
83	2.500	1.300	5.100	8.900	34.50	49.60	70.40	154.50	13.80	38.15	13.88	17.36	32.80	17.00	17.00	66.60	13.05	13.05	3.34	7.46	8,952.00	1.1318	0.5541	1.7259	
84	7.200	3.500	17.400	28.100	99.40	183.00	171.10	373.50	13.80	29.43	13.80	16.17	89.30	39.70	42.40	145.40	9.63	9.63	3.42	6.29	10,777.00	2.5108	0.9557	3.4657	
85	8.200	3.900	12.300	24.100	113.20	105.80	169.70	388.70	13.80	29.39	13.80	16.13	122.40	141.60	43.30	307.30	39.32	39.32	3.52	21.05	11,696.00	2.6184	0.9014	3.3228	23.3787
86	9.200	3.700	11.900	24.800	131.80	108.80	178.20	418.40	14.30	29.35	14.30	16.55	107.70	123.80	42.70	474.20	33.45	33.45	3.58	19.12	12,841.00	2.7875	0.8591	3.2466	23.4547
87	10.500	3.900	11.300	25.700	160.20	113.30	161.60	435.10	14.30	29.05	14.30	16.84	331.70	129.20	40.70	496.60	31.59	31.59	3.60	19.28	13,640.00	2.2858	0.8386	3.1185	14.2252
88	15.600	5.300	14.700	35.600	223.10	145.90	210.20	579.20	14.30	27.53	14.30	16.27	472.50	160.50	53.10	686.10	30.29	30.29	3.61	19.27	19,590.00	2.9698	1.0060	3.9858	15.5808
89	17.600	5.500	13.200	36.300	269.30	150.80	202.60	622.10	15.30	27.42	15.30	17.14	519.20	162.30	47.70	729.20	29.50	29.50	3.61	20.09	15,647.00	3.0121	0.9616	3.9759	14.8673
90	24.600	7.900	15.600	48.600	367.20	185.60	236.70	791.70	15.30	26.54	15.30	18.99	687.60	200.60	56.50	944.70	28.65	28.65	3.62	20.27	16,827.00	3.8461	1.1175	4.9618	16.1956
91	28.200	7.200	14.300	47.700	477.10	190.40	233.10	850.60	16.30	26.44	16.30	17.83	742.00	203.90	51.60	997.50	28.32	28.32	3.61	20.91	17,563.00	3.7590	1.0841	4.8431	14.7268
92	31.100	8.100	14.400	53.600	506.90	207.60	234.10	948.20	16.30	25.63	16.30	17.71	855.90	222.90	45.60	1,124.40	27.52	27.52	3.62	20.94	18,045.00	4.1087	1.1585	5.2602	15.5816
93	34.100	8.400	12.700	55.200	572.90	214.40	233.40	1,000.70	16.80	25.57	16.80	18.13	927.50	228.50	39.90	1,195.90	27.20	27.20	3.64	21.68	18,952.00	4.1487	1.1312	5.2799	16.3225
94	36.200	8.300	10.600	55.100	606.20	211.60	176.10	993.80	16.80	25.52	16.80	18.11	974.90	223.50	33.00	1,231.40	26.93	26.93	3.61	22.35	19,796.00	3.9718	1.0699	5.0417	18.9459
95	40.000	8.700	9.500	58.200	692.00	221.20	164.40	1,077.60	17.30	25.43	17.30	18.52	1,072.90	233.30	29.70	1,335.80	26.82	26.82	3.63	22.95	20,469.00	4.1870	1.0811	5.2681	19.3292
96	42.100	8.800	7.700	58.600	728.30	222.90	133.20	1,084.40	17.30	25.33	17.30	18.51	1,128.70	234.30	8.50	1,355.50	26.82	26.82	3.62	23.13	21,083.00	4.0854	1.0572	5.1426	20.0000
97	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.58	21,132.00	4.2694	1.0567	5.3261	18.5531
98	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,131.00	4.2688	1.0567	5.3253	18.5531
99	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,130.00	4.2678	1.0568	5.3246	18.5531
100	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,129.00	4.2669	1.0568	5.3237	18.5531
101	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,129.00	4.2669	1.0568	5.3237	18.5531
102	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,129.00	4.2669	1.0568	5.3237	18.5531
103	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,127.00	4.2673	1.0569	5.3242	18.5531
104	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,127.00	4.2658	1.0569	5.3219	18.5531
105	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,127.00	4.2658	1.0569	5.3219	18.5531
106	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,127.00	4.2658	1.0569	5.3219	18.5531
107	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	21,042.00	4.2633	1.0612	5.3245	18.5531
108	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,934.00	4.3012	1.0657	5.3669	18.5531
109	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,948.00	4.3260	1.0711	5.3971	18.5531
110	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,761.00	4.3449	1.0738	5.4186	18.5531
111	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,730.00	4.3478	1.0772	5.4250	18.5531
112	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,706.00	4.3529	1.0784	5.4313	18.5531
113	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,692.00	4.3556	1.0792	5.4348	18.5531
114	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,687.00	4.3568	1.0794	5.4363	18.5531
115	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,687.00	4.3568	1.0794	5.4363	18.5531
116	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,683.00	4.3577	1.0796	5.4373	18.5531
117	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,678.00	4.3567	1.0799	5.4366	18.5531
118	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,677.00	4.3591	1.0799	5.4390	18.5531
119	42.100	8.800	7.700	58.600	762.00	223.30	139.40	1,124.70	18.10	25.38	18.10	19.19	1,122.40	234.60	23.90	1,380.90	26.66	26.66	3.61	23.56	20,678.00	4.3592	1.0800	5.4392	18.5531

001185

041733

Ridge Martinez WSD

[illegible] (18)

[illegible] to BDA4 (Amendment #2) from Reach 16

	ENTITLEMENT TRANSFERRED				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZCA
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Total ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
1984																					-				-
1985																					-				-
1986																					-				-
1987																					2,124.00				-
1988																					2,951.00				-
1989																					3,754.00				-
1990																					4,566.00				-
1991																					5,761.00				-
1992																					6,256.00				-
1993																					6,784.00				-
1994																					7,311.00				-
1995																					8,123.00				-
1996																					8,952.00				-
1997																					10,777.00				-
1998																					11,698.00				-
1999																					12,641.00				-
2000																					13,640.00				-
2001																					14,590.00				-
2002																					15,641.00				-
2003																					16,827.00				-
2004																					17,563.00				-
2005																					18,045.00				-
2006																					18,953.00				-
2007	(7,594)	(1,743)	(2,224)	(11,559)	(127.60)	(44.40)	(37.40)	(209.40)	16.80	25.52	16.80	18.11	(206.50)	(48.90)	(6.90)	(258.30)	26.93	26.93	3.11	22.35	19,396.00	(0.8333)	(0.2243)	(1.0576)	18.9315
2008	(8,099)	(1,761)	(1,923)	(11,783)	(140.10)	(44.80)	(33.30)	(218.20)	17.30	25.43	17.30	18.52	(217.20)	(47.20)	(6.00)	(270.40)	28.82	26.82	3.12	22.93	20,481.00	(0.8250)	(0.2190)	(1.0440)	19.3047
2009	(8,499)	(1,777)	(1,554)	(11,830)	(147.00)	(45.00)	(28.90)	(218.90)	17.30	25.33	17.30	18.51	(226.20)	(47.30)	(0.10)	(273.60)	26.62	26.62	0.07	23.13	21,083.00	(0.8250)	(0.2134)	(1.0384)	19.2927
2010	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,132.00	(0.8612)	(0.2134)	(1.0746)	18.5796
2011	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,131.00	(0.8612)	(0.2134)	(1.0746)	18.5796
2012	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,130.00	(0.8612)	(0.2134)	(1.0746)	18.5796
2013	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,129.00	(0.8611)	(0.2135)	(1.0746)	18.5796
2014	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,129.00	(0.8611)	(0.2135)	(1.0746)	18.5796
2015	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,129.00	(0.8611)	(0.2135)	(1.0746)	18.5796
2016	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,127.00	(0.8612)	(0.2135)	(1.0747)	18.5796
2017	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,127.00	(0.8611)	(0.2135)	(1.0746)	18.5796
2018	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,127.00	(0.8611)	(0.2135)	(1.0746)	18.5796
2019	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	21,042.00	(0.8647)	(0.2143)	(1.0790)	18.5796
2020	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,954.00	(0.8684)	(0.2152)	(1.0836)	18.5796
2021	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,848.00	(0.8755)	(0.2163)	(1.0918)	18.5796
2022	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,761.00	(0.8764)	(0.2172)	(1.0936)	18.5796
2023	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,730.00	(0.8777)	(0.2176)	(1.0953)	18.5796
2024	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,706.00	(0.8787)	(0.2179)	(1.0965)	18.5796
2025	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,687.00	(0.8793)	(0.2180)	(1.0973)	18.5796
2026	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,687.00	(0.8796)	(0.2180)	(1.0976)	18.5796
2027	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,687.00	(0.8796)	(0.2180)	(1.0976)	18.5796
2028	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,683.00	(0.8797)	(0.2181)	(1.0978)	18.5796
2029	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,678.00	(0.8799)	(0.2181)	(1.0980)	18.5796
2030	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,677.00	(0.8800)	(0.2181)	(1.0981)	18.5796
2031	(8,499)	(1,777)	(1,554)	(11,830)	(153.80)	(45.10)	(28.10)	(227.00)	18.10	25.38	18.10	19.19	(226.60)	(47.40)	(4.80)	(278.80)	26.66	26.66	3.11	23.56	20,676.00	(0.8800)	(0.2181)	(1.0981)	18.5796

001186

File: Contract Work\WSD\Rider 2

041734

- Ridge Marketplace WSD
15 (16)
r to Talon Center WD (Amendment #3) from Reach 15

	ENTITLEMENT TRANSFERRED				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOO
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Total ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
164																					-				-
165																					-				-
166																					-				-
167																					2,124 00				-
168																					2 951 80				-
169																					3 758 80				-
170																					4,568 80				-
171																					5,761 80				-
172																					6,256 00				-
173																					6 784 00				-
174																					7,311 80				-
175																					8,173 80				-
176																					8,952 80				-
177																					10,777 80				-
178																					11 638 80				-
179																					12 641 80				-
180																					13 640 80				-
181																					14 590 00				-
182																					15 647 00				-
183																					16 627 00				-
184																					17 563 00				-
185																					18 645 00				-
186																					19 953 00				-
187																					19 796 00				-
188																					20,461 00				-
189																					21 043 00				-
190																					21,132 00				-
191																					21,131 00				-
192																					21,130 00				-
193																					21,129 00				-
194																					21 129 00				-
195																					21,129 00	(0 3015)	(0 0667)	(0 3682)	16 9691
196	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	21,127 00	(0 3015)	(0 0667)	(0 3682)	16 9691
197	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	21,127 00	(0 3015)	(0 0667)	(0 3682)	16 9691
198	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	21,127 00	(0 3015)	(0 0667)	(0 3682)	16 9691
199	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	21,127 00	(0 3015)	(0 0667)	(0 3682)	16 9691
114	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	21,042 00	(0 3027)	(0 0670)	(0 3697)	16 9691
15	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,954 00	(0 3040)	(0 0673)	(0 3713)	16 9691
116	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,848 00	(0 3055)	(0 0676)	(0 3731)	16 9691
17	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,784 00	(0 3068)	(0 0679)	(0 3747)	16 9691
118	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,738 00	(0 3077)	(0 0680)	(0 3753)	16 9691
119	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,706 00	(0 3076)	(0 0681)	(0 3757)	16 9691
120	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,692 00	(0 3078)	(0 0681)	(0 3759)	16 9691
21	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,687 00	(0 3079)	(0 0682)	(0 3761)	16 9691
122	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20 687 00	(0 3079)	(0 0682)	(0 3761)	16 9691
123	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,683 00	(0 3080)	(0 0682)	(0 3762)	16 9691
24	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20 678 00	(0 3081)	(0 0682)	(0 3763)	16 9691
125	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20,677 00	(0 3081)	(0 0682)	(0 3763)	16 9691
126	(3 326)	(0 695)	(0 607)	(4 628)	(53 90)	(14 10)	(9 80)	(77 80)	16 20	20 29	16 20	16 82	(75 90)	(15 90)	(1 90)	(93 70)	22 82	22 82	3 11	20 24	20 676 00	(0 3081)	(0 0682)	(0 3763)	16 9691

001187

File Number: WHMWD.[illegible]

041735

Kern Water Bank Authority

5(15)

Request for Participation in Kern Water Bank (Amendment #4) from Reach 15

	ENTITLEMENT TRANSFERRED				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ERB
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Total ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
164																					-				
165																					-				
166																					-				
167																					2,124.00				
168																					2,951.00				
169																					3,756.00				
170																					4,568.00				
171																					5,769.00				
172																					6,758.00				
173																					6,784.00				
174																					7,391.00				
175																					8,123.00				
176																					8,952.00				
177																					10,777.00				
178																					11,648.00				
179																					12,641.00				
180																					13,640.00				
181																					14,590.00				
182																					15,647.00				
183																					16,827.00				
184																					17,563.00				
185																					18,045.00				
186																					18,953.00				
187																					19,795.00				
188																					20,467.00				
189																					21,083.00				
190																					21,632.00				
191																					21,831.00				
192																					21,930.00				
193																					21,929.00				
194																					21,929.00				
195																					21,929.00				
196	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,129.00	(0.8117)	(0.1784)	(0.9901)	16.9512
197	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,127.00	(0.8118)	(0.1784)	(0.9902)	16.9512
198	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,127.00	(0.8119)	(0.1784)	(0.9902)	16.9512
1999	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,127.00	(0.8118)	(0.1784)	(0.9902)	16.9512
200	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,127.00	(0.8118)	(0.1784)	(0.9902)	16.9512
201	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,127.00	(0.8118)	(0.1784)	(0.9902)	16.9512
202	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	21,042.00	(0.8150)	(0.1792)	(0.9942)	16.9512
203	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,954.00	(0.8185)	(0.1799)	(0.9984)	16.9512
204	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,846.00	(0.8226)	(0.1808)	(1.0034)	16.9512
205	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,736.00	(0.8281)	(0.1816)	(1.0077)	16.9512
206	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,730.00	(0.8273)	(0.1819)	(1.0092)	16.9512
207	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,706.00	(0.8263)	(0.1821)	(1.0106)	16.9512
208	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,692.00	(0.8288)	(0.1822)	(1.0110)	16.9512
209	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,667.00	(0.8290)	(0.1822)	(1.0112)	16.9512
210	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,687.00	(0.8290)	(0.1822)	(1.0112)	16.9512
211	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,683.00	(0.8292)	(0.1823)	(1.0115)	16.9512
212	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,678.00	(0.8294)	(0.1823)	(1.0117)	16.9512
213	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,677.00	(0.8294)	(0.1823)	(1.0117)	16.9512
214	(8,957)	(1,858)	(1,632)	(12,447)	(145.10)	(37.70)	(26.40)	(209.20)	16.20	20.29	16.20	16.82	(204.40)	(42.40)	(5.50)	(251.90)	22.82	22.82	3.11	20.24	20,676.00	(0.8295)	(0.1823)	(1.0118)	16.9512

001188

041736

Rialto Metropolitan WSD
1 (15)
to Tejon Castac WD Entitlement from Reach 15 to Reach 16 (Amendment #5)

	ENTITLEMENT TRANSFERRED				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOB
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Total ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
24																					-				-
25																					-				-
56																					-				-
57																					2,124.00				
58																					2,951.00				
69																					3,754.00				-
70																					4,568.00				
71																					5,761.00				-
72																					6,256.00				-
73																					6,784.00				-
74																					7,311.00				
75																					8,123.00				-
76																					8,952.00				-
77																					10,777.00				
78																					11,698.00				-
79																					12,641.00				
80																					13,640.00				-
81																					14,590.00				-
82																					15,647.00				-
83																					16,827.00				-
84																					17,563.00				-
85																					18,045.00				-
86																					18,953.00				-
87																					19,796.00				-
88																					20,463.00				-
89																					21,083.00				-
90																					21,132.00				-
91																					21,131.00				-
92																					21,130.00				-
93																					21,129.00				-
94																					21,129.00				-
95																					21,129.00				-
96																					21,127.00				-
97																					21,127.00				-
98	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	21,127.00	0.2338	0.0516	0.2854	17.0564
14	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	21,127.00	0.2338	0.0516	0.2854	17.0564
15	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	21,042.00	0.2348	0.0518	0.2866	17.0564
16	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,954.00	0.2358	0.0520	0.2878	17.0564
17	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,848.00	0.2370	0.0523	0.2893	17.0564
18	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,761.00	0.2379	0.0525	0.2904	17.0564
19	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,730.00	0.2383	0.0526	0.2909	17.0564
20	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,706.00	0.2386	0.0526	0.2912	17.0564
21	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,692.00	0.2387	0.0527	0.2914	17.0564
22	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,687.00	0.2388	0.0527	0.2915	17.0564
23	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,687.00	0.2388	0.0527	0.2915	17.0564
24	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,683.00	0.2388	0.0527	0.2915	17.0564
25	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,678.00	0.2389	0.0527	0.2916	17.0564
26	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,677.00	0.2389	0.0527	0.2916	17.0564
27	2,582	0.539	0.471	3,592	41.80	10.90	7.60	60.30	16.20	20.29	16.20	16.82	58.90	12.30	1.50	72.70	22.82	22.82	3.11	20.24	20,676.00	0.2389	0.0527	0.2916	17.0564

001189

File Location: [illegible]

11

041737

Ridge Markups WSD

5 (16)

to Tejon Castac WD Lab. ...s from Reach 15 to Reach 16 (Amendment 85)

	TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOB
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
5																					-				-
6																					-				-
7																					-				-
8																					2,124.00				-
9																					2,951.00				-
10																					3,754.00				-
11																					4,568.00				-
12																					5,761.00				-
13																					6,256.00				-
14																					6,784.00				-
15																					7,311.00				-
16																					8,123.00				-
17																					8,957.00				-
18																					10,727.00				-
19																					11,698.00				-
20																					12,641.00				-
21																					13,640.00				-
22																					14,590.00				-
23																					15,607.00				-
24																					16,627.00				-
25																					17,563.00				-
26																					18,045.00				-
27																					18,953.00				-
28																					19,796.00				-
29																					20,481.00				-
30																					21,083.00				-
31																					21,132.00				-
32																					21,131.00				-
33																					21,130.00				-
34																					21,129.00				-
35																					21,129.00				-
36																					21,129.00				-
37																					21,127.00				-
38																					21,127.00				-
39	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	21,127.00	(0.2613)	(0.0648)	(0.3261)	18.6541
40	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	21,127.00	(0.2613)	(0.0648)	(0.3261)	18.6541
41	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	21,042.00	(0.2623)	(0.0651)	(0.3274)	18.6541
42	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,954.00	(0.2634)	(0.0654)	(0.3288)	18.6541
43	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,846.00	(0.2646)	(0.0657)	(0.3305)	18.6541
44	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,784.00	(0.2659)	(0.0660)	(0.3319)	18.6541
45	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,738.00	(0.2663)	(0.0661)	(0.3324)	18.6541
46	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,706.00	(0.2666)	(0.0662)	(0.3328)	18.6541
47	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,692.00	(0.2668)	(0.0662)	(0.3330)	18.6541
48	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,687.00	(0.2668)	(0.0662)	(0.3330)	18.6541
49	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,687.00	(0.2668)	(0.0662)	(0.3330)	18.6541
50	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,683.00	(0.2669)	(0.0662)	(0.3331)	18.6541
51	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,678.00	(0.2670)	(0.0663)	(0.3331)	18.6541
52	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,677.00	(0.2670)	(0.0663)	(0.3333)	18.6541
53	(7,582)	(0.539)	(0.471)	(3.592)	(46.70)	(13.70)	(8.50)	(68.90)	16.10	25.38	18.10	19.18	(66.80)	(14.40)	(1.50)	(84.70)	26.66	26.66	3.11	23.58	20,676.00	(0.2670)	(0.0663)	(0.3333)	18.6541

001190

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041738

Ridge Runners WSD
IA (14A)
to Cashin Farms WA (Amendment #6)

TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOD
Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
																				-				-
																				-				-
																				-				-
																				-				-
																				2,124.00				-
																				2,851.80				-
																				3,754.80				-
																				4,568.00				-
																				5,761.00				-
																				6,256.00				-
																				6,784.00				-
																				7,311.00				-
																				8,123.00				-
																				8,953.00				-
																				10,777.00				-
																				11,598.00				-
																				12,641.00				-
																				13,640.00				-
																				14,590.00				-
																				15,647.00				-
																				16,527.00				-
																				17,563.00				-
																				18,045.00				-
																				18,953.00				-
																				19,796.00				-
																				20,489.00				-
																				21,083.00				-
																				21,132.00				-
																				21,131.00				-
																				21,130.00				-
																				21,129.00				-
																				21,129.00				-
																				21,128.00				-
																				21,127.00				-
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	21,127.00	(0.7422)	(0.6054)	(1.3476)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	21,127.00	(0.7422)	(0.6054)	(1.3476)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	21,042.00	(0.7452)	(0.6078)	(1.3530)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,954.00	(0.7483)	(0.6104)	(1.3587)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,848.00	(0.7521)	(0.6135)	(1.3656)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,761.00	(0.7553)	(0.6161)	(1.3714)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,738.00	(0.7564)	(0.6170)	(1.3734)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,709.00	(0.7575)	(0.6177)	(1.3750)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,697.00	(0.7578)	(0.6181)	(1.3759)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,687.00	(0.7580)	(0.6183)	(1.3763)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,687.00	(0.7580)	(0.6183)	(1.3763)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,683.00	(0.7581)	(0.6184)	(1.3765)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,678.00	(0.7583)	(0.6185)	(1.3768)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,677.00	(0.7583)	(0.6186)	(1.3769)	15.5443
(9,417)	(6,900)	(1,702)	(18,019)	(132.80)	(127.90)	(24.00)	(284.70)	14.10	18.54	14.10	15.80	(191.50)	(140.30)	(5.30)	(337.10)	20.34	20.34	3.11	18.71	20,676.00	(0.7584)	(0.6186)	(1.3770)	15.5443

Computed as 9,417 AF / 33,200 AF * 6,000 AF = 1,702 AF. This is the proportion of Basic Firm ent. in R14A to be sold to total Basic Firm ent. in R14A times 6,000 AF (ent. of Surplus in R14A)

001191

041739

Ridge Manitou WSD
48 (148)
In Central Lake WA (Amendment #6)

TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			70%
Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
																				-				
																				-				
																				-				
																				2,124.00				
																				2,951.00				
																				3,754.00				
																				4,568.00	-	-	-	-
																				5,761.00	-	-	-	-
																				6,256.00	-	-	-	-
																				6,784.00	-	-	-	-
																				7,311.00	-	-	-	-
																				8,123.00	-	-	-	-
																				8,952.00	-	-	-	-
																				10,777.00	-	-	-	-
																				11,696.00	-	-	-	-
																				12,641.00	-	-	-	-
																				13,640.00	-	-	-	-
																				14,590.00	-	-	-	-
																				15,647.00	-	-	-	-
																				16,677.00	-	-	-	-
																				17,563.00	-	-	-	-
																				18,045.00	-	-	-	-
																				18,853.00	-	-	-	-
																				19,786.00	-	-	-	-
																				20,481.00	-	-	-	-
																				21,083.00	-	-	-	-
																				21,132.00	-	-	-	-
																				21,131.00	-	-	-	-
																				21,130.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,127.00	-	-	-	-
																				21,127.00	-	-	-	-
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	21,127.00	-	(1.1601)	(1.1601)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	21,127.00	-	(1.1601)	(1.1601)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	21,042.00	-	(1.1646)	(1.1646)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,954.00	-	(1.1697)	(1.1697)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,848.00	-	(1.1757)	(1.1757)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,761.00	-	(1.1806)	(1.1806)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,730.00	-	(1.1823)	(1.1823)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,706.00	-	(1.1837)	(1.1837)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,697.00	-	(1.1845)	(1.1845)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,687.00	-	(1.1846)	(1.1846)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,687.00	-	(1.1848)	(1.1848)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,683.00	-	(1.1850)	(1.1850)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,678.00	-	(1.1853)	(1.1853)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,677.00	-	(1.1854)	(1.1854)	7.5094
	(12,519)		(12,519)	-	(245.10)	-	(245.10)	14.60	19.58	14.60	19.58	-	(265.00)	-	(265.00)	21.17	21.17	3.11	21.17	20,678.00	-	(1.1854)	(1.1854)	7.5094

001192

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041740

Phase Maricopa WSD
IC (14C)
to Castaic Lake WA (Amendment #6)

TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOB
Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Surplus (%)
																				-				-
																				-				-
																				-				-
																				2,124.00				-
																				2,931.00				-
																				3,754.00				-
																				4,588.00	-	-	-	-
																				5,761.00	-	-	-	-
																				6,256.00	-	-	-	-
																				6,784.00	-	-	-	-
																				7,315.00	-	-	-	-
																				8,123.00	-	-	-	-
																				8,952.00	-	-	-	-
																				10,777.00	-	-	-	-
																				11,698.00	-	-	-	-
																				12,641.00	-	-	-	-
																				13,840.00	-	-	-	-
																				14,590.00	-	-	-	-
																				15,647.00	-	-	-	-
																				16,627.00	-	-	-	-
																				17,563.00	-	-	-	-
																				18,045.00	-	-	-	-
																				18,953.00	-	-	-	-
																				19,796.00	-	-	-	-
																				20,461.00	-	-	-	-
																				21,083.00	-	-	-	-
																				21,132.00	-	-	-	-
																				21,131.00	-	-	-	-
																				21,130.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,127.00	-	-	-	-
																				21,127.00	-	-	-	-
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.38	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	21,127.00	-	[0.2400]	[0.2400]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	21,127.00	-	[0.2400]	[0.2400]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	21,042.00	-	[0.2409]	[0.2409]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,954.00	-	[0.2420]	[0.2420]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,846.00	-	[0.2432]	[0.2432]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,761.00	-	[0.2442]	[0.2442]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,730.00	-	[0.2446]	[0.2446]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,706.00	-	[0.2449]	[0.2449]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,692.00	-	[0.2450]	[0.2450]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,687.00	-	[0.2451]	[0.2451]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,687.00	-	[0.2451]	[0.2451]	11.6725
	[2,617]		[2,617]	-	[66.70]	-	[66.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,683.00	-	[0.2451]	[0.2451]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,678.00	-	[0.2452]	[0.2452]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,677.00	-	[0.2452]	[0.2452]	11.6725
	[2,617]		[2,617]	-	[50.70]	-	[50.70]	15.10	19.39	15.10	19.37	-	[57.40]	-	[57.40]	21.93	21.93	3.11	21.93	20,676.00	-	[0.2452]	[0.2452]	11.6725

001193

File: Contract\WRMWD\Defer6 3

041741

Ridge Meadows WSD
5 (15)
to Costain Lake WA (An 6)

TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			2700
Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
																				-				-
																				-				-
																				-				-
																				-				-
																				2 174 00				-
																				2 954 00				-
																				3,754 00				-
																				4,568 00	-	-	-	-
																				5,761 00	-	-	-	-
																				6 256,00	-	-	-	-
																				6,784 00	-	-	-	-
																				7,311 00	-	-	-	-
																				8,123 00	-	-	-	-
																				8 952 00	-	-	-	-
																				10 777 00	-	-	-	-
																				11 818 00	-	-	-	-
																				12 631 00	-	-	-	-
																				13 640 00	-	-	-	-
																				14,590 00	-	-	-	-
																				15 647 00	-	-	-	-
																				16 627 00	-	-	-	-
																				17,563 00	-	-	-	-
																				18 615 00	-	-	-	-
																				18 953 00	-	-	-	-
																				19,796 00	-	-	-	-
																				20,461 00	-	-	-	-
																				21 063 00	-	-	-	-
																				21 132 00	-	-	-	-
																				21,131 00	-	-	-	-
																				21,130 00	-	-	-	-
																				21,129 00	-	-	-	-
																				21,129 00	-	-	-	-
																				21,129 00	-	-	-	-
																				21,129 00	-	-	-	-
																				21,127 00	-	-	-	-
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	21,127 00	-	(0 3432)	(0 3432)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	21,127 00	-	(0 3432)	(0 3432)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	21,042 00	-	(0 3445)	(0 3445)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,956 00	-	(0 3460)	(0 3460)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,848 00	-	(0 3478)	(0 3478)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,761 00	-	(0 3492)	(0 3492)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,730 00	-	(0 3497)	(0 3497)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,706 00	-	(0 3501)	(0 3501)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,697 00	-	(0 3504)	(0 3504)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,687 00	-	(0 3505)	(0 3505)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,683 00	-	(0 3505)	(0 3505)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,678 00	-	(0 3506)	(0 3506)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,677 00	-	(0 3506)	(0 3506)	11 0429
	(3 571)		(3 571)	-	(72 50)	-	(72 50)	16 20	20 29	16 20	20 30	-	(91 50)	-	(91 50)	22 62	22 62	3 11	22 62	20,676 00	-	(0 3506)	(0 3506)	11 0429

001194

File Contract WRMWSD.xls Sheet 6

11

041742

Bridge Market pa WSA
- 8 (15)
- to Feasible Lake WA (Annex ... and #8)

TABLE 1 ENTITLEMENT				AGENCY PRICING								STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOB
Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Average ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support ($)
																				-				-
																				-				-
																				-				-
																				2,124.00				-
																				2,951.00		-		-
																				3,754.00		-		-
																				4,568.00	-	-	-	-
																				5,761.00	-	-	-	-
																				6,256.00	-	-	-	-
																				6,784.00	-	-	-	-
																				7,311.00	-	-	-	-
																				8,123.00	-	-	-	-
																				8,952.00	-	-	-	-
																				10,777.00	-	-	-	-
																				11,698.00	-	-	-	-
																				12,641.00	-	-	-	-
																				13,646.00	-	-	-	-
																				14,590.00	-	-	-	-
																				15,647.00	-	-	-	-
																				16,627.00	-	-	-	-
																				17,563.00	-	-	-	-
																				18,645.00	-	-	-	-
																				18,953.00	-	-	-	-
																				19,798.00	-	-	-	-
																				20,461.00	-	-	-	-
																				20,063.00	-	-	-	-
																				21,032.00	-	-	-	-
																				21,331.00	-	-	-	-
																				21,130.00	-	-	-	-
																				20,129.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,129.00	-	-	-	-
																				21,127.00	-	-	-	-
																				21,127.00	-	-	-	-
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	21,127.00	-	(0.7180)	(0.7180)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	21,127.00	-	(0.7180)	(0.7180)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	21,842.00	-	(0.7209)	(0.7209)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,954.00	-	(0.7240)	(0.7240)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,848.00	-	(0.7276)	(0.7276)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,761.00	-	(0.7307)	(0.7307)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,736.00	-	(0.7318)	(0.7318)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,708.00	-	(0.7328)	(0.7328)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,697.00	-	(0.7331)	(0.7331)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,687.00	-	(0.7333)	(0.7333)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,687.00	-	(0.7333)	(0.7333)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,683.00	-	(0.7335)	(0.7335)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,678.00	-	(0.7336)	(0.7336)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,677.00	-	(0.7337)	(0.7337)	4.7709
	(5,976)		(5,976)	-	(151.70)	-	(151.70)	18.10	25.38	18.10	25.38	-	(159.30)	-	(159.30)	26.66	26.66	3.11	26.66	20,676.00	-	(0.7337)	(0.7337)	4.7709

001195

1 de Contract SWIMWS\Table 6 5

041743

· Ridge Maricopa WSC
· Reaches

	TOTAL ENTITLEMENT				TOTAL AGENCY PRICING								TOTAL STATE PRICING								MULTIPLIER	CONTRACT PERCENT			ZOH
	Firm (AF)	Option (AF)	Surplus (AF)	Total (AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Total ($/AF)	Firm ($1,000)	Option ($1,000)	Surplus ($1,000)	Total ($1,000)	Firm ($/AF)	Option ($/AF)	Surplus ($/AF)	Total ($/AF)	Total ($1,000)	Basic (%)	Option (%)	Total (%)	Support (%)
1964																					-		-	-	-
1965																					-	-	-	-	-
1966																					-	-	-	-	-
1967																					-	-	-	-	-
1968																					2,124.00	-	-	-	-
1969																					2,951.00	-	-	-	-
1970																					3,754.00	-	-	-	-
1971	4,300	5,700	27,800	37,800	42.90	177.00	276.70	496.60	9.90	31.05	9.95	13.14	67.30	88.70	83.90	239.90	15.65	15.56	3.02	6.35	4,560.00	6.9965	3.2748	10.2713	(107.0079)
1972	32,100	17,000	31,100	80,200	334.70	270.30	378.70	983.70	10.43	23.18	10.43	12.27	974.00	363.80	93.90	1,431.70	30.34	30.32	2.60	17.05	5,761.00	12.3503	4.7907	17.1410	30.8724
1973	38,000	18,700	52,900	109,600	396.60	348.40	551.70	1,296.70	10.43	21.01	10.43	12.01	1,043.60	433.80	134.40	1,611.80	26.74	26.76	2.54	14.91	8,258.00	15.3182	5.4411	20.7593	13.4755
1974	28,200	22,800	100,800	151,800	295.70	418.70	1,055.90	1,770.30	10.49	18.36	10.50	11.66	850.50	687.70	287.70	1,825.90	30.16	30.16	2.86	12.04	8,784.00	19.9233	6.6141	26.5374	1.4020
1975	33,700	24,700	105,900	164,300	344.60	476.70	1,145.90	1,967.20	10.22	19.30	10.82	11.97	941.90	690.40	304.00	1,936.30	27.95	27.95	2.67	11.75	7,311.00	20.6608	6.5202	27.1810	(2.6287)
1976	42,600	24,800	108,900	176,300	460.40	518.60	1,177.20	2,156.10	10.81	19.35	10.81	12.09	1,112.90	700.10	345.30	2,158.30	26.12	28.12	3.17	12.10	8,123.00	20.1599	6.3832	26.5431	8.1019
1977	53,300	28,800	108,300	190,400	580.40	555.90	1,181.20	2,317.40	10.89	19.43	10.89	12.17	1,287.70	691.40	362.40	2,341.50	24.16	24.17	3.34	12.30	8,952.00	18.6783	6.7087	25.3870	1.0293
1978	63,700	30,700	109,700	204,100	708.60	661.20	1,214.50	2,584.30	11.09	21.54	11.09	12.66	1,529.60	736.60	375.20	2,641.40	24.01	24.00	3.42	12.94	10,777.00	17.8438	6.1351	23.9789	7.1691
1979	74,000	32,600	110,300	216,900	821.70	699.60	1,224.90	2,746.20	11.10	21.46	11.11	12.66	1,893.40	977.00	389.10	3,259.50	25.94	29.93	3.52	15.03	11,598.00	17.4962	5.9805	23.4767	15.7478
1980	85,500	34,400	109,100	229,000	918.00	735.50	1,264.80	2,918.30	11.58	21.38	11.58	13.06	2,209.30	891.10	391.70	3,497.10	25.90	25.90	3.59	15.26	12,849.00	17.8143	5.0183	22.8326	14.4498
1981	98,500	38,300	106,600	243,400	1,139.60	771.50	1,233.20	3,144.30	11.57	21.35	11.57	13.03	2,470.50	813.90	383.60	3,776.10	25.18	25.17	3.80	15.64	13,540.00	17.3959	5.6562	23.0521	16.7315
1982	110,700	38,000	104,200	252,900	1,291.80	809.80	1,215.70	3,316.90	11.67	21.31	11.67	13.12	2,752.60	944.30	376.20	4,073.10	24.87	24.85	3.61	16.11	14,590.00	17.1857	5.5490	22.7347	16.9657
1983	127,000	39,300	95,400	261,700	1,606.90	834.80	1,207.10	3,648.80	12.65	21.24	12.65	13.94	3,087.30	955.80	314.40	4,357.50	24.31	24.32	3.64	16.77	15,647.00	17.9835	5.3353	23.3188	16.8365
1984	140,100	40,900	91,300	272,300	1,786.60	872.00	1,164.40	3,823.00	12.75	21.32	12.75	14.04	3,383.60	987.90	330.40	4,701.90	24.15	24.15	3.62	17.21	16,627.00	17.7482	5.2445	22.9927	18.6942
1985	153,800	42,100	84,300	280,200	2,116.70	893.70	1,158.00	4,162.40	13.76	21.23	13.74	14.87	3,661.40	1,003.40	304.30	4,969.10	23.81	23.83	3.61	17.75	17,563.00	18.6112	5.0846	23.6958	18.2343
1986	167,300	43,300	77,800	288,400	2,305.80	900.40	1,071.90	4,278.10	13.78	20.79	13.78	14.83	3,881.60	1,005.10	246.60	5,133.30	23.20	23.21	3.17	17.80	18,045.00	18.7187	4.9898	23.7085	16.6596
1987	182,100	44,300	68,200	294,600	2,601.40	918.30	974.10	4,493.80	14.29	20.73	14.28	15.25	4,179.70	1,017.30	214.20	5,411.20	22.95	22.96	3.14	18.37	18,553.00	18.8641	4.8451	23.7092	16.9537
1988	189,008	43,259	55,476	287,743	2,677.50	884.90	785.70	4,348.10	14.17	20.46	14.18	15.11	4,260.90	975.60	172.80	5,409.00	22.54	22.55	3.11	18.80	19,796.00	17.4937	4.4700	21.9637	15.6136
1989	199,301	43,539	47,077	289,917	2,928.30	892.50	691.90	4,512.70	14.69	20.50	14.70	15.57	4,483.20	879.20	147.40	5,509.80	22.49	22.49	3.13	19.35	20,451.00	17.6948	4.3620	22.0568	19.5560
1990	209,201	43,723	38,146	291,070	3,074.20	893.70	560.60	4,528.50	14.69	20.44	14.70	15.56	4,672.90	876.70	2.60	5,552.20	22.34	22.34	3.07	19.42	21,083.00	17.2395	4.2389	21.4784	19.0806
1991	209,201	43,723	38,146	291,070	3,241.60	895.30	591.30	4,728.20	15.50	20.48	15.50	16.24	4,681.90	978.30	118.80	5,779.00	22.38	22.37	3.11	19.85	21,132.00	18.1414	4.2367	22.3781	18.1649
1992	209,201	43,723	38,146	291,070	3,241.60	895.30	591.30	4,728.20	15.50	20.48	15.50	16.24	4,681.90	978.30	118.80	5,779.00	22.38	22.37	3.11	19.85	21,131.00	18.1412	4.2369	22.3781	18.1649
1993	209,201	43,723	38,146	291,070	3,241.60	895.30	591.30	4,728.20	15.50	20.48	15.50	16.24	4,681.90	978.30	118.80	5,779.00	22.38	22.37	3.11	19.85	21,130.00	18.1410	4.2371	22.3781	18.1649
1994	209,201	43,723	38,146	291,070	3,241.60	895.30	591.30	4,728.20	15.50	20.48	15.50	16.24	4,681.90	978.30	118.80	5,779.00	22.38	22.37	3.11	19.85	21,129.00	18.1409	4.2372	22.3781	18.1649
1995	209,201	43,723	38,146	291,070	3,241.60	895.30	591.30	4,728.20	15.50	20.48	15.50	16.24	4,681.90	978.30	118.80	5,779.00	22.38	22.37	3.11	19.85	21,129.00	18.1409	4.2372	22.3781	18.1649
1996	196,910	41,178	35,907	273,995	3,042.60	843.50	555.10	4,441.20	15.45	20.49	15.46	16.21	4,400.80	920.00	111.60	5,432.40	22.35	22.35	3.11	19.83	21,129.00	17.0277	3.9921	21.0198	18.2461
1997	196,910	41,178	35,907	273,995	3,042.60	843.50	555.10	4,441.20	15.45	20.49	15.46	16.21	4,400.80	920.00	111.60	5,432.40	22.35	22.35	3.11	19.83	21,127.00	17.0294	3.9925	21.0219	18.2461
1998	196,910	41,178	35,907	273,995	3,042.60	843.50	555.10	4,441.20	15.45	20.49	15.46	16.21	4,400.80	920.00	111.60	5,432.40	22.35	22.35	3.11	19.83	21,127.00	17.0272	3.9925	21.0197	18.2461
1999	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	21,127.00	16.2575	0.9126	17.1701	19.7385
2014	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	21,127.00	16.2575	0.9126	17.1701	19.7385
2015	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	21,042.00	16.3244	0.9164	17.2408	19.7385
2016	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,954.00	16.3927	0.9201	17.3128	19.7385
2017	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,848.00	16.4762	0.9249	17.4011	19.7385
2018	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,761.00	16.5449	0.9288	17.4737	19.7385
2019	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,730.00	16.5699	0.9301	17.5000	19.7385
2020	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,706.00	17.5892	0.9310	18.5202	19.7385
2021	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,692.00	17.6003	0.9319	18.5322	19.7385
2022	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,687.00	17.6044	0.9320	18.5364	19.7385
2023	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,687.00	17.6044	0.9320	18.5364	19.7385
2024	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,683.00	17.6075	0.9322	18.5397	19.7385
2025	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,678.00	17.6115	0.9324	18.5439	19.7385
2026	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,677.00	17.6124	0.9323	18.5447	19.7385
2039	187,501	9,587	34,205	231,293	2,904.90	192.80	530.20	3,627.90	15.49	20.11	15.50	15.69	4,199.40	214.40	106.30	4,520.10	22.40	22.36	3.11	19.54	20,676.00	17.6130	0.9326	18.5456	19.7385

File: Contract WHMWSC(Total)

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STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

AMENDMENT NO. 18 TO THE WATER SUPPLY CONTRACT
BETWEEN
THE STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
AND
CASTAIC LAKE WATER AGENCY

THIS AMENDMENT to the Water Supply Contract is made this 31st day of March, 1999, pursuant to the provisions of the California Water Resources Development Bond Act, the Central Valley Project Act, and other applicable laws of the State of California, between the State of California, acting by and through its Department of Water Resources, herein referred to as the "State," and Castaic Lake Water Agency, herein referred to as the "Agency."

RECITALS:

A. The State and the Agency have entered into and subsequently amended a Water Supply Contract (the "Water Supply Contract") providing that the State will supply certain quantities of water to the Agency, and providing that the Agency shall make certain payments to the State, and setting forth the terms and conditions of such supply and such payment.

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B. The contractors and the State have amended the Water Supply Contracts to implement provisions of the Monterey Agreement (the "Monterey Amendment").

C. Among other things, Article 53 of the Water Supply Contract provides for the permanent transfer of up to 130,000 acre-feet of agricultural entitlement water to urban agencies.

D. The Agency and the Wheeler Ridge-Maricopa Water Storage District have entered into an Agreement to Purchase Wheeler Ridge-Maricopa Water Storage District State Water Project Entitlement to Water executed as of this date to provide for the sale by Kern County Water Agency, herein referred to as "KCWA", on behalf of Wheeler Ridge-Maricopa to the Agency of 41,000 acre-feet per year of KCWA's annual entitlement that has been allocated to Wheeler Ridge-Maricopa by KCWA under the contract between Wheeler Ridge-Maricopa and KCWA dated January 8, 1970 and all amendments thereto.

E. The State and Agency wish to set forth their agreement as to such matters as (i) the 41,000 acre-feet per year increase in the Agency's annual entitlement, (ii) the transfer of related transportation repayment obligations, and (iii) the revision of proportionate use of facilities factors set forth in the Water Supply Contract.

F. The State and KCWA are simultaneously with the execution and delivery of this Amendment, entering into Amendment No. 28 to KCWA's Water Supply Contract between KCWA and the State in order to reflect (i) the transfer of Table A Entitlement described herein, (ii) the transfer of related transportation repayment obligations, and (iii) the revision of proportionate use of facilities factors.

G. This Amendment is permitted by the terms of the Water Supply Contract, and except as amended herein, the provisions of the Water Supply Contract will remain in full force and effect.

NOW, THEREFORE, it is mutually agreed that the following changes are hereby made to the Agency's Water Supply Contract:

1. Article 53(j) is added to read:

(j) In accordance with Article 53(a) the Agency is increasing its Table A annual entitlements by 41,000 acre-feet beginning in year 2000 and each succeeding year thereafter for the term of the contract through a sale from Kern County Water Agency of 41,000 acre-feet of the 130,000 acre-feet made available to Urban Contractors. As a result of this sale, Table A as designated in Article 6(b) is amended as follows:

TABLE A

ANNUAL ENTITLEMENTS
CASTAIC LAKE WATER AGENCY
(Acre-feet)

Year		
1	(1968)	3,700
2	(1969)	5,000
3	(1970)	5,700
4	(1971)	6,700
5	(1972)	8,936
6	(1973)	12,400
7	(1974)	15,400
8	(1975)	18,200
9	(1976)	21,200
10	(1977)	24,100
11	(1978)	24,762
12	(1979)	28,000
13	(1980)	30,400
14	(1981)	32,800
15	(1982)	34,800
16	(1983)	37,300
17	(1984)	39,600
18	(1985)	41,800
19	(1986)	43,600
20	(1987)	45,600
21	(1988)	48,000
22	(1989)	50,100
23	(1990)	52,000
24	(1991)	54,200
25	(1992)	54,200
26	(1993)	54,200
27	(1994)	54,200
28	(1995)	54,200
29	(1996)	54,200
30	(1997)	54,200
31	(1998)	54,200
32	(1999)	54,200
~~33~~	~~(2000)~~	~~54,200~~
33	(2000)	**95,200**
And each succeeding year thereafter, for the term of this contract as an annual entitlement:		~~54,200~~ **95,200**

The following apply to this sale:

(1) Increases in the Agency's Delta Water and Transportation Charges and Water System Revenue Bond Surcharge resulting from the increase in the Agency's annual entitlements for 2000 and each year thereafter shall commence January 1, 2000, and be identified by the State and included in its annual Statement of Charges to the Agency.

(2) All future adjustments in charges and credits of past costs associated with the 41,000 acre-feet of annual entitlement (or applicable portion thereof) and the related transportation capacity in Reaches 1 through 16A of the California Aqueduct shall be attributable to the Agency as if the Agency's annual entitlement and the related transportation capacity had been increased by the 41,000 acre-feet of annual entitlement purchased from the KCWA in years prior to January 1, 2000.

(3) For cost allocation and repayment purposes, Exhibit A attached hereto shows entitlement and capacity amounts for each aqueduct reach in which the Agency participates. These redetermined values shall be used to derive the proportionate use of facilities factors as set forth in Table B as designated in Article 24(b). The capacity amounts shown in Exhibit A are estimated values. Actual values will be used by the State in implementing the terms of this Amendment and in redetermination of Table B of this Water Supply Contract under Article 28.

2. Article 12(c)(1) which defines the limits on the instantaneous rate of flow to the Agency from Castaic Lake based on peaking factors, is modified to delete "ninety-nine (99)" and replace it with "one hundred fifty (150)."

3. This Amendment is contingent upon the effectiveness of Water Supply Contract Amendment No. 28, between the State and the KCWA. If either amendment ceases to be effective, the State may identify the date on which the contract amendments shall be deemed inoperative, for the purpose of assuring timely repayment of contract obligations and orderly administration of the long-term water supply contracts.

4. The Agency agrees to indemnify, defend, and hold harmless the State and any of its officers, agents, or employees from any liability, expenses, defense costs, attorney fees, claims, actions, liens and lawsuits of any kind arising from or related to any and all actions implementing this Amendment and associated agreements.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment on the date first above written.

Approved as to legal form
and sufficiency:

for Chief Counsel
Department of Water Resources

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

for Stephen L. Kashiwada
Director

ATTEST:

Robert H. Clark
Signature

Ass't Secretary
Title

CASTAIC LAKE WATER AGENCY

William Pence
Signature

President, Board of Directors
Title

AMENDMENT NO. 18
EXHIBIT A

CASTAIC LAKE WATER AGENCY
ANNUAL ENTITLEMENT AND CAPACITY VALUES FOR EACH REACH FOR COST ALLOCATION AND REPAYMENT ONLY

The values related to this transfer are estimated to be as follows:

California Aqueduct [1]	Before Transfer		Entitlement Transferred from KCWA (AF) (3)	Capacity Transferred from KCWA (cfs) (4)	Additional Capacity Required (cfs) (5)	After Transfer	
	Annual Entitlement (AF) (1)	Capacity (cfs) (2)				Total Annual Entitlement (AF) (6)	Total Capacity (2)+(4)+(5) (cfs) (7)
Reach 1	54,200	95	41,000	122	0	95,200	217
Reach 2A	54,200	95	41,000	122	0	95,200	217
Reach 2B	54,200	95	41,000	122	0	95,200	217
Reach 3	54,200	95	41,000	122	0	95,200	217
Reach 4	54,200	95	41,000	122	0	95,200	217
Reach 5	54,200	95	41,000	122	0	95,200	217
Reach 6	54,200	95	41,000	122	0	95,200	217
Reach 7	54,200	95	41,000	122	0	95,200	217
Reach 8C	54,200	95	41,000	122	0	95,200	217
Reach 8D	54,200	95	41,000	122	0	95,200	217
Reach 9	54,200	75	41,000	122	0	95,200	197
Reach 10A	54,200	75	41,000	122	0	95,200	197
Reach 11B	54,200	75	41,000	122	0	95,200	197
Reach 12D	54,200	75	41,000	122	0	95,200	197
Reach 12E	54,200	75	41,000	122	0	95,200	197
Reach 13B	54,200	75	41,000	122	0	95,200	197
Reach 14A	54,200	75	41,000	120	0	95,200	195
Reach 14B	54,200	75	41,000	77	0	95,200	152
Reach 14C	54,200	75	41,000	46	11	95,200	132
Reach 15A	54,200	75	41,000	39	18	95,200	132
Reach 16A	54,200	75	41,000	25	32	95,200	132
Reach 17E	54,200	75	41,000	0	57	95,200	132
Reach 17F	54,200	75	41,000	0	57	95,200	132
West Branch							
Reach 29A	54,200	75	41,000	0	57	95,200	132
Reach 29F	54,200	75	41,000	0	57	95,200	132
Reach 29G	54,200	75	41,000	0	57	95,200	132
Reach 29H /2/	54,200	--	41,000	0	--	95,200	--
Reach 29J	54,200	75	41,000	0	57	95,200	132
Reach 30 /2/	54,200	--	41,000	0	--	95,200	--

[1] These numbers apply to the reaches as set forth in Bulletin 132, Figure B-4, "Repayment Reaches and Descriptions."

[2] Aqueduct capacity in cfs is not applicable to Pyramid Lake (Reach 29H) and Castaic Lake (Reach 30). The maximum instantaneous flow rate for deliveries to the Agency from Castaic Lake is 150 cfs.

FRIENDS OF THE SANTA CLARA RIVER, Plaintiff and Appellant, v. CASTAIC LAKE WATER AGENCY, Defendant and Respondent.

No. B145283.

COURT OF APPEAL OF CALIFORNIA, SECOND APPELLATE DISTRICT, DIVISION FOUR

95 Cal. App. 4th 1373; 116 Cal. Rptr. 2d 54; 2002 Cal. App. LEXIS 300; 2002 Cal. Daily Op. Service 1246; 2002 Daily Journal DAR 1477

January 10, 2002, Decided

SUBSEQUENT HISTORY: [***1] The Publication Status of this Document has been Changed by the Court from Unpublished to Published February 6, 2002.

Review Denied April 17, 2002, Reported at: *2002 Cal. LEXIS 2774.*

PRIOR HISTORY: APPEAL from a judgment of the Superior Court of Los Angeles County. No. BS05694. David P. Yaffe, Judge.

DISPOSITION: Reversed.

LexisNexis(R) Headnotes

SUMMARY: CALIFORNIA OFFICIAL REPORTS SUMMARY

A nonprofit environmental group filed a petition for a writ of mandate challenging a water agency's certification of an environmental impact report (EIR) as inadequate under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The project analyzed in defendant's EIR was its purchase of entitlement to 41,000 acre-feet per year of state water from a water storage district. Defendant's EIR was tiered on an earlier EIR, which had been prepared in conjunction with a statewide agreement that equalized allocations of entitlements to water from the state water project between agricultural and urban contractors. The trial court entered judgment denying plaintiff's petition. (Superior Court of Los Angeles County, No. BS05694, David P. Yaffe, Judge.)

The Court of Appeal reversed, directing the trial court to issue a writ of mandate vacating the certification of defendant's EIR, and ordering the trial court to retain jurisdiction until defendant certified an EIR complying with CEQA. The court held that decertification of defendant's EIR was required, since another appellate court had found that the previous EIR, on which defendant's EIR was tiered, was inadequate and had decertified it. Pub. Resources Code, § 21094, subd. (a), authorizes tiering when the previous EIR has been certified. Defendant's EIR had a defect, since the previous EIR had been decertified. The court further held that defendant's tiering on the decertified EIR was prejudicial error, since defendant had not in its EIR addressed the environmental effects of its project absent the protections for agricultural contractors provided for in the statewide agreement that had been the subject of the decertified EIR. (Opinion by Vogel (C. S.), P. J., with Hastings and Curry, JJ., concurring.)

HEADNOTES: CALIFORNIA OFFICIAL REPORTS HEADNOTES

Classified to California Digest of Official Reports

(1a) (1b) Pollution and Conservation Laws § 2.3--California Environmental Quality Act--Environmental Impact Reports--Tiering--Effect of Decertification of Previous EIR. --The trial court erred in denying a nonprofit environmental group's mandamus challenge to a water agency's environmental impact report (EIR) on the ground it was inadequate under the California Environmental Quality Act (CEQA) (*Pub.*

Resources Code, § 21000 et seq.). The project analyzed in defendant's EIR was its purchase of entitlement to 41,000 acre-feet per year of state water from a water storage district. Defendant's EIR was tiered on an earlier EIR, which had been prepared in conjunction with a statewide agreement that equalized allocations of entitlements to water from the state water project between agricultural and urban contractors. Decertification of defendant's EIR was required, since an appellate court had found that the previous EIR, on which defendant's EIR was tiered, was inadequate and had decertified it. *Pub. Resources Code, § 21094*, subd. (a), authorizes tiering when the previous EIR has been certified. Hence, defendant's EIR had a defect, since the previous EIR had been decertified. In addition, defendant's tiering on the decertified EIR was prejudicial error, since defendant had not in its EIR addressed the environmental effects of its project absent the protections for agricultural contractors provided for in the statewide agreement that had been the subject of the decertified EIR.

[See *4 Witkin, Summary of Cal. Law (9th ed. 1987) Real Property, § 59* et seq.]

(2) Pollution and Conservation Laws § 2.3--California Environmental Quality Act--Environmental Impact Reports--Tiering. --The tiering provisions (*Pub. Resources Code, § § 21068.5, 21093, 21094*) of the California Environmental Quality Act (*Pub. Resources Code, § 21000* et seq.) enable a public agency to incorporate by reference and utilize a prior environmental impact report. Tiering is favored by the Legislature to streamline the regulatory process and avoid wasteful duplication of effort. Under CEQA Guidelines, the later EIR should state that the lead agency is using the tiering concept and that it is being tiered with the earlier EIR.

COUNSEL: Brandt-Hawley & Zoia and Susan Brandt-Hawley for Plaintiff and Appellant.

Robert H. Clark; Kane, Ballmer & Berkman and R. Bruce Tepper, Jr., for Defendant and Respondent.

JUDGES: Opinion by Vogel (C. S.), P. J., with Hastings and Curry, JJ., concurring.

OPINIONBY: C.S. VOGEL

OPINION: [*1375] [55]**

VOGEL (C. S.), P. J.

INTRODUCTION

In 1995, the California State Department of Water Resources (DWR) and water contractors of the State Water Project (SWP) reached a historic agreement, known as the Monterey Agreement, changing the allocations between agricultural and urban contractors of entitlements to SWP water. A major component of the Monterey Agreement was the transfer of entitlements up to 130,000 acre-feet per year from agricultural contractors to urban contractors, on a willing buyer-willing **[***2]** seller basis. Pursuant to the Monterey Agreement, respondent Castaic Lake Water Agency (respondent) purchased from the Kern County Water Agency (KCWA) and its member district the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) entitlement to 41,000 acre-feet per year of SWP water.

Respondent approved this transfer after certifying a project environmental impact report (EIR) pursuant to the California Environmental Quality Act (CEQA), *Public Resources Code section 21000* et seq. n1 In the present case appellant Friends of the Santa Clara River (appellant), a nonprofit California corporation, challenges the sufficiency of respondent's EIR.

n1 All further statutory references are to the Public Resources Code unless otherwise indicated. All references to "Guidelines" are to the CEQA regulations in title 14, California Code of Regulations.

Previously, the Central Coast Water Authority (CCWA) as lead agency prepared an EIR on the environmental effects statewide of implementing **[***3]** the Monterey Agreement (the Monterey Agreement EIR). Then the Belridge Water Storage District, one of the member districts of KCWA, as lead agency prepared an EIR on the environmental effects in Kern County of selling up to 130,000 acre-feet of SWP entitlements to then unidentified purchasers (the Belridge EIR). Then respondent's EIR "tiered" on the Monterey Agreement EIR and the Belridge EIR.

Appellant unsuccessfully petitioned the trial court in the present case for a writ of mandate compelling respondent to set aside the certification of respondent's EIR and approval of this project, on various grounds of alleged failure to comply with CEQA. Appellant appealed the judgment denying its petition for a writ of mandate.

While the present appeal was pending, the Court of Appeal for the Third Appellate District found the Monterey Agreement EIR inadequate and ordered it decertified. (*Planning & Conservation League v. Department of* **[*1376]** *Water Resources (2000) 83 Cal.*

App. 4th 892 [100 Cal. Rptr. 2d 173], review den. Dec. 13, 2000, hereafter cited as *PCL.*) We conclude this requires decertifying respondent's tiered EIR.

FACTUAL AND PROCEDURAL BACKGROUND [***4]

The Monterey Agreement

The SWP was constructed in the 1960's. It is a complex system of reservoirs, dams, power plants, pumping plants, canals, and aqueducts for storage and delivery of water. DWR manages the SWP. DWR has contracts with water contractors to deliver [**56] water to the contractors. Each such contract sets forth a maximum annual entitlement. DWR has historically delivered less water than the entitlements. The reliability of delivery is approximately 50 percent of entitlements.

Before the Monterey Agreement, shortfalls in deliveries due to prolonged droughts and other factors led to friction among the contractors over obtaining the available SWP water. Urban and agricultural contractors each believed the other was receiving preferential treatment. This friction was exacerbated by a provision in the SWP contracts that in years when shortfalls occurred, required agricultural contractors to incur the first delivery cutbacks. n2 Because contractors pay certain fixed costs to finance the SWP regardless of actual deliveries, agricultural contractors suffered severe delivery reductions with little relief from their financial obligations. Litigation was threatened. [***5] DWR, agricultural and urban water contractors met and negotiated the Monterey Agreement to avoid litigation and to increase the reliability of supply to all contractors. (*PCL, supra, 83 Cal. App. 4th at pp. 901-902.)*

n2 Under article 18(a) of then existing contracts, deliveries to agricultural contractors were reduced by 50 percent in any one year or a total of 100 percent in seven consecutive years, before deliveries were reduced to other contractors. (*PCL, supra, 83 Cal. App. 4th at p. 899.)*

Under the Monterey Agreement, all future allocations of SWP water are based on entitlements; when supply is insufficient to meet requests, deliveries to all contractors will be reduced in proportion to their entitlements; no longer will agricultural contractors be required to absorb the first reductions. This increases the reliability of supply to agricultural contractors.

Inferably in return, under the Monterey Agreement, agricultural contractors "will make available for permanent [***6] transfer to Urban Contractors on a willing buyer-willing seller basis 130,000 acre-feet of annual entitlements, [*1377] with [KCWA] being responsible for any portion of this amount not made available by other Ag Contractors." This will allow urban contractors to obtain additional entitlements, thereby slightly increasing their overall deliveries even in times of shortage.

In addition, the Kern Fan Element, a property acquired by DWR for water banking, will be transferred to agricultural contractors, 45,000 acre-feet of agricultural contractors' entitlements will be retired, and various operational changes will be made to improve efficiency and flexibility of the system.

The Monterey Agreement EIR

The parties to the Monterey Agreement determined that its implementation could have potential environmental consequences and therefore an EIR was required. They designated CCWA, one of the SWP contractors, as lead agency to prepare the Monterey Agreement EIR. CCWA prepared the draft and final EIR's on implementation of the Monterey Agreement in May and October 1995.

The introduction to the draft Monterey Agreement EIR stated it is a "program" EIR. Reiterating the criteria [***7] for a program EIR found in Guideline section 15168, it stated: "The purpose of a Program EIR is to document a series of actions so related that they can be characterized as one project. The actions may be related in one or more of the following ways: by geographical proximity; as logical parts in a chain of contemplated actions; in connection with the issuance of rules, regulations, plans, or [**57] other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways. The proposal to implement the Monterey Agreement fulfills both the second and third criteria above, i.e., logical parts in a chain of contemplated actions, and a series of actions related to the issuance of rules, regulations, plans, and other general criteria to govern the conduct of a continuing program." Again reiterating matter in Guideline 15168, it stated the advantages of a program EIR are that it may: "provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR [***8] on an individual action; ensure consideration of cumulative actions that might be slighted in a case-by-case analysis; avoid duplicative reconsideration of basic policy considerations; allow the Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts; and allow reduction in paperwork." [*1378]

The Monterey Agreement EIR identified five major components of the Monterey Agreement with potential environmental effects: (1) revision of the methodology used to allocate water among contractors, (2) retirement of 45,000 acre-feet of agricultural entitlement, (3) transfer by sale between willing sellers and willing buyers of 130,000 acre-feet of entitlements from agricultural to urban contractors, (4) changes in the Kern Fan Element of the Kern Water Bank, and (5) changes in the manner Castaic Lake and Lake Perris terminal reservoirs may be operated. In general, the Monterey Agreement EIR determined the environmental effects that were capable of quantification at that time were negligible.

With regard to the change in the method of allocating entitlements, **[***9]** it summarized, "Changes in the method of allocating water become relevant only in years when demand exceeds available supply. During such years, following enactment of the principles contained in the Monterey Agreement, shortages will be shared proportionately by all contractors rather than be borne primarily by Agricultural Contractors as is the current practice. Thus, during future deficit years Agricultural Contractors can anticipate larger deliveries of water and Urban Contractors can expect smaller quantities of water than would have been the case in the past. These changes bring about a decrease in the variability of supplies delivered to Agricultural Contractors while increasing slightly that for the Urban Contractors. [P] Added reliability of deliveries to Agricultural Contractors could increase the continuity of agricultural activities in these service areas. Added variability of water deliveries to Urban Contractors can, however, be offset by their acquisition of additional entitlement offered for sale by Agricultural Contractors as outlined below, and through other measures included in the program for increased water management flexibility."

With regard to the transfers **[***10]** of entitlements, it summarized: "The transfer of 130,000 AF of water entitlement from Agricultural Contractors to Urban Contractors and non-SWP Contractors has the potential to affect activities and land use patterns in those jurisdictions both relinquishing and acquiring the entitlement. Effects in those areas relinquishing water entitlement are likely to be centered on agricultural practices while those in areas acquiring water entitlement may relate to growth accommodation. The location of **[**58]** the eventual sellers and buyers of water entitlements is not known at this time." "SWP operations would not be adversely affected by the shift in deliveries among Contractors."

Belridge EIR

In contemplation of the transfer of up to 130,000 acre-feet of SWP entitlements from KCWA pursuant to the Monterey Agreement, the Belridge **[*1379]** Water Storage District as lead agency prepared a draft and final EIR in April and June of 1998 evaluating the effects in Kern County of such transfers. It evaluated the effects on the Belridge Water Storage District, the Lost Hills Water District, and the WRMWSD (all member districts of KCWA) of their transfer of SWP entitlements to yet undetermined **[***11]** purchasers.

The Belridge EIR repeatedly described the project being studied as a transfer of up to 130,000 acre-feet of entitlements *under the Monterey Agreement.* It stated: "The entitlement transfer would occur under the Monterey Agreement. . . . The benefits and impacts of the Monterey Agreement were evaluated in a separate environmental impact report [the Monterey Agreement EIR] which is discussed below and incorporated into this report by reference. However, to understand the potential benefits and impacts of the entitlement transfer, conditions that existed prior to the Monterey Agreement and after the Monterey Agreement are discussed."

The Belridge EIR then summarized how deliveries of SWP water differ before and after the Monterey Agreement. It also summarized in detail the Monterey Agreement EIR, which it incorporated by reference.

The Belridge EIR repeatedly stressed that under the changes made by the Monterey Agreement in allocating water during periods of shortage, agricultural contractors would not disproportionately suffer reduced deliveries, and therefore would enjoy increased reliability of deliveries even in times of shortage.

These assumptions enabled **[***12]** the Belridge EIR to conclude that the transfer of up to 130,000 acre-feet of entitlements from the member districts would not adversely affect at all the irrigated agricultural lands therein, because relinquishment of the entitlements would be compensated, on an average annual basis, by the increased reliability of SWP deliveries pursuant to the Monterey Agreement.

Respondent's EIR

The EIR in dispute in the present case is the EIR prepared by respondent in February 1999 on the proposed transfer to respondent of 41,000 acre-feet per year of SWP entitlement from KCWA and its member district WRMWSD.

The introduction section of respondent's EIR expressly stated, "*This EIR is a Project EIR that tiers from*" (1) a prior 1988 EIR by respondent, "Capital Program and Water Plan Including Acquisition of Supplemental Water and **[*1380]** of a Proposed Second Plant Site", (2) the Monterey Agreement EIR, and (3) the

Belridge EIR. It stated the proposed transfer "is an example of the individual projects envisioned in the Monterey Agreement and evaluated on a programmatic basis in the Monterey Agreement EIR."

This introduction stated that "As a result of the recently adopted Monterey **[***13]** Agreement, [respondent] has the opportunity to purchase additional SWP entitlement beyond its current entitlement. The opportunity to acquire additional entitlement under the terms of the Monterey Agreement disappears when the subject entitlement (130,000 AFY) is transferred **[**59]** to [respondent] or other entities. A summary of the Monterey Agreement is presented below, and a more complete discussion of the SWP is included in the Monterey Agreement FEIR." A separate section of the introduction described "the Monterey Agreement/Amendment and its anticipated effect on historic water deliveries." After summarizing the major provisions of the Monterey Agreement, it concluded, "The Monterey Agreement has three primary objectives: (1) to increase the reliability of all SWP Contractors' water supplies; (2) to stabilize the rate structure to improve the financial viability of the SWP; and (3) to increase water management flexibility for all SWP Contractors. A permanent transfer of agricultural entitlement to an area with urban development potential such as that analyzed in this document is one of the ways that these objectives are intended to be met."

Respondent's EIR also discussed **[***14]** the Belridge EIR. It stated, "An independent EIR evaluating the environmental impacts of the sale of SWP entitlement within Kern County was completed by Belridge Water Storage District in June 1998. Issues identified in that EIR are not evaluated further in this EIR. Appropriate sections of the Belridge EIR . . . are incorporated herein." It added that the proposed transfer would not significantly decrease water deliveries or irrigated acreage within KCWA or WRMWSD because, with implementation of the Monterey Agreement, "SWP deliveries to agricultural users will not be subject to absorbing the initial deficiencies during droughts and other unreliable delivery scenarios." The project description section acknowledged that this proposed transfer, "assuming it proceeds under the Monterey Agreement, will fulfill part of [KCWA's] commitment [under the Monterey Agreement to transfer up to 130,000 acre feet of entitlements to urban contractors]."

A commenter on respondent's draft EIR, Santa Clarita Organization for Planning the Environment, commented that the draft EIR was deficient in failing to analyze impacts on land in Kern County or on Castaic Lake as a terminal reservoir of the **[***15]** SWP. Respondent responded that those impacts had **[*1381]** already been evaluated in the Belridge EIR and the Monterey Agreement EIR and therefore were not required to be addressed in respondent's EIR.

Despite these numerous references relying on the Monterey Agreement and the Monterey Agreement EIR, respondent's EIR also asserted the proposed transfer of SWP entitlements could take place without the Monterey Agreement, under pre-Monterey Agreement contract law, with the consent of all parties and DWR. It acknowledged that the Monterey Agreement EIR was challenged in the *PCL* case, had been upheld by the Sacramento Superior Court, but was still challenged in the appeal then pending.

A comment from the Environmental Defense Center on the proposed final EIR complained that the EIR expressly tiers on the Monterey Agreement EIR, the status of which was questionable because it was in litigation in the Court of Appeal for the Third Appellate District; it also asserted the Belridge EIR was inappropriate for tiering. Respondent's consultant replied, "The proposed FEIR identifies that the proposed project may proceed either under the provisions of the Monterey Agreement or under the **[***16]** terms of the Kern County Water Agency Contract before it was modified by the Monterey Amendment . . . . The proposed final EIR identified the referenced litigation and Superior Court ruling . . . . [P] The EIR does not **[**60]** tier from the Belridge . . . EIR but incorporates appropriate sections by reference. . . . The inclusion of the reference to the Belridge 1998 EIR [as having been tiered on, as distinguished from having been incorporated by reference] is an error."

On the present appeal respondent admits that its EIR tiers on the Monterey Agreement EIR. Respondent states its EIR incorporates by reference the Belridge EIR.

Trial Proceedings in the Present Case

Appellant Friends of Santa Clara River filed a petition for a writ of mandate compelling respondent to set aside respondent's certification of its EIR and approval of the project, primarily on the ground respondent failed to comply with CEQA. Appellant alleged various defects in the EIR and respondent's findings. The alleged defects did not involve the Monterey Agreement EIR or the then pending *PCL* appeal. The trial court denied appellant's petition, finding that the EIR was adequate and that appellant's **[***17]** other contentions lacked merit. Appellant appealed from the judgment denying the petition. **[*1382]**

The PCL Case

In September 2000, after the trial court's judgment in the present case, the Court of Appeal for the Third Appellate District held the Monterey Agreement EIR prepared by CCWA was inadequate. (*PCL, supra, 83*

Cal. App. 4th 892.) The Court of Appeal found two major defects. (1) The DWR, not CCWA, should have prepared the report as the lead agency; DWR has a statewide perspective and expertise on how allocation of water to another part of the state has implications for distribution throughout the system. *(83 Cal. App. 4th at pp. 903-907.)* (2) The EIR did not adequately address the alternative of "no project"; it should have addressed the environmental implications of invoking article 18(b) of existing contracts, under which entitlements would be permanently reduced to reflect actual delivery patterns. *(83 Cal. App. 4th at pp. 908-920.)* The court commented, "Perhaps the deficiencies in the EIR relate to the provincial experience of the lead agency, a topic we addressed earlier. We conclude the EIR failed to meet the most **[***18]** important purpose of CEQA, to fully inform the decision makers and the public of the environmental impacts of the choices before them. A new EIR must, therefore, be drafted. [P] In view of our earlier conclusion that DWR must serve as lead agency under CEQA, we need not, as we ordinarily would, address the other alleged deficiencies in this EIR. (*Pub. Resources Code, § 21005*, subd. (c).) We need not hypothesize on the remaining issues because DWR, with its expertise on the statewide impacts of water transfers, may choose to address those issues in a completely different and more comprehensive manner." *(83 Cal. App. 4th at p. 920.)*

The Court of Appeal reversed the judgment of the Sacramento Superior Court and remanded with directions to "issue a writ of mandate vacating the certification of the EIR," to "consider such orders it deems appropriate under *Public Resources Code section 21168.9*, subdivision (a)" and to "retain jurisdiction over this action until DWR certifies an EIR in accordance with CEQA standards and procedures that meets the substantive requirements of CEQA." (*PCL, supra, 83 Cal. App. 4th at p. 926.)* **[***19]** It noted, "We earlier declined to stay implementation of the Monterey amendments and transfer of the Kern Fan Element. Consequently, the project was permitted to proceed pending **[**61]** disposition of this appeal. The record does not reflect the current status of the project and, in the absence of such information, we shall issue no orders concerning further implementation of the project. The trial court, acting under the authority provided by *Public Resources Code section 21168.9*, is the more appropriate forum to consider and rule upon requests to enjoin all or portions of the project pending completion of administrative and judicial proceedings necessitated by our opinion." (*Id. at p. 926, fn. 16.)* **[*1383]**

Expanded Issue on This Appeal

(1a) In its appellant's opening brief on the present appeal, appellant reasserted various arguments that appellant had unsuccessfully raised below concerning respondent's EIR and findings. Appellant's opening brief added, cursorily, that the decision in the *PCL* appeal, during pendency of this appeal, "completely shattered" respondent's EIR that was tiered on the EIR decertified in the **[***20]** *PCL* decision. Appellant more fully developed this argument in its appellant's reply brief. We requested and received supplemental briefs from the parties on this issue.

LEGAL BACKGROUND: TIERING OF EIR'S

(2) Tiering "means the coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site-specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report." (§ § 21068.5; Guidelines, § 15152, 15385.)

Tiering is favored by the Legislature to streamline the regulatory process and avoid wasteful duplication of effort. (*Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal. App. 4th 182, 197-198 [55 Cal. Rptr. 2d 625];* **[***21]** § § 21093, 21094; Guideline, § 15152, subd. (b).) "To achieve this purpose, environmental impact reports shall be tiered whenever feasible, as determined by the lead agency." (§ 21093, subd. (b).) "Where a prior environmental impact report has been prepared *and certified* for a program, plan, policy, or ordinance, the lead agency for a later project that meets the requirements of this section shall examine significant effects of the later project upon the environment by using a tiered environmental impact report . . . ." (§ 21094, subd. (a), italics added.) "All public agencies which propose to carry out or approve the later project may utilize the prior environmental impact report and the environmental impact report on the later project to fulfill the requirements of Section 21081 [which concerns findings necessary in order to approve a project if significant environmental effects have been identified]. [P] When tiering is used pursuant to this section, an environmental impact report prepared for a later project shall refer to the prior environmental impact report and state where a copy of the prior environmental impact report may be examined." (§ 21094, subds. (d), (e). **[***22]**) "The later EIR . . . should state that the lead agency is using the tiering **[*1384]** concept and that it is being tiered with the earlier EIR." (Guideline, § 15152, subd. (g).)

DISCUSSION

(1b) Respondent's EIR expressly tiered on the Monterey Agreement EIR. Section 21094, subdivision (a) authorizes tiering where the previous EIR was certified. As a result of the *PCL* decision, the Monterey Agreement EIR is no longer certified. **[**62]** Respondent's EIR therefore has a defect. The question presented for us is whether that error was prejudicial. (§ 21005, subd. (b).)

Respondent contends that although its EIR tiered on the Monterey Agreement EIR, it did not expressly or specifically incorporate any substantive analysis from specific portions of the Monterey Agreement EIR. But respondent's reliance on the Monterey Agreement EIR is implicit in the concept of tiering, even without express reference to portions of the prior EIR's analysis. The express statement that respondent's EIR tiers on the prior EIR may be treated as an admission that respondent relied upon and needed to rely upon **[***23]** the Monterey Agreement EIR. (Guideline, § 15152, subd. (g).)

Aside from a few cursory statements that the present transfer could legally be accomplished under pre-Monterey Agreement contracts, a point we discuss later, respondent's EIR repeatedly referenced this project's part of the overall scheme envisioned by the Monterey Agreement. It stated this EIR was a project EIR tiered on the Monterey Agreement EIR, and that the project may be viewed as one of the projects "evaluated on a programmatic basis in the Monterey Agreement EIR."

Respondent's EIR also expressly tiered on, or at least expressly incorporated and relied upon, the analysis in the Belridge EIR. Respondent's EIR acknowledged that the transfer would not affect irrigated lands in Kern County because of the increased reliability of deliveries to agricultural contractors under the Monterey Agreement, and that the present transfer would fulfill part of KCWA's commitment in the Monterey Agreement. The Belridge EIR, on which respondent relied, repeatedly stated that the potential transfers of up to 130,000 acre-feet would be made pursuant to the Monterey Agreement and would have no significant effect on the irrigated lands, **[***24]** due to the increased reliability of deliveries under the Monterey Agreement. Respondent's reliance on the Belridge EIR illustrates respondent's implied acknowledgement that the transfer in this case is part of an overall larger scheme, analyzed on a programmatic basis in the Monterey Agreement EIR. The *PCL* decision also emphasizes the importance of the statewide perspective in analyzing the implications of water entitlement transfers for the state **[*1385]** and SWP as a whole. We therefore find unpersuasive respondent's present argument that respondent did not rely on the Monterey Agreement EIR.

At oral argument respondent offered a variant of this contention. According to respondent: "the project" being analyzed in respondent's EIR was only the transfer of 41,000 acre-feet of entitlements from WRMWSD to respondent; respondent was only required, therefore, to analyze the environmental effects of that narrow project; respondent adequately evaluated the local environmental effects of the subject transfer; respondent was not *required* to analyze the effects of the transfer on irrigated lands in Kern County or on the SWP upstream from Kern County, and to any extent respondent **[***25]** relied on the Belridge EIR and Monterey Agreement EIR to do so, this was surplusage; therefore the tiering on the Monterey Agreement EIR was harmless and does not require setting aside respondent's EIR that was otherwise adequate, viewed as a stand-alone document evaluating the local environmental impacts of this specific project. Appellant answers that respondent was required to review "the whole of the project." (Guideline, § 15378, subd. (a) [" 'Project' means the whole of an action."].)

[63]** Respondent's argument is not persuasive. The purpose of an EIR is to inform the public and the decision makers of the environmental effects of a project. Implicit in respondent's argument is an innuendo the public and decision makers in respondent's service area do not care about the upstream effects of this project. But in any event, this case does not squarely present that issue. This is not a case where (1) respondent neglectfully failed or deliberately refused to evaluate "upstream" environmental effects and (2) appellant challenged such an EIR as inadequate based on its failure to review upstream effects. Rather, respondent's EIR assumed the public and decision makers would **[***26]** want to know (1) that this project implements the Monterey Agreement, the environmental effects of which were analyzed in the Monterey Agreement EIR and found to be negligible, and (2) that the environmental effects in Kern County were studied in the Belridge EIR and found to be insignificant because of the increased reliability of water deliveries to agricultural contractors under the Monterey Agreement. The *PCL* decision undermined those premises by decertifying the Monterey Agreement EIR.

Respondent next contends the tiering on the Monterey Agreement EIR was not crucial because respondent and KCWA could legally have accomplished the transfer of entitlements under SWP contract law existing prior to the Monterey Agreement. Respondent cites the following portions of its EIR: section 1.3 of the introduction stated, "The SWP entitlement transfer analyzed in this document may proceed either under the provisions of the **[*1386]** Monterey Amendment n3 to KCWA water supply agreement with the DWR (Contract), or under the provisions of KCWA's Contract

before it was modified by the Monterey Amendment," and again, "The entitlement transfer that is the subject of this EIR is of the type [***27] that falls within the provisions of the Monterey Amendment. However, this water transfer could occur without the Monterey Amendment with the consent of all affected parties." The project description section included, "This water transfer is expected to be subject to the conditions of the Monterey Amendment, but is not necessarily dependent upon the Monterey Amendment. With the cooperation of the participating agencies and the California Department of Water Resources (DWR), the transfer could occur in the absence of the Monterey Amendment." Finally, in response to comments from the Environmental Defense Center that tiering on the Monterey Agreement EIR was questionable in light of the *PCL* litigation, respondent's consultant stated, "The proposed FEIR identifies that the proposed project may proceed either under the provisions of the Monterey Agreement or under the terms of the Kern County Water Agency Contract before it was modified by the Monterey Amendment."

n3 By the Monterey "Amendment" respondent's EIR meant amendment of the SWP contracts between DWR and the approving contractors, to implement the principles of the Monterey Agreement.

[***28]

These assertions are based on article 41, a standard provision of state water contracts, stating that "No assignment or transfer of this contract or any part hereof, rights hereunder, or interest herein by the Agency shall be valid unless and until it is approved by the State and made subject to such reasonable terms and conditions as the State may impose."

Respondent's argument is based on a straw man. The issue in this case is not the legal authority of KCWA to sell and of respondent to buy SWP water entitlements, but rather the adequacy of the [**64] evaluation of the environmental effects of doing so. The Belridge EIR evaluated those effects in Kern County pursuant to the Monterey Agreement, concluding that selling the entitlements would not have an effect on irrigated lands because, on average, it would be compensated by the increased reliability of deliveries to agricultural contractors under the Monterey Agreement. Neither the Monterey Agreement EIR, nor the Belridge EIR, nor respondent's EIR evaluated the environmental effects on the seller's irrigated lands of selling the entitlements under pre-Monterey-Agreement conditions, with agricultural contractors subject to [***29] the first and severest reductions in times of shortage.

Respondent contends this shortcoming is alleviated by the inclusion of discussions in the Belridge EIR and respondent's EIR of a "no project [*1387] alternative." This is incorrect. The no project alternative in the Belridge EIR was: not selling the entitlements. The no project alternative in respondent's EIR was: not buying the entitlements. Neither addressed the environmental effects of transferring the entitlements without the protections for agricultural contractors in the Monterey Agreement.

We conclude respondent's tiering on the now decertified Monterey Agreement EIR was prejudicial error. The judgment must be reversed because the certification of respondent's EIR must be vacated, based on the *PCL*/tiering problem. The question arises whether we should address the *other* alleged defects that were litigated below and raised in appellant's opening brief. We asked the parties to address whether these issues were moot if the judgment were reversed based on the *PCL*/tiering problem. Both parties remind us of section 21005, subdivision (c), which provides, "It is further the intent of the Legislature that any [***30] court, which finds, or, in the process of reviewing a previous court finding, finds, that a public agency has taken an action without compliance with this division, shall specifically address each of the alleged grounds for noncompliance." A treatise states, "This language, which courts may not treat as mandatory, is apparently intended to avoid situations in which a court, presented with numerous theories as to why a respondent agency purportedly violated CEQA, chooses to issue a writ based solely on one or a handful of theories, leaving the parties to wonder whether or not the unaddressed theories had merit. In such situations, where the respondent agency must conduct a second CEQA process to cure the problems identified by the court, the agency often does not know whether to modify its environmental document (or findings) to address concerns raised by the petitioners but ignored by the court." (Remy et al., Guide to the California Environmental Quality Act (10th ed. 1999) Judicial Review, pp. 646-647.)

Section 21005, subdivision (c) thus requires only that *if we find* other respects in which the EIR was defective we should describe them for the guidance of the parties. We have [***31] examined all of appellant's other contentions and find them to be *without merit.* If the *PCL*/tiering problem had not arisen, we would have affirmed the judgment. Section 21005, subdivision (c) does not require us to lengthen this opinion by addressing in detail why we *reject* appellant's other contentions. Appellant's supplemental reply brief so concedes: "The court's discussion of all aspects of CEQA noncompliance is respectfully requested, while areas of compliance are not required to be addressed."

This suggests that respondent may be able to cure the *PCL* problem by awaiting action by the DWR complying with the *PCL* decision, then issuing **[*1388]** a subsequent EIR, supplement to EIR, or addendum to EIR (Guidelines, § § 15162, 15163, **[**65]** 15164) tiering upon a newly certified Monterey Agreement EIR. Appellant itself so suggests.

Like the court in *PCL, supra, 83 Cal. App. 4th at page 926* and footnote 16, we leave to the trial court's discretion whether to enjoin all or portions of respondent's project pending completion of an adequate EIR. The trial court is in a better position than this court to determine factually the current status **[***32]** of the *PCL* litigation or of a new Monterey Agreement EIR.

DISPOSITION

The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under section 21168.9. The parties shall bear their own costs on appeal.

Hastings, J., and Curry, J., concurred.

Respondent's petition for review by the Supreme Court was denied April 17, 2002. Baxter, J., was of the opinion that the petition should be granted.

FRIENDS OF THE SANTA CLARA RIVER, Plaintiff and Appellant, v. CASTAIC LAKE WATER AGENCY, Defendant and Respondent.

B164027

COURT OF APPEAL OF CALIFORNIA, SECOND APPELLATE DISTRICT, DIVISION FOUR

2003 Cal. App. Unpub. LEXIS 11239

December 1, 2003, Filed

NOTICE: [*1] NOT TO BE PUBLISHED IN OFFICIAL REPORTS CALIFORNIA RULES OF COURT, RULE 977(a), PROHIBITS COURTS AND PARTIES FROM CITING OR RELYING ON OPINIONS NOT CERTIFIED FOR PUBLICATION OR ORDERED PUBLISHED, EXCEPT AS SPECIFIED BY RULE 977(B). THIS OPINION HAS NOT BEEN CERTIFIED FOR PUBLICATION OR ORDERED PUBLISHED FOR THE PURPOSES OF RULE 977.

PRIOR HISTORY: APPEAL from a judgment of the Superior Court of Los Angeles County. Los Angeles County Super. Ct. No. BS056954. David P. Yaffe, Judge.

DISPOSITION: Affirmed.

COUNSEL: Law Office of Alyse M. Lazar and Alyse M. Lazar for Plaintiff and Appellant.

Rossmann and Moore, Antonio Rossmann and Roger B. Moore for Amici Curiae Planning and Conservation League and Citizens Planning Association of Santa Barbara County, Inc., in support of Plaintiff and Appellant.

Horvitz & Levy, Barry R. Levy, William N. Hancock; R. Bruce Tepper; and McCormick, Kidman & Behrens, Russell G. Behrens, H.L. (Mike) McCormick and David D. Boyer for Defendant and Respondent.

JUDGES: VOGEL (C.S.), P.J. We concur: HASTINGS, J. CURRY, J.

OPINIONBY: VOGEL

OPINION:

INTRODUCTION

This is the second time this case has been before us. On the first appeal we directed the trial court to issue a writ of [*2] mandate to set aside certification of respondent Castaic Lake Water Agency's Environmental Impact Report (EIR) because the EIR had been tiered upon a prior EIR that had been found to be infirm by an intervening appellate decision. Upon remand, respondent and appellant Friends of the Santa Clara River agreed a writ of mandate should issue to decertify the EIR but disagreed about whether the trial court should also enjoin the project pending certification of a new EIR. After consideration of documentary evidence and the presentation of written and oral arguments, the trial court rejected appellant's request for an injunction without prejudice to entertaining a renewed request founded on an adequate showing of entitlement to relief. This appeal follows entry of judgment in October 2002.

Appellant attacks the trial court's denial of its request for an injunction on two separate grounds. Appellant first contends the trial court's denial was in derogation of the directions contained in our earlier decision. The contention lacks merit. The clear and unambiguous dispositional language in our opinion granted the trial court the authority to deny in toto the request for an injunction. Appellant [*3] next contends the trial court erred on the merits in denying its request. Based upon the record, we find the trial court did not abuse its discretion in implicitly finding appellant had

failed to carry its burden of establishing the predicates for injunctive relief. We therefore affirm the judgment.

FACTUAL AND PROCEDURAL BACKGROUND

Respondent purchased from the Kern County Water Agency entitlement to 41,000 acre-feet per year of water. The purchase followed consummation of the Monterey Agreement which changed the allocation between agricultural and urban contractors of entitlements to State Water Project (SWP) water. Respondent approved this purchase after first certifying an EIR. This EIR was "tiered" upon an earlier EIR approving the Monterey Agreement. n1 The Legislature favors tiering to streamline the regulatory process and to avoid unnecessary duplication of effort.

> n1 Tiering "means the coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site-specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report." (*Pub. Res. Code, § 21068.5.*)b

[*4]

Appellant filed a petition for a writ of mandate in the superior court to compel respondent to set aside its certification of the EIR for the purchase of 41,000 acre-feet per year of SWP water. Appellant advanced various grounds in support of its petition. The superior court denied the petition. Appellant appealed the adverse judgment to this court.

While that appeal was pending, our colleagues in the Third Appellate District concluded the EIR prepared for the Monterey Agreement was inadequate and therefore ordered it decertified. (*Planning & Conservation League v. Department of Water Resources (2000) 83 Cal.App.4th 892,* review den. (*PCL*).)

We therefore concluded that in the appeal presented to us *PCL* required decertification of respondent's EIR because it had been tiered on the now-decertified EIR for the Monterey Agreement. (*Friends of the Santa Clara River v. Castaic Lake Water Agency (2002) 95 Cal.App.4th 1373, 1383-1388,* review den. (*Friends I.*) We, however, rejected all of appellant's other challenges to respondent's EIR, finding "them to be *without merit.*" (*Id. at p. 1387.)* We noted: "Respondent may be able **[*5]** to cure the *PCL* problem by awaiting action by the [Department of Water Resources] complying with the *PCL* decision, then issuing a subsequent EIR, supplement to EIR, or addendum to EIR [citations] tiering upon a newly certified Monterey Agreement EIR." (*Id. at pp. 1387-1388.)*

In regard to further action in the trial court we wrote: "We leave to the trial court's discretion whether to enjoin all or portions of respondent's project pending completion of an adequate EIR. The trial court is in a better position than this court to determine factually the current status of the *PCL* litigation or of a new Monterey Agreement EIR." (*Id. at p. 1388.)*

The dispositional paragraph of our decision read, in relevant part: "The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under [*Public Resources Code] section 21168.9.*" (*Id. at p. 1388.)*

Upon remand, the parties **[*6]** agreed the trial court was required to issue a writ of mandate to decertify respondent's EIR. The bone of contention was whether the trial court should also enjoin respondent from proceeding with the project, e.g., the transferring of the entitlement to the 41,000 acre-feet of water per year, pending completion of the new EIR.

Appellant argued: "To allow [respondent] to use any portion of its unstudied 41,000 afy [acre feet per year] entitlement before the EIR analysis is complete will result in **new permanent water connections** that will not be able to be reversed. Once houses are in and the faucets are on, there is no way to turn back. Without the proven need for this water to serve existing users, there is no equitable justification for allowing the use of any portion of the 41,000 afy entitlement in the face of its clear consistency with CEQA policies against pre-approved projects. A fair EIR process requires that project approval not be up and running as a foregone conclusion."

The evidentiary support for this argument is found in a declaration executed in August 2002 by appellant's counsel. The declaration sought to establish respondent would have sufficient water **[*7]** from other sources to supply its existing customers without use of the entitlement. From these factual allegations, appellant argued any use by respondent of the entitlement would necessarily be for new customers and therefore subject to being enjoined. The declaration referenced several

attached documents and included allegations grounded upon information and belief. In pertinent part it averred:

> "I am informed that [respondent] has utilized at most 3674 af [acre feet] of the subject 41,000 afy [acre feet per year] water transfer during the past year. Attached is a true copy of CLWA Production Report for 2000, 2001, and half of 2002, and also a DWR Notice to State Water Project Contractors dated May 2002. The reports speak for themselves, and reflect CLWA's use of State Water Project entitlements to its various purveyors. The allocation of SWP water was 65% in the last year, and *petitioner is informed and believes that CLWA expects an even larger allocation in the coming fiscal year to as much as 90%.* The report shows that water use is measured yearly from June to June. It is undisputed that CLWA has a 54,200 afy entitlement to SWP water that is not under any [*8] legal cloud and clearly available for use, aside from the 41,000 afy that is the subject of this litigation. Based on a 65% delivery of SWP water, CLWA's allocation of its undisputed 54,200 afy totals 35,230 af. The report reflects use of 38,974 af from June 2001 until June 2002; which appears to be only 3674 af more than can be supplied from the 54,200 afy entitlement. It thus appears that CLWA *may have utilized* 3674 af of its allocation from the subject 41,000 af entitlement in the past year. If the SWP allocations increase to 75% or greater, *as is apparently expected,* by doing the math it appears that the 41,000 af water transfer is not needed for existing customers of the CLWA water purveyors while the supplemental environmental review is pending." (Italics added.)

Appellant therefore sought an order enjoining respondent "from any and all use of the 41,000 afy water transfer under the current approvals."

In addition, appellant's counsel averred she had communicated with counsel in the *PCL* case and that as of August 22, 2002, "the *PCL* case remand has not yet been settled or otherwise resolved, and that the Monterey Agreement Implementation Draft EIR to [*9] be prepared by the Department of Water Resources (DWR) as required by the *PCL* decision has not yet been published." As for the status of respondent's EIR, the declaration averred that respondent's attorney had informed her "that the agency has not yet published its Draft Supplemental EIR in response to [the Court of Appeal's decision], but that it intends to prepare the EIR itself rather than await the new DWR Monterey Agreement Implementation EIR."

In opposition, respondent asked the trial court to "**issue an order allowing the Transfer of Entitlement to remain intact pending completion of a new EIR.**" In particular, respondent urged that the entitlement was "necessary to satisfy current existing and projected near-term water demand"; that a "decision to set aside the Transfer of Entitlement would cause immediate irreparable harm to the Agency and the water consumers"; and that the Transfer "has been in effect for more than three years, and there is no evidence that the Transfer has resulted in any new or increased significant adverse environmental effects."

Respondent's opposition was supported by a detailed eight-page declaration from Dan Masnada, respondent's general [*10] manager. Masnada averred that respondent had already retained consultants to prepare a new EIR and they planned to complete the process by March 2003. A portion of Masnada's declaration directly refuted the allegations made by appellant's counsel about respondent's projected water supply. In pertinent part, Masnada averred:

> "[Counsel's] declaration states that 'CLWA expects an even larger allocation made by DWR in the coming fiscal year to as much as 90%.' . . . *There is no factual basis for this statement.* There have been no indications that CLWA's SWP allocation made by DWR in the coming year will be anywhere near 90%. To the contrary, based on discussions with DWR Operations Control Office Personnel it is likely that the initial 2003 SWP allocation on December 1, 2002 will be approximately 20%, as it was last year. If dry conditions occur next year, the final SWP allocation for 2003 could remain as low as 20%.
>
> [Counsel's] Declaration also states that the CLWA Production Report 'shows that water use is measured yearly from June to June.' . . . This is incorrect. While annual water use can be measured from July to June, available SWP water supply is [*11] characterized on a calendar year

> basis because DWR allocates it on a calendar year basis. *[Her] accounting of water deliveries is flawed.* She has utilized an approach that understates CLWA's current level of demand and projected deliveries to the retail purveyors during 2002. As discussed above, and shown in Exhibit A, CLWA's Final 2001 SWP allocation was 39%. Without the 41,000 AF in 2001, CLWA would have experienced a shortfall of 14,218 AF."

Appellant's reply to respondent's opposition did not include any additional declaration(s). Instead, its reply asserted respondent's "factual information" was "confusingly presented and misleading" and that a portion of Masnada's opinion about SWP allocations for 2003 was "complete conjecture and speculation."

After a hearing in which the parties presented argument and responded to questions from the bench, the trial court issued a writ of mandate ordering respondent to set aside its certification of the 1999 EIR and to certify a new EIR consistent with our opinion in *Friends I.* The trial court rejected appellant's request to enjoin any use of the water entitlement. It ruled: "Petitioner [appellant herein] requests that **[*12]** the Court also prohibit respondent from using any of the 41,000 acre feet of additional water allotted to it from the subject State Water Project. Petitioner contends that the said water will be used to approve new development that will not be able to be reversed if a Final Environmental Impact Report is not certified. Respondent contends that such a prohibition would prevent it from meeting the existing water needs in the area it services. *Both contentions appear to be speculative at this time. Respondent will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper.*" (Italics added.)

This appeal follows. n2

> n2 In July 2002, we denied respondent's motion to dismiss the appeal because denial of a *pendente lite* injunction is appealable pursuant to *Code of Civil Procedure section 904.1*, subdivision (a)(6).

[*13] DISCUSSION

A. THE DIRECTIVE IN *FRIENDS I*

Appellant first contends the trial court misconstrued our directive in *Friends I.* Appellant's position is that our decision gave the trial court the power to enjoin either all or part of the project pending certification of a new EIR but that it did not give it the power to decide, as it did in the proceedings it conducted following remand, not to enjoin any part of the project. Appellant relies upon the following language we now italicize from *Friends I*: "Like the court in *PCL, supra, 83 Cal.App.4th at page 926* and footnote 16, we leave to the trial court's discretion whether to enjoin *all or portions* of respondent's project pending completion of an adequate EIR." (*Friends I, supra, 95 Cal.App.4th 1373, 1388,* italics added.) From that language, appellant argues "the Superior Court was not vested with the discretion to issue no injunction, but only with [the] discretion to issue a full or partial injunction."

Appellant's argument lacks merit because it ignores the clear dispositional language of our opinion which gave the trial court the authority to deny in toto **[*14]** a request for injunctive relief.

"Where a reviewing court has remanded a matter to the trial court with directions '. . . the trial court . . . is bound to specifically carry out the instructions of the reviewing court. . . . Any material variance from the explicit directions of the reviewing court is unauthorized and void.'" (*Coffee-Rich, Inc. v. Fielder (1975) 48 Cal. App. 3d 990, 998, 122 Cal. Rptr. 302.)*

The appellate court's directions are determined by "looking first to the dispositional language of the opinion--the language which constitutes the remittitur directions." (*Frankel v. Four Star International, Inc. (1980) 104 Cal. App. 3d 897, 902, 163 Cal. Rptr. 902.) Only if* the dispositional language is ambiguous and in need of interpretation will that language "be interpreted in light of the reasoning and holdings found in the body of the opinion. [Citations.]" (*Lesny Development Co. v. Kendall (1985) 164 Cal. App. 3d 1010, 1021, 210 Cal. Rptr. 890.)*

As set forth earlier, the pertinent portion of the dispositional language in *Friends I* read: "The judgment is reversed. The trial court shall issue a writ of mandate **[*15]** vacating the certification of the EIR, shall retain jurisdiction until respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, *and shall consider such orders it deems appropriate under section 21168.9.*" (*Friends I, supra, 95 Cal.App.4th 1373, 1388,* italics added.) The statutory provision referenced--*Public Resources Code section 21168.9*--is lengthy and set forth in toto below in footnote 3. n3 The definitive construction of that statute

is found in our Supreme Court's opinion in *Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 253 Cal. Rptr. 426, 764 P.2d 278.* It concluded that the statute permits but does not require a court to enjoin a project while a new EIR is prepared. *(Id. at pp. 423-425.)* In deciding whether injunctive relief is appropriate, a court is to rely upon "traditional equitable principles." *(Id. at p. 423.)* Given this long-standing construction of section 21168.9, n4 it is clear our dispositional language granted the trial court the option to decline to grant any injunctive relief **[*16]** after it properly considered the pertinent equities. Appellant's argument that the trial court failed to follow our directions by declining to grant equitable relief is therefore without merit.

n3 **The statute provides:**

"(a) If a court finds, as a result of a trial, hearing, or remand from an appellate court, that any determination, finding, or decision of a public agency has been made without compliance with this division, the court shall enter an order that includes one or more of the following:

"(1) A mandate that the determination, finding, or decision be voided by the public agency, in whole or in part.

"(2) If the court finds that a specific project activity or activities will prejudice the consideration or implementation of particular mitigation measures or alternatives to the project, a mandate that the public agency and any real parties in interest suspend any or all specific project activity or activities, pursuant to the determination, finding, or decision, that could result in an adverse change or alteration to the physical environment, until the public agency has taken any actions that may be necessary to bring the determination, finding, or decision into compliance with this division.

"(3) A mandate that the public agency take specific action as may be necessary to bring the determination, finding, or decision into compliance with this division.

"(b) Any order pursuant to subdivision (a) shall include only those mandates which are necessary to achieve compliance with this division and only those specific project activities in noncompliance with this division. The order shall be made by the issuance of a peremptory writ of mandate specifying what action by the public agency is necessary to comply with this division. However, the order shall be limited to that portion of a determination, finding, or decision or the specific project activity or activities found to be in noncompliance only if a court finds that (1) the portion or specific project activity or activities are severable, (2) severance will not prejudice complete and full compliance with this division, and (3) the court has not found the remainder of the project to be in noncompliance with this division. The trial court shall retain jurisdiction over the public agency's proceedings by way of a return to the peremptory writ until the court has determined that the public agency has complied with this division.

"(c) Nothing in this section authorizes a court to direct any public agency to exercise its discretion in any particular way. Except as expressly provided in this section, nothing in this section is intended to limit the equitable powers of the court."

I

[*17]

n4 See also *City of Santee v. County of San Diego (1989) 214 Cal. App. 3d 1438, 1456, 263 Cal. Rptr. 340* ["Section 21168.9, as construed by the Supreme Court in *Laurel Heights,* merely grants a reviewing court the authority to stay all activity or use of a project until an agency

certifies a proper EIR; it does not require it to do so. [Citation.] The court in *Laurel Heights* relied upon traditional equitable principles in deciding that injunctive relief there was not appropriate."].

!

In any event, appellant engages in a crabbed interpretation of one phrase in our opinion to argue the trial court had no discretion to deny a request for injunctive relief. The sentence in which the phrase is found began with a specific reference to the *PCL* opinion: its dispositional language found at page 926, including footnote 16. That language included the same direction found in our dispositional language: the direction the trial court shall make any such orders it deems appropriate under section 21168.9. Footnote 16 read: "We earlier declined to stay implementation of the **[*18]** Monterey amendments and transfer of the Kern Fan Element. Consequently, the project was permitted to proceed pending disposition of this appeal. The record does not reflect the current status of the project and, in the absence of such information, we shall issue no orders concerning further implementation of the project. The trial court, acting under the authority provided by *Public Resources Code section 21168.9*, is the more appropriate forum to consider and rule upon requests *to enjoin all or portions of the project pending* the completion of administrative and judicial proceedings necessitated by our opinion." (*PCL, supra, 83 Cal.App.4th 892, fn. 16 at p. 926,* italics added.) Just as the *PCL* court did not intend to limit the trial court's authority by requiring it to enjoin at least a portion of the project, neither did we. We, as did the *PCL* court, were simply describing the types of requests that might be made, e.g., requests for a partial or full injunction. We did not intend to divest the trial court of its power to deny a request for injunctive relief if it either concluded that the moving party had failed to establish **[*19]** the predicates for relief or that, given the equities, relief was not required.

B. DENIAL OF INJUNCTIVE RELIEF

Appellant next contends: "The Superior Court's decision regarding injunctive relief was an abuse of discretion, because there is no factual basis to support the decision." (Bold omitted.) We disagree.

A decision to grant or deny a request for injunctive relief rests within the trial court's discretion. Its order will not be reversed on appeal unless an abuse of discretion is shown. It is, of course, the appellant's burden to establish an abuse of discretion. (*Cohen v. Board of Supervisors (1985) 40 Cal.3d 277, 286, 219 Cal. Rptr. 467, 707 P.2d 840.)* "A trial court will be found to have abused its discretion only when it has exceeded the bounds of reason or contravened the uncontradicted evidence. [Citation.]" (*Lubavitch Congregation v. City of Long Beach (1990) 217 Cal. App. 3d 1388, 1391.)*

It was appellant's burden as moving party in the trial court to establish the predicates for injunctive relief. In particular, *Public Resources Code section 21168.9*, subdivision (a)(2) requires the court **[*20]** to first find that a "specific project activity . . . will prejudice the consideration or implementation of particular mitigation measures or alternatives to the project" and that such activities "could result in an adverse change or alteration to the physical environment" before an injunction will issue. The trial court found appellant's claim of irreparable harm--new permanent water connections that will not be able to be reversed--to be speculative. In other words, it concluded appellant had failed to discharge its burden of proof. n5 However, it specifically left open the opportunity for appellant to renew its claim "based upon evidence of the actual use of such additional water for purposes it considers improper."

n5 To a certain extent, appellant relies upon four documents not presented to the trial court to support its contention of abuse of discretion. Three of those documents were prepared after the trial court entered judgment in October 2002. Each document is a portion of a report prepared for respondent. Prior to the submission of briefing, we granted appellant's request to take judicial notice of these documents.

Appellant wants to use this information to show respondent is improperly representing to third parties it is entitled to the 41,000 acre-feet per year of water. Appellant argues this is proof of the irreparable harm it is suffering because the trial court declined to enjoin respondent.

Our prior grant of appellant's motion for judicial notice does not require us to consider these documents. "Although a reviewing court may take judicial notice of matters not before the trial court, . . . the reviewing court need not give effect to such evidence. 'Having taken judicial notice of such a matter, the reviewing court may or may not apply it in the particular case on appeal. The effect to be given to matters judicially noticed on appeal, where the question has not been raised below, depends on factors that are not evidentiary in character.' [Citation.]" (*Doers v. Golden Gate Bridge etc. Dist. (1979) 23 Cal.3d 180, 184, fn. 1, 151 Cal. Rptr. 837, 588 P.2d 1261.)*

In this instance, given that (1) these documents essentially constitute "new evidence" in support of appellant's request for injunctive relief and (2) the trial court explicitly anticipated appellant would renew its request before it, we decline to consider the documents on this appeal.

If appellant wishes to renew a request for injunctive relief, it can bring these documents to the trial court's attention.

J

[*21]

Distilled to its essence, appellant's present position is nothing more than an argument the trial court was required to credit the allegations in its counsel's declaration which allegedly supported its request for injunctive relief. That is, appellant would have us find that no reasonable judge could have found its evidentiary showing insufficient. We cannot make that finding.

The evidence on this issue was conflicting. As set forth above, Masnada's declaration directly contradicted some of the allegations made by appellant's counsel. Given the (purported) deficiencies Masnada pointed out in counsel's declaration, the fact that much of counsel's declaration was based upon information and belief, and appellant's failure to file a reply declaration addressing those points with its reply memorandum, the trial court was well within its discretion to conclude that *at that point in time* appellant had failed to make the requisite showing.

Appellant argues such a conclusion is insupportable because the trial court also found respondent's trial court contention to be speculative. Not so. Appellant is conflating two distinct points respondent made in the trial court. First, based upon **[*22]** a claim of irreparable harm, respondent had affirmatively sought an order that the transfer of entitlement remain in effect until the new EIR was completed. Second, respondent refuted the factual allegations about its water sources contained in the declaration executed by appellant's counsel. The trial court's finding of speculation was directed at the first point: respondent's claim it would suffer irreparable harm if the trial court denied its request for an order that the transfer remain in effect until the EIR was completed. The finding of speculation was not directed at the second point: respondent's discrete refutations of appellant's allegations. The trial court could reasonably find respondent had failed to meet its burden to establish the predicate for the relief it sought but could also reasonably find that the portions of Masnada's declaration set forth above were sufficient to show appellant's claim for relief was likewise subject to serious question and therefore grounded in speculation. We therefore reject appellant's claim that "respondent's entire argument that there was no abuse of discretion is incorrectly based on evidence that the lower court determined was mere **[*23]** speculation, not fact." n6 (Fn. omitted.)

n6 Appellant cites to various comments the court made as well as questions it posed during the hearing as proof that the court grounded its decision either in facts unsupported by the evidence or on legal principles inapplicable to the case. This approach is in error. A contextual reading of the transcript of the hearing indicates the court's questions and comments were intended to gather information, to focus the parties' arguments, and to test the strength of the parties' respective positions. The "bottom line" is whether the trial court abused its discretion in finding appellant had failed to discharge its burden to establish the predicates for injunctive relief. As explained above, the court did not so abuse its discretion.

Lastly, we address an argument raised in the amici brief jointly filed by the Planning and Conservation League and the Citizens Planning Association of Santa Barbara County, Inc. in support of appellant. Amici are two of the environmental organizations **[*24]** that were the prevailing parties in *PCL, supra, 83 Cal.App.4th 892.* Amici first inform us that in May 2003--seven months after the trial court entered judgment in this matter--the superior court in Sacramento approved a settlement agreement entered into by the parties in the *PCL* case. Pursuant to that agreement, work has commenced on a new EIR in regard to the Monterey Agreement and related issues. The settlement agreement recognizes that the transfer underlying this lawsuit is "'subject to pending litigation in the Los Angeles Superior Court following remand from the Second District Court of Appeal'"; that "'jurisdiction with respect to that litigation should remain in the [Los Angeles Superior Court]'"; and that "'nothing in this settlement agreement is intended to predispose the remedies or other actions that may occur in that pending litigation.'"

Amici argue the trial court abused its discretion in denying appellant's request for injunctive relief because the court ignored "the specific directions of *Friends I*" that its determination on interim relief should be based upon the status of the *PCL* litigation and the new statewide EIR to be prepared **[*25]** for the Monterey Agreement. n7 As support for that proposition, Amici cites us to the last two paragraphs of our opinion in

Friends I. There, after concluding that other than the *PCL*/tiering issue all of appellant's complaints about the EIR were meritless, we wrote: "This suggests that respondent may be able to cure the *PCL* problem by awaiting action by the DWR complying with the *PCL* decision, then issuing a subsequent EIR, supplement to EIR, or addendum to EIR [citations] tiering upon a newly certified Monterey Agreement EIR. Appellant itself so suggests. [P] Like the court in *PCL, supra, 83 Cal.App.4th at page 926* and footnote 16, we leave to the trial court's discretion whether to enjoin all or portions of respondent's project pending completion of an adequate EIR. The trial court is in a better position than this court to determine factually the current status of the *PCL* litigation or of a new Monterey Agreement EIR." (*Friends I, supra, 95 Cal.App.4th 1373, 1387-1388.)*

n7 Appellant raised this point in the trial court and its opening brief.

[*26]

Amici misapprehend our directions to the trial court. As explained above, those directions are found in the dispositional language of our opinion. That language directed the trial court, inter alia, to "consider such orders it deems appropriate under [*Public Resources Code] section 21168.9*." (*Ibid.*) That section grants the trial court broad powers to fashion equitable relief. (See fn. 3, *ante*, and accompanying text at pp. 10-12.) Amici's argument that the exercise of said discretion was to be based upon the status of either the *PCL* litigation or the new EIR for the Monterey Agreement is at odds with the clear dispositional language we employed. The two paragraphs in our opinion upon which amici rely were merely suggestions as to how respondent could proceed and a statement that in exercising its discretion whether to grant equitable relief pending completion of a new EIR for this project, the trial court could ascertain, and if it so chose, rely upon the status of the *PCL* litigation and new Monterey Agreement EIR.

In any event, the parties' papers in the trial court informed it of what was then the current status of both the *PCL* **[*27]** litigation and the new Monterey Agreement EIR and the issue was discussed at the hearing. Nothing in the record suggests the court did not consider those facts in rendering its decision, a decision that was properly framed by the specific prayers for relief each party advanced in the trial court. To a large extent, amici's position is nothing more than an attempt to reargue the motion and to do so based upon events that occurred after judgment was rendered. Because the *PCL* litigation settled *after* the trial court entered its judgment, that settlement and the status of the preparation of the new Monterey Agreement EIR are matters that can be brought to the attention of the trial court if appellant seeks to renew its request for injunctive relief. Lastly, in order to forestall any unnecessary future litigation, we hasten to add that nothing stated in this opinion is to be construed to be an indication as to how the trial court should rule in any further proceeding(s) on any specific issue(s).

DISPOSITION

The judgment is affirmed.

VOGEL (C.S.), P.J.

We concur:

HASTINGS, J.

CURRY, J.

RESOLUTION NO. 2354

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CASTAIC LAKE WATER AGENCY: (1) CERTIFYING THE FINAL ENVIRONMENTAL IMPACT REPORT FOR A SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT; (2) ADOPTING FINDINGS, A MITIGATION MONITORING PROGRAM AND A STATEMENT OF OVERRIDING CONSIDERATIONS; AND (3) APPROVING THE PROJECT

WHEREAS, the Castaic Lake Water Agency ("CLWA") was formed and established by the California State Legislature in 1962 for the principal purpose of providing imported Northern California water for use within and adjacent to the Santa Clarita Valley; and

WHEREAS, CLWA has adopted the following mission statement: "A public agency providing reliable, quality water at a reasonable cost to the Santa Clarita Valley."

WHEREAS, CLWA, a State Water Project ("SWP") contractor, entered into a Water Supply Contract with the California Department of Water Resources ("DWR") in 1963, which contract continues as currently amended; and

WHEREAS, CLWA in April 1988 certified a programmatic environmental impact report for its capital program to provide water and related capital infrastructure for the Santa Clarita Valley through the year 2010, pursuant to then adopted planning horizons under the general plans of the planning agencies within CLWA's service area; and

WHEREAS, since completion of that 1988 CLWA capital program environmental impact report by CLWA, the applicable planning agencies have not increased the projected year 2010 population above the 270,000 persons set forth in that report for the end of the year 2010 general planning period; and

WHEREAS, in 1995, the Monterey Agreement principles were implemented through an amendment to the Water Supply Contracts between the California Department of Water Resources ("DWR") and the State Water Project ("SWP") contractors, to become effective in August 1996, which amendment became known as the "Monterey Amendment"; and

WHEREAS, in addition to statutory and other policies of the State of California, the Monterey Amendment promotes water transfers to facilitate the beneficial use of water throughout the State, including transfers from agricultural to urban water agencies in the amount of 130,000 acre feet; and

WHEREAS, in 1995, a program Environmental Impact Report analyzing the environmental impacts of the Monterey Amendment ("Monterey Amendment Program EIR") was certified; and

WHEREAS, on March 29, 1999, CLWA certified a prior Environmental Impact Report to consider a project involving the proposed transfer of 41,000 acre feet of SWP Table A Amount from Kern County Water Agency ("KCWA"), and specifically from the Wheeler Ridge-Maricopa Water Storage District ("WRMWSD") within KCWA, to CLWA; and

WHEREAS, in 2000, the California Court of Appeal, Third Appellate District reversed the Sacramento County Superior Court in *Planning & Conservation League v. Department of Water Resources* ("*PCL*," Sacramento County Superior Court Case No. 95CS03216) and found that DWR must prepare a new Monterey EIR; and

WHEREAS, in 2002 the California Court of Appeal, Second Appellate District, Fourth Division, and the Los Angeles County Superior Court in *Friends of the Santa Clara River v. Castaic Lake Water Agency* ("*Friends*," Los Angeles Superior Court Case No. BS056954) ordered CLWA to decertify its prior Environmental Impact Report for its project, based solely on a finding that the prior CLWA Environmental Impact Report had tiered from the Monterey Amendment Program EIR, which had been decertified while *Friends* was on appeal, and ordered that the Los Angeles County Superior Court was to retain jurisdiction until CLWA certified a new Environmental Impact Report complying with CEQA; and

WHEREAS, the CLWA Board of Directors decertified CLWA's prior Environmental Impact Report for its project on November 27, 2002; and

WHEREAS, the Sacramento County Superior Court in *PCL* approved a May 5, 2003 Settlement Agreement ("Monterey Amendment Settlement Agreement"), executed by CLWA and other SWP contractors, which provides that the Monterey Amendment remains in operation during the preparation of a new environmental impact report for the Monterey Amendment and further provides that the Los Angeles County Superior Court in *Friends* has exclusive jurisdiction over the litigation in *Friends* and states "that nothing in this Settlement Agreement is intended to predispose the remedies or other action that may occur in [the *Friends*] pending litigation" ; and

WHEREAS, in January 2003, CLWA issued a Notice of Preparation of a Draft Environmental Impact Report ("EIR") for a "Project," described therein as the transfer of 41,000 acre feet of SWP Table A amount from KCWA, and its member district WRMWSD, to CLWA through existing SWP facilities, and SWP contractual rights to use that water;

WHEREAS, CLWA in June 2004, by and through Science Applications International Corporation ("SAIC"), prepared and circulated a new Draft Project EIR (State

Clearinghouse No. 1998041127) to comply with the order of the Los Angeles County Superior Court in *Friends*; and

WHEREAS, the EIR considers environmental impacts of the Project based on pre-Monterey Amendment conditions, both with and without implementation of Article 18 (b) of the Water Supply Contracts, and post-Monterey Amendment conditions; and

WHEREAS, the EIR only tiers off CLWA's 1988 capital program EIR and does not tier off the prior 1995 Monterey Amendment Program EIR or any other EIR; and

WHEREAS, the EIR does not rely upon CLWA's 2000 Urban Water Management Plan; and

WHEREAS, the EIR considers environmental impacts of the Project to both the service areas of CLWA and WRMWSD, including indirect impacts within CLWA, and to affected portions of the SWP; and

WHEREAS, WRMWSD does not require the 41,000 acre-feet Table A Amount transferred for its internal needs, has rising groundwater levels, and can acquire additional supplemental water, if needed, at less expense than fixed SWP costs for the Project transferred Table A Amount;

WHEREAS, the EIR uses DWR statistical computer models to determine the portion of the 41,000 acre-feet Table A amount reliably available to analyze Project environmental impacts, consistent with the Monterey Amendment Settlement Agreement provisions applicable to the new Monterey Amendment EIR;

WHEREAS, the EIR considers and analyzes multiple Project alternatives; and

WHEREAS, CLWA gave notice of the Draft EIR in compliance with law and circulated the Draft EIR to interested persons for a 60-day public comment period commencing on June 16, 2004 and ending on August 16, 2004; and

WHEREAS, CLWA held a public hearing on July 28, 2004, to receive comments on the Draft EIR; and

WHEREAS, CLWA received public comments on the Draft EIR during the comment period; and

WHEREAS, on November 24, 2004, CLWA, by and through its staff, legal counsel and SAIC, prepared and circulated to the CLWA Board of Directors ("Board") and to those submitting comments a proposed two volume "Final EIR", Volume One consisting of the Draft EIR, and Volume Two consisting of comments, responses to comments and insignificant and non-substantive changes to the text of the Draft EIR; and

WHEREAS, on November 24, 2004, at least 10 days before certification of the Final EIR, CLWA provided all public agencies that commented on the Draft EIR with a written public response to their comments and notice of a public hearing to be held on December 8, 2004;

WHEREAS, on December 8, 2004, CLWA held an additional noticed public hearing on the Project to receive statements on the responses to comments as part of CLWA's decisional process concerning the Project; and

WHEREAS, pursuant to Public Resources Code section 21092.5, the December 8, 2004 public hearing did not constitute an extension of the public comment period, and no responses are required under that section to statements made at that hearing because the hearing was scheduled after the close of the public comment period; and

WHEREAS, on December 8, 2004, CLWA's Board deferred until December 22, 2004 all consideration related to certification of the proposed Final EIR and approval of the Project; and

WHEREAS, CLWA's Board, on December 22, 2004, pursuant to the publicly noticed agenda for its regularly scheduled public meeting, with SAIC and CLWA staff and legal counsel present, met to consider certification of the proposed Final EIR, adoption of findings, a statement of overriding considerations and a mitigation and monitoring program, and approval of the Project; and

WHEREAS, CLWA's Board has carefully, thoroughly and independently reviewed the proposed Final EIR, including all public comments and responses thereto; and

WHEREAS, CLWA's Board has considered all of the information presented to it as set forth above and this Resolution and action taken hereby is a result of the Board's independent judgment and analysis.

NOW, THEREFORE, BE IT RESOLVED by this Board of Directors of the Castaic Lake Water Agency that it hereby makes the following findings and determinations:

1. The Board certifies that the Final EIR, attached as Exhibit "A": (a) was presented to the Board and that the Board reviewed and considered the information contained therein prior to approving the Project; (b) reflects the Board's independent judgment and analysis; (c) has been completed consistent with CEQA; and (d) shall constitute the final EIR for the Project;

2. The Board adopts the Findings, attached as Exhibit "B," and determines that the record for the Project contains substantial evidence in support of those Findings.

3. The Board adopts the Statement of Overriding Considerations, attached as Exhibit "C," and determines that the record for the Project contains substantial evidence in support of the Statement.

4. The Board adopts the Mitigation and Monitoring Program, attached as Exhibit "D."

5. The Board approves the Project as being in the best interests of CLWA and the public by augmenting and firming up water supplies, and by facilitating the beneficial use of water throughout the State.

6. The Board directs CLWA's General Manager to execute all documents required to carry out and implement the Project and to cause to be filed a Notice of Determination of CLWA's approval of the Project.

7. The Board designates its Secretary, Marcia Ward, as Custodian of the record of the proceedings upon which its decision is based and specifies the location of that record as CLWA's administrative offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350

EXHIBIT "A"

FINAL EIR
(Attached hereto)

EXHIBIT "B"

FINDINGS
(Attached hereto)

EXHIBIT "C"

STATEMENT OF OVERRIDING CONSIDERATIONS
(Attached hereto)

EXHIBIT "D"

MITIGATION AND MONITORING PROGRAM
(Attached hereto)

I, the undersigned, hereby certify: That I am the duly appointed and acting Secretary of the Castaic Lake Water Agency, and that at a regular meeting of the Board of Directors of said Agency held on Wednesday December 22, 2004, the foregoing Resolution No. 2354 was duly and regularly adopted by said Board, and that said resolution has not been rescinded or amended since the date of its adoption, and that it is now in full force and effect.

DATED: December 22, 2004

Marcia Ward
Marcia Ward, Secretary

EXHIBIT "B"

FINDINGS

FINAL ENVIRONMENTAL IMPACT REPORT

GENERAL CEQA FINDINGS

A. No significant direct impacts will occur as a result of the Project in any of the three geographic areas evaluated in the Final EIR. The additional water supply provided by the Project, however, will remove an obstacle to growth within the CLWA service area, and significant, indirect, growth-related impacts to all environmental resources within that service area could result from Project implementation.

B. Concern has been expressed by some members of the public that the potential long term effect of global warming upon the SWP water supplies could result in less water being delivered to CLWA under the Project than the supply figures used in the EIR. CLWA has considered this issue carefully and has concluded that, if SWP water supplies were reduced, in the long term, due to global warming or any other cause, the result would be that the worst case analysis in the EIR for the indirect, growth-related impacts of the Project are over-stated to some degree. In that event, the actual indirect, growth-related impacts of the Project upon environmental resources would be less than those analyzed in the EIR and would be included within the range of potential impacts projected by the EIR.

C. During the public comment period, members of the public expressed their belief that the Final EIR should not (or, as some assert, could not) be certified until after the Department of Water Resources (DWR) certifies a new Environmental Impact Report for the Monterey Amendment. CLWA has considered these comments and the Master Response to Comments incorporated into the Final EIR. CLWA is satisfied that the Master Response to these comments adequately addresses the position stated by the commenters for the following reasons:

1. The litigation pertaining to the Monterey Amendment Program EIR originated in Sacramento County Superior Court and DWR's new Environmental Impact Report for the Monterey Amendment is being prepared under the jurisdiction and supervision of that Court. The litigation that gave rise to the preparation of the Project EIR arose in the Los Angeles County Superior Court and this Final EIR is being prepared under the jurisdiction and supervision of that same Court. The Sacramento Superior Court has no jurisdiction over the Project Final EIR.

2. CLWA is not required to await preparation of DWR's new Monterey Amendment Environmental Impact Report or tier off that document. CEQA does not require a lead agency for a project to await preparation of a programmatic Environmental Impact Report where the lead agency has sufficient information upon which to base environmental analysis of a specific project that may be included in the programmatic Environmental Impact Report's analysis at some future date.

3. The Court of Appeal in the litigation pertaining to the original EIR for the project did not require CLWA to prepare a new EIR that tiers off, or awaits certification, of DWR's new Monterey Amendment Environmental Impact Report.. Rather, CLWA is under the supervision of the Los Angeles Superior Court in preparing the Project EIR.

4. The Court of Appeal in the challenge to the Monterey Amendment Program Environmental Impact Report (Monterey Amendment Program EIR Challenge), on Page 3 of its Order approving the Monterey Amendment Settlement Agreement, stated that, "until DWR files its return in compliance with the Peremptory Writ of Mandate and this Court orders discharge of the Writ of Mandate, the administration and operation of the State Water Project and the Kern Water Bank Lands shall be conducted pursuant to the Monterey Amendments to the State Water Contracts . . . and the other terms and conditions of the Settlement Agreement."

D. During the public comment period, members of the public expressed their belief that CLWA was not the proper lead agency for preparation of the Project EIR. CLWA has considered this comment, as well as the Master Response to Comments, and concludes that CLWA must be the lead agency for the preparation of the Project EIR for the following reasons:

1. Under the doctrine of the law of the case, CLWA is the proper lead agency for the Project EIR. The Court of Appeal found no substantive defect in CLWA's prior Environmental Impact Report, only a legal defect resulting from tiering off the Monterey Amendment Program Environmental Impact Report that, subsequent to certification of the prior project Environmental Impact Report, was ordered de-certified.

2. The Court of Appeal ordered CLWA to act as the lead agency when it stated: "The trial court shall . . . retain jurisdiction until respondent certifies an EIR complying with CEQA . . . ."

3. CLWA has principal responsibility to approve and carry out the Project. Under CEQA, the agency with this primary responsibility must be the lead agency, even though part of the project may be located and have impacts within the jurisdiction of another public agency.

4. Under Public Resources section 21152, CLWA must be the lead agency because it is the local agency undertaking the Project. CLWA is the major proponent of the Project and has assumed the primary task of implementing the SWP water supply contract amendment for the Project.

5. CLWA must be the lead agency because it cannot delegate its responsibility over its SWP contract rights to another body. CLWA has primary responsibility for purchasing, obtaining delivery of, arranging storage of, and using the SWP water provided under the contract amendment that is the Project.

6. Some commenters have applied the Court of Appeal's decision in *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 (Monterey Amendment Program EIR Challenge) to the preparation of the Project EIR, arguing that CLWA is an improper lead agency for the Project EIR because the Court of Appeal found DWR to be the only proper lead agency for the Monterey Amendment Program Environmental Impact Report. There is an important distinction between the Environmental Impact Report at issue in the Monterey Amendment Program EIR Challenge and the Project EIR – the Monterey Amendment Program Environmental Impact Report analyzed the impacts of major amendments to all SWP contracts, the conveyance of state-owned property, and changes in the operation of the SWP project that had statewide impacts. The Court of Appeal determined that for a project of that magnitude, DWR was the only suitable lead agency. The subject Project is significantly different from the Monterey Amendment. The subject Project is a simple transfer of Table A Amount from one SWP contractor to another. It has no statewide impacts; its impacts are site specific to the transferor and the transferee with some minimal impacts on SWP facilities.

E. Some members of the public who have commented on the Project EIR have suggested that the Monterey Amendment Settlement Agreement precludes CLWA from proceeding with the Project EIR and with the Project. CLWA disagrees. The Monterey Amendment Settlement Agreement states on Page 12: "The Parties [to the settlement agreement] agree that jurisdiction with

respect to that litigation [*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373] should remain with that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." The new Monterey Amendment Environmental Impact Report will include the Project water transfer in its larger evaluation of the environmental impacts of all permanent Table A Amount transfers described in the Monterey Amendment.

F. Comments on the EIR included references to "paper water," an issue of concern to the Court of Appeal in the Monterey Amendment Program EIR Challenge. The "paper water" issue is not relevant to the Project because the Project is intended to firm up and supplement existing CLWA water supplies. CLWA uses DWR's supply reliability figures in projecting how much water the Project has the capability of yielding for CLWA customers. If the actual SWP water deliveries are less than DWR's reliability figures project, the growth-related impacts of the Project, analyzed in the EIR, will be less than anticipated. To stabilize its future supplies, CLWA banks water for future use in times of shortage. Finally, the Project EIR cautions planners and developers that historical SWP water delivery rates are no guaranty of future delivery rates. Many factors can affect the amount and reliability of water supplies. The Project EIR acknowledges this but conducts a "worst case" analysis of growth-related impacts based upon historical deliveries.

G. The Project EIR uses two baseline conditions to perform the environmental impact analysis because there have been two Notices of Preparation for the Project (one for the de-certified Environmental Impact Report and one for the present EIR) and because the water transfer analyzed in the Project EIR has occurred and CLWA has been operating with the Project in place since certification of the original Environmental Impact Report. The use of two baselines enabled CLWA to compare the pre-Project condition with the current condition (with the Project in operation) and the current condition with the condition existing immediately prior to preparation of the current EIR. In this way, the broadest range of potential impacts was addressed.

H. The current EIR also addresses potential Project impacts with and without the implementation of the Monterey Amendment, thereby providing to the decision makers and the public a broad range of environmental impact analysis and responding to the Court of Appeal's order that the Monterey Amendment Program Environmental Impact Report be de-certified. In short, the Project EIR does not tier off any other Environmental Impact Report other than the 1988 Capital Program Environmental Impact Report. The Project EIR is a stand-alone document with regard to the Monterey Amendment.

I. CLWA has worked closely with DWR in the preparation of the Project EIR to ensure that the facts, assumptions and analysis included in the Project EIR are accurate, to utilize DWR models, to coordinate the analysis in the Project EIR

with the analysis that DWR is undertaking in its preparation of the new Monterey Amendment Environmental Impact Report, and to avoid inconsistencies between the Project EIR and the new Monterey Amendment Environmental Impact Report. DWR's comments on the contents of the Project EIR have been positive and have confirmed that completion of the Project EIR will not prejudice DWR's completion of its new Monterey Amendment Environmental Impact Report.

J. During preparation of the Project EIR, the Urban Water Management Plan for CLWA's service area was declared to be invalid. Although CLWA is in the process of updating the Urban Water Management Plan, the update process will take considerable time and effort; it cannot be completed prior to certification of the Project EIR. The Project EIR does not rely upon CLWA's 2000 Urban Water Management Plan, so the invalidation of that Plan has no impact on CLWA's consideration of the environmental analysis included in the Project EIR.

K. Some commenters to the Draft Project EIR raised issues concerning CLWA's use of DWR modeling programs to project the amount of water that CLWA might expect to be delivered from the Project. CLWA used the information yielded by DWR's models to project indirect impacts of the Project related to growth and to identify and analyze cumulative impacts of the Project. CLWA used DWR statistical computer models to determine the portion of the 41,000 acre feet Table A Amount reliably available to analyze Project environmental impacts for two (2) reasons: (1) use of DWR modeling is consistent with the Monterey Settlement Agreement provisions applicable to the new Monterey Amendment Environmental Impact Report; and (2) DWR has greater resources and experience than CLWA in formulating SWP reliability models, so CLWA considered DWR's modeling programs to be superior to any that CLWA could economically and efficiently formulate for the Project.

L. Concern was expressed during the public comment period that the existing SWP facilities were insufficient to transport the Project water deliveries to CLWA and would cause potential conflicts with delivery demands by Metropolitan Water District. Although Metropolitan Water District has substantial demand for SWP water (and the largest Table A Amount among urban SWP contractors), the majority of SWP deliveries to Metropolitan Water District proceed through the East Branch of the California Aqueduct, not the West Branch through which CLWA receives its deliveries. The West Branch has more than adequate capacity to accommodate water deliveries from the Project and has been doing so since 1999, when the Project first was implemented.

M. Members of the public have opined that the Project will result in potentially significant impacts on agricultural lands in WRMWSD. CLWA staff and the EIR writers conducted extensive research and analysis, working closely with

WRMWSD staff, to describe how WRMWSD and its customers propose to offset their transfer of expensive SWP water with alternative, less expensive sources. The result is the determination that no fallowing of productive agricultural lands will occur as a result of the Project. The fallowing that will occur will be part of routine agricultural practices, as has occurred in the past. WRMWSD and its customers have several sources of water supply available that they propose to use in lieu of the Project water, including but not limited to groundwater (groundwater levels have been increasing steadily in WRMWSD's service area), groundwater banking, and surplus water. In short, WRMWSD has assured CLWA that the Project water is an expensive source that can be replaced with more economical water, thereby ensuring long term agricultural viability.

PROJECT SPECIFIC CEQA FINDINGS

A. Findings Concerning Indirect and Cumulative Impacts of the Project -- Aesthetic/Visual Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential aesthetic changes could occur within the CLWA service area as an indirect growth-related and cumulative significant impact of the Project, including changes to the visual characteristics of the area through the development of open space and further urbanization of hillside and natural areas. Scenic vistas could be impacted, glare from night lighting could increase, and a "confused urban image" could result from potential haphazard development. This impact is identified in the Final EIR, Vol. I, pages 4-3 and 6-41.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the draft EIR. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, depending upon the magnitude, location, and design of future development, the impact may not be mitigable to less than significant, as stated on pages 4-3 and 6-41 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by the applicable land use agencies, will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction; and that those land use agencies can and should implement those measures. This impact is overridden by benefits of the proposed Project, as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

B. <u>Findings Concerning Indirect and Cumulative Impacts of the Project -- Agricultural Resources</u>

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which the information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential conversion of agriculture lands to non-agricultural uses or changes in agricultural zoning by local jurisdictions to allow a higher density or intensity of development could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-7, 4-8 and 6-42.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles and the County of Ventura, both of which are required by law to comply with CEQA. The County of Los Angeles and the County of Ventura could reduce this impact to less than significant by implementing their existing General and Area Plan policies, including those of the Piru Area Plan, identified at Table 4.2-1 of the Final EIR, Vol. I, since these plans contain measures to preserve and protect agricultural land, as noted on pages 4-8 and 6-42 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction; and that those land use agencies can and should implement those measures.

C. Findings Concerning Indirect and Cumulative Impacts of the Project -- Air Quality

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about

new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential air quality changes could occur within the CLWA service area as an indirect growth related and cumulatively significant impact of the Project, including increased air pollutant emissions for which the South Coast Air Basin does not currently meet federal or state standards, toxic emissions from industrial development, increased vehicle mobile emissions, and fugitive dust emissions from construction. This impact is identified in the Final EIR, Vol. I, pages 4-8 and 6-42.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, depending on the magnitude of future development, the impact may not be fully mitigable to less than significant, as stated on pages 4-8 and 6-42 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by those land use agencies will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

D. Findings Concerning Indirect and Cumulative Impacts of the Project -- Biological Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval

process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential changes to biological resources could occur with the CLWA service area as an indirect growth related and cumulative significant impact of the Project, including loss, degradation, or fragmentation of habitats, which may result in local native plant and wildlife populations, including sensitive species being reduced in size and made vulnerable to local extinction. Additionally, non-native species could compete with native species, and established wildlife corridors and nurseries could be disrupted. Pollutant levels could increase and cause harm to sensitive habitat and species. This impact is identified in the Final EIR, Vol. I, pages 4-9, 6-42 and 6-43.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. Also other regulatory agencies such as the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game may impose permit conditions that reduce any significant impact. However, depending on the magnitude of future development, the impact may not be fully mitigable to less than significant, as stated on pages 4-9 and 6-43 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by those land use and regulatory agencies will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies and regulatory agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

E. Findings Concerning Indirect and Cumulative Impacts of the Project -- Cultural Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential disturbance of human remains, archaeological, historical, and paleontological resources by excavation and grading activities associated with future development could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-9, 4-10 and 6-43.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain measures for either avoiding impacts to such resources or providing adequate documentation of the resources, as noted on pages 4-10 and 6-43 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's

responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

F. Findings Concerning Indirect and Cumulative Impacts of the Project--Geology and Soils

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential geologic hazards could occur within CLWA as an indirect growth related and cumulative significant impact of the Project, including fault rupture, seismically induced ground failure, and seiches, as well as permanent changes in topography, loss of topsoil and removal of unique geologic features. This impact is identified in the Final EIR, Vol. I, pages 4-10, 4-11, 6-43 and 6-44.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measure to avoid or reduce such impact, as noted on pages 4-11 and 6-44 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to

a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

G. Findings Concerning Indirect and Cumulative Impacts of the Project -- Hazards and Hazardous Materials

1. Facts.

a. With regard to direct impacts, CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" to address CLWA's handling, storing, and using hazardous materials in water treatment according to all state and federal regulations. This Project will not result in any new construction related to water treatment, including no expansion of any currently existing treatment facilities, nor will it result in any other direct significant impacts. In April 2003, CLWA certified the Final EIR for expansion and upgrade of the Earl Schmidt Filtration Plant (ESRP), which fully evaluated and addressed the issues of hazards and hazardous materials associated with the increase in raw water treatment resulting from growth, including any need for mitigation. Consequently, CLWA need not adopt a separate mitigation and monitoring program for purposes of ensuring that when engaged in water treatment, CLWA handles, stores and uses hazardous materials according to state and federal regulations.

b. With regard to indirect impacts, CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

c. A potential increase in hazards and hazardous materials could occur within CLWA as an indirect growth related and cumulative significant impact of the Project, including required removal or remediation of contaminated soils, increase in the use, transport and disposal of hazardous materials, impairment of emergency response or evacuation plans, and increased exposure to wildland fires. This impact is identified in the Final EIR, Vol. I, pages 4-11, 6-44 and 6-45.

d. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as noted on pages 4-11, 4-12 and 6-45 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

H. Findings Concerning Indirect and Cumulative Impacts of the Project -- Land Use and Planning

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential division of a community, building in sensitive areas such as hillside management areas, open space areas and sensitive wildlife habitat areas, or conflict with adopted land use plans could occur within CLWA as an indirect growth

related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-12 and 6-45.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified in Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as noted on pages 4-12 and 6-45 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

I. Findings Concerning Indirect and Cumulative Impacts of the Project -- Population and Housing

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. A potential increase of 106,700 persons and 35,600 housing units could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-13 and 6-45.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as noted on pages 4-13 and 6-45 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA,

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

J. Findings Concerning Indirect and Cumulative Impacts of the Project -- Public Services

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. A potential increased demand for police and fire services, including staffing, facilities and equipment, decreased response times and fire flows, and construction of new schools and libraries could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-13, 4-14 and 6-46.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as stated on pages 4-14 and 6-46 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

K. Findings Concerning Indirect and Cumulative Impacts of the Project -- Recreational Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about

new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential increased demand for recreational resources, such as parks and trails and other recreation areas, could occur within CLWA as an indirect growth related and cumulative significant impact of the Project, exacerbating existing shortfalls in local parkland that may outpace the ability of public agencies to provide these resources. This impact is identified in the Final EIR, Vol. I, pages 4-14, 6-46 and 6-47.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by utilizing the Quimby Act and by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measure to avoid or reduce such impact, as noted on pages 4-14, 4-15 and 6-47 of the Final EIR, Vol. I. The Quimby Act (Gov. Code § 66477), as part of the Subdivision Map Act, gives a city or county the authority to impose as a condition to subdivision map approval the dedication of land, the payment of fees, or a combination of both for park and recreational purposes to accommodate the increased burden on recreational facilities as a result of the population projected to inhabit the subdivision. Specific mechanisms for implementing the referenced General and Area Plan policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

L. Findings Concerning Indirect and Cumulative Impacts of the Project -- Transportation and Circulation

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development

projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential increases in traffic, deterioration in the level of service, the need for new or altered roads, highways, parking facilities and transportation systems, and the alteration of present patterns of circulation could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-15 and 6-47.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, due to the delay between the time improvements are needed and the time they can be provided, the impact may not be fully mitigable to less than significant, as stated on pages 4-15 and 6-47 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by those land use agencies will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

M. Findings Concerning Indirect and Cumulative Impacts of the Project -- Utilities and Service Systems

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential increased demand for solid waste disposal services, and potential increased need for potable water treatment facilities could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-16, 4-17, 6-47 and 6-48.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, because impacts to solid waste disposal may not be avoidable unless additional landfill capacity is approved and constructed, the impact may not be fully mitigable to less than significant, as stated on pages 4-17 and 6-48 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable as to solid waste disposal; the measures referenced above, if implemented successfully by those land use agencies will substantially reduce this impact, but not to a level of insignificance for solid waste disposal. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

N. Findings Concerning Indirect and Cumulative Impacts of the Project -- Water Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential changes to water resources could occur within the CLWA service area as an indirect growth related and cumulative significant impact of the Project. Increased demand on local groundwater resources during periods of reduced SWP deliveries could result in substantial depletions on a short-term basis in dry hydrologic years. The impermeable surface areas resulting from development could result in alteration of surface flows, reduction of aquifer recharge and increased amount and rate of stormwater runoff, increased flooding and peak flow rates that could result in substantial erosion or siltation. This impact is identified in the Final EIR, Vol. I, pages 4-17, 4-18, 6-48 and 6-49.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by [complying with insert the applicable statutes re water supply for new projects] and by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, as noted on pages 4-18 and 6-49 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. Additionally, compliance with the LARWQCB Water Quality Control Plan [Basin Plan] for the Coastal Watersheds of Los Angeles and Ventura Counties, as amended, also would reduce significant and less than significant impacts.

2. **Findings.**

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

O. **Findings Concerning Cumulative Impacts of the Project upon Air Quality Associated with SWP and Associated Facilities**

1. **Facts.**

a. The Project's direct impact to air quality, although less than significant, would contribute to the significant air quality impacts from the CALFED project and the San Luis Reservoir Low Point Project. This cumulative impact is identified in the Final EIR, Vol. I, page 6-40.

b. The CALFED agencies could substantially reduce this cumulative impact by implementing CALFED program mitigation measures listed on page 6-40 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. Although an EIR has not yet been published for the San Luis Low Point Improvement Project, based on a preliminary analysis of the impacts, similar measures to those listed for the CALFED project could be implemented to reduce significant impacts.

2. **Findings.**

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by CALFED agencies and/or by agencies within the CALFED program will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those agencies, not within CLWA's responsibility or jurisdiction, and that those use agencies can and should implement those measures.

P. **Findings Concerning Alternatives to the Project.**

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, it must discuss alternatives to the project that would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

1. **Facts.**

a. Alternative 1, No Project. Under the No Project Alternative, CLWA would not acquire the additional Table A Amount or acquire the associated contractual rights for delivery of water associated with the transfer. The demand for high quality surface water is expected to increase throughout all of southern California as a result of continued growth, and local planning agency documents project continuing growth in the CLWA service area. Without the Project, the contract right to the Table A Amount that is the subject of the Project could be transferred to other portions of urbanized California. The amount, timing, and location of such a transfer are highly speculative, however, and this scenario is not considered further. Two hypothetical scenarios have been carried forward for detailed analysis that are intended to define a reasonable range of possible actions that could occur under the No Project Alternative. The discussion provided below under the Moratorium Scenario and Build-Out Scenario includes projects in the County of Los Angeles Development Monitoring System (DMS) which includes: pending projects (not yet approved); approved projects (subdivisions that have been granted an approved tentative tract map that is not yet recorded or expired); and recorded projects (subdivisions that have recorded a final tract map but are not yet built).

Moratorium Scenario

Under the Moratorium Scenario, a moratorium on new development would be implemented. This assumes that the local retail water purveyors within the CLWA service area who purchase SWP water from CLWA decide that there is insufficient water to issue "will serve" letters to supply new development and that local land use agencies respond by imposing a moratorium on new development in the CLWA service area.

The 1998 DMS included 15,973 housing units (8,588 approved, 2,292 recorded, and 5,093 pending). The 2002 DMS included 33,113 housing units (13,586 approved, 9,915 recorded, and 9,612 pending). These housing units would not be built under this scenario. Assuming three persons per household, this amount of development would result in a population of approximately 49,510 persons, using the 1998 DMS, and 99,339 persons, using the 2002 DMS.

The Project was undertaken to serve some existing demand (users). Under the No Project Alternative, some additional groundwater production wells may be required to serve existing demand that would have been met by the Table A Amount transfer, particularly at times of low deliveries from the SWP. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

Build-Out Scenario

Under the Build-Out Scenario, approved and recorded projects listed in the DMS for the Santa Clarita Valley would be developed, notwithstanding the potential shortfall in reliable water supply. Based on the DMS from both 1998 and 2002, the number of housing units in approved and recorded DMS projects considered under this scenario (10,880 and 23,500 units, respectively) is less than the number of housing units that could

be supported by the Project given an average year water supply of 34,400 AF (35,600 units). The population associated with the development identified in the 1998 DMS would be 32,640 persons; the population associated with the 2002 DMS development would be 70,500 persons. In comparison, the population that could be served by the Project would be 106,700 persons.

Under this scenario, existing demand currently met by the Table A Amount transfer and the increased water demand from approved and recorded projects allowed to be constructed would rely on existing water supplies (including local groundwater resources) that are currently not used for urban purposes. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

b. Alternative 2, Increased Extractions from the Saugus Formation (Increased Groundwater Extractions). Under this alternative, an average of 34,400 AFY would be extracted from the Saugus Formation and delivered to users in the CLWA service area in lieu of the water anticipated from the transfer of SWP Table A Amount. This amount would be above what is currently extracted or presently planned for extraction. The extraction would be accomplished by increased use of existing wells and by the installation of 15 additional wells, pumps, and wellhead treatment facilities. Existing or new distribution facilities such as pipelines and pumping stations would be used to transport this water to existing and planned treated water distribution facilities.

c. Alternative 3, Exchange Desalinated Water for SWP Water (Desalination/Exchange). This alternative comprises two primary components in lieu of the Project: (1) CLWA would contribute a portion of the funds needed by another agency to develop a seawater desalination facility along the southern California coast; and (2) an average of 34,400 AFY of desalinated water produced by this facility would be exchanged with CLWA for SWP water. A likely partner in such an arrangement would be The Metropolitan Water District of Southern California (Metropolitan). If both parties agreed, CLWA would enter into a contract with Metropolitan indicating that a portion of Metropolitan's annual SWP Table A Amount would be delivered to Castaic Lake for use by CLWA in exchange for CLWA's contribution to a desalination facility to be constructed by Metropolitan. CLWA would treat and distribute this SWP water in existing CLWA facilities, and Metropolitan would use water from the desalination facility in lieu of the SWP water exchanged with CLWA.

Assuming a 50 percent recovery rate, a plant capacity of approximately 61 mgd would be required to produce an average of 34,400 AFY. Depending on the extent of ancillary facilities included at the site, a site of at least 2 acres could be required. In addition to the desalting plant, the coastal facility would likely include new electrical power conveyance and control equipment, ocean water intake and brine disposal structures, and a treated water pumping plant. Total site area could be up to 5 acres. Depending on site location, additional pipelines and related pumping facilities may be required to convey the desalinated water a short distance to the existing Metropolitan distribution facilities.

d. Alternative 4, Transfer of a Smaller Table A Amount (Smaller Table A Amount). Under this alternative, CLWA would acquire a smaller amount of SWP Table A Amount than under the Project. A transfer of approximately 20,000 AF of SWP Table A Amount was analyzed because it is the approximate mid-point between the amount that would be transferred under the Project and the No Project Alternative. Existing facilities would be used, as described for the Project.

Since the demand for high quality surface water is expected to increase in southern California as a result of anticipated growth, the remaining SWP Table A Amount (21,000 AF) could be transferred to other (unidentified) portions of urbanized southern California. The Table A Amount not acquired by CLWA would likely be acquired by other agencies with growing urban water demands. However, the timing, amount, and location of the transfer(s) as well as the associated impacts are speculative and are not evaluated under this alternative.

e. Alternative 5, Transfer of a Larger Table A Amount (Larger Table A Amount). Under this alternative, CLWA would acquire a larger SWP Table A Amount than under the Project. Such an alternative would require the use of a larger proportion of the SWP facilities and capacities than described for the Project, and would attempt to reduce or avoid the effects of reductions in SWP supplies (during periods of drought) on local groundwater resources. In order to provide an analysis of impacts of a transfer greater than the Project (transfer of 41,000 AF of Table A Amount), a transfer of approximately 60,000 AF of SWP Table A Amount was established for this alternative. This Table A Amount is potentially available from other KCWA member units who have expressed interest in reducing their Table A Amount and have completed CEQA analysis of the sale of this contract right (e.g., Belridge Water Storage District, Berrenda Mesa Water District, and Lost Hills Water District). Existing facilities would be used, as described for the Project.

2. Findings Regarding Alternatives to the Project.

a. Alternative 1, No Project. CLWA finds that Alternative 1, the No Project Alternative, is infeasible and less desirable than the Project and rejects this alternative for the following reasons:

- This alternative would not augment CLWA's water supply and therefore would not meet any of the Project objectives.
- Each scenario would reduce or avoid the significant indirect (growth-related) impacts of the Project in the CLWA service area, but these impacts could occur in another area if projected growth were re-located elsewhere.
- Each scenario would result in greater direct impacts than the Project because new groundwater wells, treatment facilities, and associated pipelines would be required to offset the lack of adequate SWP water needed to accommodate existing demand and planned growth.
- Each scenario could result in significant unavoidable impacts to groundwater supply and groundwater quality.
- This alternative could result in considerable economic and social impacts to residential, commercial, industrial, and public/governmental users in the

CLWA service area if water deliveries were cut back or rationing occurred. Reduced deliveries could affect the ability of public and private property owners to water lawns, parks, golf courses, landscaping, and open space areas and could result in vegetated areas dying off with resulting economic loss. Businesses that use high volumes of water may be forced to cut back production or close. A moratorium on new development would result in overcrowding and a delay or failure to meet County of Los Angeles and City of Santa Clarita General Plan population, housing, and job projections for which local governments have planned and/or constructed infrastructure and expended funds. A moratorium on new development would have potential economic consequences related to increased costs of housing in an already expensive southern California housing market, and developers with approved or recorded and unbuilt projects may experience economic loss if projects are delayed or cannot be completed. In addition, businesses considering relocating or expanding in the CLWA service area may be reluctant to invest capital because of uncertainties related to water supplies, lack of affordable housing for employees and stagnant local markets for goods and services. Alternative locations for siting or expanding businesses outside the service area would become more attractive. This could in some cases result in increased commuting, resulting in greater traffic, air emissions and energy use.

b. Alternative 2, Increased Groundwater Extractions. CLWA finds that Alternative 2, the Increased Groundwater Extractions Alternative, is less desirable than the Project and rejects this alternative for the following reasons:

- It would not adequately augment CLWA's water supply for its customers and therefore would not meet most of the Project objectives.
- It would not meet the Project objective to import water from outside the CLWA service area, to reduce dependence upon local water supplies.
- It would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts.
- It would result in greater direct impacts to many environmental resources because new groundwater wells, treatment facilities, and pipelines would have to be constructed.
- It would result in a significant, unavoidable impact to groundwater supply, whereas the Project would result in a beneficial impact to groundwater supply through recharge.
- It would exceed the average annual yield of the groundwater basins, whereas the Project would allow the groundwater basins to store some of the average annual yield for use in dry years.

c. Alternative 3, Desalination/Exchange. CLWA finds that Alternative 3, the Desalination/Exchange Alternative, is less desirable than the Project and rejects this alternative for the following reasons:

- This alternative would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts.
- It would result in greater direct impacts to many environmental resources from the construction and operation of a new desalination plant.
- This alternative would augment CLWA's water supply since desalinated water would be exchanged with another water agency's SWP Table A Amount, which would be conveyed to existing CLWA facilities, and therefore would meet the Project objectives.
- This alternative would be significantly more costly than the Project.

d. Alternative 4, Smaller Table A Amount. CLWA finds that Alternative 4, the Smaller Table A Amount Alternative, is less desirable than the Supplemental Water Project and rejects this alternative for the following reason:

- Although this alternative would reduce the potentially significant indirect impacts of the Project and would result in similar or lessened direct impacts, it would not meet one of the two Project objectives, which is to "Augment CLWA's SWP Table A Amount to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area."
- This alternative would not provide adequate water to meet projected demand.

e. Alternative 5, Larger Table A Amount. CLWA finds that Alternative 5, the Larger Table A Amount Alternative, is less desirable than the Supplemental Water Project and rejects this alternative for the following reasons:

- This alternative would meet the Project objectives, but would result in similar or greater direct impacts and would provide more water for more growth that could increase the significant indirect impacts of the Project.

f. Environmentally Superior Alternative. The Project is the environmentally superior alternative that meets the Project objectives. The No Project Alternative would have direct environmental impacts substantially greater than the Project and would not meet Project objectives.

g. Other Table A Amount Uses. At least one comment to the Project EIR suggested that the Alternatives analysis in the EIR should include alternative uses of the Table A Amount water transferred by the Project for other purposes and in other locations, including for environmental purposes. CLWA could not approve consideration of this alternative in the Project EIR for two principal reasons: (i) it accomplishes none of the Project objectives and would leave CLWA without the supplemental water supply that it needs to meet present demand and to provide for some future demand; and (ii) any such alternative more properly should be suggested to DWR for consideration as it prepares the new Monterey Amendment EIR, not to CLWA. This is not a viable alternative to the Project.

GENERAL FINDINGS

A. CLWA has adopted the following mission statement: "A public agency providing reliable, quality water at a reasonable cost to the Santa Clarita Valley." The Project provides a valuable source of supplemental water that will allow CLWA to continue to implement its mission statement. As such, it is an integral part of CLWA's long-term water supply planning program. A portion of the water provided under the Project already is in use by CLWA customers to meet existing demand. The remainder has been secured to meet some of the demand projected by local planning agencies as part of their General Plans.

B. Some members of the public have stated that CLWA is acting improperly by considering the Monterey Amendment and the Project to be in effect, suggesting that the Project water transfer is in jeopardy. CLWA considers this position to be invalid for two reasons:

1. The Monterey Amendment Settlement Agreement provides that "the Parties [to the Settlement Agreement] will jointly request that the Superior Court enter an order approving this Settlement Agreement, and an order, pursuant to California Public Resources Code Section 21168.9, authorizing on an interim basis the administration and operation of the SWP and the Kern Water Bank in accordance with the Monterey Amendments . . . ." The Sacramento Superior Court has entered such an order and the SWP continues to operate in accordance with the Monterey Amendment, which includes the provision under which the Project was implemented.

2. Notwithstanding two requests from the petitioners in the "*Friends*" case (one request having been made to the Court of Appeal and the other to the Superior Court), both courts declined to set aside the Project or to order suspension or termination of its operation pending completion of the Project EIR. CLWA's preparation of the Project EIR, its adoption of these Findings, the Statement of Overriding Consideration, the Mitigation and Monitoring Program and the Resolution based upon these Findings and the Statement of Overriding Considerations are steps required by, and conducted under the supervision of, the Superior Court to bring the Project into compliance with CEQA and to render the Resolution final. The Monterey Amendment settlement agreement provides at Page 11 that DWR's new Monterey Amendment Program EIR will include analysis of the Project as part of the overall analysis of the environmental impacts of completed Table A Amount permanent transfers.

C. CLWA's water supply from the SWP allows CLWA's customers, who are water retailers, to conjunctively use the SWP supplies and their local groundwater supplies, to the extent each retailer has access to groundwater. Conjunctive use programs acknowledge that reliance on only one water supply in certain circumstances can result in delivery shortages. By expanding the range of water supply sources, a water supplier increases the long term reliability of its supply. For example, when climactic or other conditions reduce the local water supplies, the water purveyor can turn to its SWP deliveries to replace (in whole or in part) the local supplies, "resting" the groundwater basins and allowing them to recharge. In other years, when reduced SWP supplies available from Northern California result in SWP delivery shortages, Southern California water agencies can rely on local groundwater or other local supplies as a back-up to the SWP supply. Having this flexibility available enhances a water purveyor's overall supply reliability and reduces the need to cut back deliveries to customers. The SWP supplies also provide a safeguard against long-term overdraft of local groundwater basins.

D. Deliveries of SWP water are not assured. In years when DWR is unable to deliver the full amounts requested by CLWA and the SWP contractors, DWR allocates available SWP water to the contractors in proportion to their respective Table A Amounts. By implementing the Project, not only does CLWA increase its deliveries in good supply years, it also increases its proportionate deliveries in short supply years.

E. Project opponents point to the Project as being growth inducing because it removes one obstacle to growth. The Project EIR acknowledges the indirect Project impacts from growth. The positive aspect of removing this obstacle to growth is that local planning agencies have prepared their planning documents with the objective of building out their plan areas in a manner that meets the needs of their communities. People must live somewhere and businesses must be located to meet the needs of the local population. Although the Project doesn't meet all of the projected demand, it provides some part of the water needed for the anticipated growth.

F. The population of California, particularly Southern California, continues to grow at a remarkable rate. CLWA's service area is a popular site for housing for people who work in the Los Angeles area. Los Angeles County's Development Monitoring System (DMS) attempts to track all pending, approved, and recorded development projects within the City of Santa Clarita and the unincorporated area of Los Angeles County, and the City of Santa Clarita also maintains its own separate records in addition to the DMS. To the extent possible, CLWA's mission includes meeting the needs of the projected population within CLWA's service area, taking into account the DMS and City of Santa Clarita information.

G. CLWA paid $48 Million for the Project, financing the acquisition of 41,000 acre feet per year of Table A Amount through the sale of tax exempt obligation bonds. This money already has been paid to Wheeler Ridge-Maricopa Water Service District and CLWA has been servicing the bonds since the initial transfer in 1999. In addition, CLWA has paid to DWR a fixed annual cost for this Table A Amount of approximately $6.8 Million. CLWA has a substantial investment in the Project, the cost of which is being borne by current water users.

EXHIBIT "C"

STATEMENT OF OVERRIDING CONSIDERATIONS

FINAL ENVIRONMENTAL IMPACT REPORT

The Board of Directors of the Castaic Lake Water Agency ("CLWA") adopts and makes this Statement of Overriding Considerations concerning the proposed Project's unavoidable significant impacts[1] to explain why the proposed Project's benefits override and outweigh the unavoidable significant impacts of the Project.

The proposed Project will bring substantial benefits to CLWA, including increased water supply reliability to meet current demand within the CLWA service area and increased overall water supply to serve a portion of the growth within CLWA through 2025 as projected by one regional agency, as specifically described in the Southern California Association of Governments' ("SCAG") currently adopted demographic forecasts for the Santa Clarita Valley area, and as described in adopted General and Specific Plans of local land use agencies (See Final EIR, Vol. I, pp. 5-7 and 5-11.)

Without the Project, permanent damage could occur to groundwater resources within CLWA's service area. Specifically, without the provision of an additional water supply for CLWA, existing use could overstress groundwater supplies in dry years and increase the potential for perchlorate contamination to spread, causing a significant local groundwater quality impact. Without the provision of an additional supply for CLWA, projected growth could not be accommodated within the parameters of existing environmental requirements, as the current groundwater sources in their present state could not meet the likely demands of this projected growth. (See Final EIR, Vol. I, pp 3.15-15 through 3.15-22, 7-10 and 7-11.) In addition, the failure to provide adequate water supplies to accommodate and meet the County of Los Angeles' and City of Santa Clarita's General Plan population, housing, and employment projections, for which local governments have already planned and/or constructed infrastructure, would have devastating consequences to the area's economy. These consequences include potential over-crowding in existing housing, increased costs of housing in an already expensive Southern California housing market, and economic loss to developers with approved or recorded but un-built projects, due to delay or an inability to obtain approval for completion. Furthermore, businesses considering relocating or expanding in the CLWA area may be reluctant to invest capital because of uncertainties related to water supplies, lack of adequate and affordable housing for employees, and stagnant local markets for goods and services. (See Final EIR, Vol. I, pp. 7-4 and 7-5.)

[1] Those unavoidable environmental impacts are indirect impacts to aesthetics, air quality, biological resources, transportation and circulation systems, and utilities and services, resulting from potential growth utilizing the Project water.

In contrast, the Project's provision of supplemental water supplies to accommodate much of the growth projected in adopted plans of local jurisdictions within CLWA would increase the provision of jobs and housing in the area. The additional housing and jobs will facilitate the regional housing and employment goals established by SCAG. The Project will mitigate the projected water shortage of one-million acre-feet in the year 2020 identified as an environmental impact by SCAG in its 1989 EIR for its Growth Management Plan. Attainment of regional housing and employment goals will help fulfill State policies to ameliorate a serious State housing shortage. (See Health and Safety Code § 51003(a).) The alternatives to the proposed Project considered in the Final EIR are not expected to result in substantially reduced environmental impacts when compared to the proposed Project, taking into consideration the Project objectives and the most feasible means to accomplish those objectives. Additional water supply for CLWA from sources other than a State Water Project transfer would be less reliable, more costly and/or more difficult to deliver.

The CLWA Board of Directors finds that the proposed Project's unavoidable significant impacts are acceptable in light of the Project's benefits as set forth herein. Each benefit set forth below constitutes an overriding consideration applicable to each and every identified unavoidable significant impact, warranting approval of the Project, independent of the other benefits, despite each and every unavoidable impact:

1. Increase the reliability of CLWA's current supply to meet existing demand.
2. Avoid the use of groundwater within CLWA in amounts beyond conservative estimates of operational yield to meet existing demand in dry years, as well as in future years.
3. Meet a portion of the water need for currently approved and pending housing development projects within CLWA.
4. Mitigate the projected water shortage identified as a significant impact by SCAG in its 1989 EIR for its Growth Management Plan.
5. Meet a portion of the water need for growth projected in the General and Specific Plans by local land use agencies.
6. Provide some of the water supply for new housing needed to foster economic growth, increase jobs and increase local tax revenue.
7. Facilitate the availability of new housing to meet regional goals for housing and to further State policies to ameliorate a serious housing shortage.
8. Provide additional water supply that is calculated to provide as nearly as possible the supply needed to meet projected water demand for the next 20 years.
9. Provide additional water to CLWA that will be more reliable, easy to deliver and economical as compared to alternative sources.

EXHIBIT "D"

MITIGATION AND MONITORING PROGRAM

FINAL ENVIRONMENTAL IMPACT REPORT

Mitigation measures identified in the Final EIR would avoid or substantially lessen some of the potentially significant indirect impacts of the Project that might be caused by development, as found by CLWA in the Specific Project CEQA Findings A-O (Exhibit "B").

Because CLWA is a water wholesaler (and retailer with respect to portions of its service area), other government jurisdictions, and not CLWA, have the authority and responsibility to place conditions upon approval of such proposals, which conditions would avoid or substantially lessen significant potential indirect environmental effects identified in the Final EIR, including those mitigation measures identified in the Final EIR and referenced in Specific Project CEQA Findings A-O (Exhibit "B").

Thus, CLWA's Mitigation Monitoring Program consists of CLWA monitoring of applications and environmental review for development projects that are submitted to CLWA by the developers in the process of obtaining service connections for those projects, of CLWA recommendations to land use agencies that they apply appropriate conditions of development project approval, and of regular CLWA reporting to its Board. Such CLWA monitoring and reporting is already in place and operating at this time pursuant to CLWA's development impact fee procedure, which procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the land use agencies. CLWA regularly prepares and presents to its Board a Quarterly Water Supply Status Report and a biannual Data Document, each of which summarize water service connection data for the applicable time period.

FRIENDS VS. CASTAIC
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CASTAIC LAKE WATER AGENCY

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LOS ANGELES
SUPERIOR COURT

SUPERIOR COURT OF THE STATE OF CALIFORNIA

OF THE COUNTY OF LOS ANGELES

FRIENDS OF THE SANTA CLARA RIVER, Petitioner, vs. CASTAIC LAKE WATER AGENCY, Respondent.	CASE NO.: BS 056954 Honorable David P. Yaffe **RETURN TO PEREMPTORY WRIT OF MANDATE** [CCP §1108]

TO: ALL PARTIES AND TO THEIR COUNSEL OF RECORD:

Respondent, Castaic Lake Water Agency, hereby makes the following Return to the Peremptory Writ of Mandate, issued by this Court on November 1, 2002, in the following particulars:

1. On December 22, 2004, the Board of Directors of Castaic Lake Water Agency adopted Resolution 2354, which: (1) Certified the Environmental Impact Report for the Supplemental Project Transfer of 41,000 acre-feet of State Water Project Table A Amount (the "Project"); (2) Adapted Findings, a Mitigation Monitoring Program and a Statement of Overriding Considerations, and (3) Approved the Project. A copy of Resolution No. 2354 is attached hereto as Exhibit 1.

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

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2. The Amended Notice of Completion of Draft Environmental Impact Report, dated June 17, 2004, is attached hereto as Exhibit 2.

3. The Draft Environmental Impact Report, dated June 2004, is attached hereto as Exhibit 3.

4. The Final Environmental Impact Report, dated December 2004, is attached hereto as Exhibit 4.

5. The Notice of Determination for the State Clearinghouse, dated December 23, 2004, is attached hereto as Exhibit 5.

6. The Notice of Determination for Sacramento County, dated December 23, 2004, is attached hereto as Exhibit 6.

7. The Notice of Determination for Los Angeles County, dated December 23, 2004, is attached hereto as Exhibit 7.

8. The Notice of Determination for Ventura County, dated December 23, 2004, is attached hereto as Exhibit 8.

9. The Notice of Determination for Kern County, dated December 27, 2004, is attached hereto as Exhibit 9.

WHEREFORE, Respondent, Castaic Lake Water Agency, hereby prays for the Writ of Mandate to be discharged in full.

Dated: December 30, 2004

McCORMICK, KIDMAN & BEHRENS,
GENERAL COUNSEL

R. BRUCE TEPPER, SPECIAL COUNSEL

R. Bruce Tepper
Attorney for Defendant and Respondent
CASTAIC LAKE WATER AGENCY

CLWA RETURN TO WRIT

EXHIBIT NO. 1

RESOLUTION NO. 2354

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CASTAIC LAKE WATER AGENCY: (1) CERTIFYING THE FINAL ENVIRONMENTAL IMPACT REPORT FOR A SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT; (2) ADOPTING FINDINGS, A MITIGATION MONITORING PROGRAM AND A STATEMENT OF OVERRIDING CONSIDERATIONS; AND (3) APPROVING THE PROJECT

WHEREAS, the Castaic Lake Water Agency ("CLWA") was formed and established by the California State Legislature in 1962 for the principal purpose of providing imported Northern California water for use within and adjacent to the Santa Clarita Valley; and

WHEREAS, CLWA has adopted the following mission statement: "A public agency providing reliable, quality water at a reasonable cost to the Santa Clarita Valley."

WHEREAS, CLWA, a State Water Project ("SWP") contractor, entered into a Water Supply Contract with the California Department of Water Resources ("DWR") in 1963, which contract continues as currently amended; and

WHEREAS, CLWA in April 1988 certified a programmatic environmental impact report for its capital program to provide water and related capital infrastructure for the Santa Clarita Valley through the year 2010, pursuant to then adopted planning horizons under the general plans of the planning agencies within CLWA's service area; and

WHEREAS, since completion of that 1988 CLWA capital program environmental impact report by CLWA, the applicable planning agencies have not increased the projected year 2010 population above the 270,000 persons set forth in that report for the end of the year 2010 general planning period; and

WHEREAS, in 1995, the Monterey Agreement principles were implemented through an amendment to the Water Supply Contracts between the California Department of Water Resources ("DWR") and the State Water Project ("SWP") contractors, to become effective in August 1996, which amendment became known as the "Monterey Amendment"; and

WHEREAS, in addition to statutory and other policies of the State of California, the Monterey Amendment promotes water transfers to facilitate the beneficial use of water throughout the State, including transfers from agricultural to urban water agencies in the amount of 130,000 acre feet; and

WHEREAS, in 1995, a program Environmental Impact Report analyzing the environmental impacts of the Monterey Amendment ("Monterey Amendment Program EIR") was certified; and

WHEREAS, on March 29, 1999, CLWA certified a prior Environmental Impact Report to consider a project involving the proposed transfer of 41,000 acre feet of SWP Table A Amount from Kern County Water Agency ("KCWA"), and specifically from the Wheeler Ridge-Maricopa Water Storage District ("WRMWSD") within KCWA, to CLWA; and

WHEREAS, in 2000, the California Court of Appeal, Third Appellate District reversed the Sacramento County Superior Court in *Planning & Conservation League v. Department of Water Resources* ("*PCL*," Sacramento County Superior Court Case No. 95CS03216) and found that DWR must prepare a new Monterey EIR; and

WHEREAS, in 2002 the California Court of Appeal, Second Appellate District, Fourth Division, and the Los Angeles County Superior Court in *Friends of the Santa Clara River v. Castaic Lake Water Agency* ("*Friends*," Los Angeles Superior Court Case No. BS056954) ordered CLWA to decertify its prior Environmental Impact Report for its project, based solely on a finding that the prior CLWA Environmental Impact Report had tiered from the Monterey Amendment Program EIR, which had been decertified while *Friends* was on appeal, and ordered that the Los Angeles County Superior Court was to retain jurisdiction until CLWA certified a new Environmental Impact Report complying with CEQA; and

WHEREAS, the CLWA Board of Directors decertified CLWA's prior Environmental Impact Report for its project on November 27, 2002; and

WHEREAS, the Sacramento County Superior Court in *PCL* approved a May 5, 2003 Settlement Agreement ("Monterey Amendment Settlement Agreement"), executed by CLWA and other SWP contractors, which provides that the Monterey Amendment remains in operation during the preparation of a new environmental impact report for the Monterey Amendment and further provides that the Los Angeles County Superior Court in *Friends* has exclusive jurisdiction over the litigation in *Friends* and states "that nothing in this Settlement Agreement is intended to predispose the remedies or other action that may occur in [the *Friends*] pending litigation" ; and

WHEREAS, in January 2003, CLWA issued a Notice of Preparation of a Draft Environmental Impact Report ("EIR") for a "Project," described therein as the transfer of 41,000 acre feet of SWP Table A amount from KCWA, and its member district WRMWSD, to CLWA through existing SWP facilities, and SWP contractual rights to use that water;

WHEREAS, CLWA in June 2004, by and through Science Applications International Corporation ("SAIC"), prepared and circulated a new Draft Project EIR (State

Clearinghouse No. 1998041127) to comply with the order of the Los Angeles County Superior Court in *Friends*; and

WHEREAS, the EIR considers environmental impacts of the Project based on pre-Monterey Amendment conditions, both with and without implementation of Article 18 (b) of the Water Supply Contracts, and post-Monterey Amendment conditions; and

WHEREAS, the EIR only tiers off CLWA's 1988 capital program EIR and does not tier off the prior 1995 Monterey Amendment Program EIR or any other EIR; and

WHEREAS, the EIR does not rely upon CLWA's 2000 Urban Water Management Plan; and

WHEREAS, the EIR considers environmental impacts of the Project to both the service areas of CLWA and WRMWSD, including indirect impacts within CLWA, and to affected portions of the SWP; and

WHEREAS, WRMWSD does not require the 41,000 acre-feet Table A Amount transferred for its internal needs, has rising groundwater levels, and can acquire additional supplemental water, if needed, at less expense than fixed SWP costs for the Project transferred Table A Amount;

WHEREAS, the EIR uses DWR statistical computer models to determine the portion of the 41,000 acre-feet Table A amount reliably available to analyze Project environmental impacts, consistent with the Monterey Amendment Settlement Agreement provisions applicable to the new Monterey Amendment EIR;

WHEREAS, the EIR considers and analyzes multiple Project alternatives; and

WHEREAS, CLWA gave notice of the Draft EIR in compliance with law and circulated the Draft EIR to interested persons for a 60-day public comment period commencing on June 16, 2004 and ending on August 16, 2004; and

WHEREAS, CLWA held a public hearing on July 28, 2004, to receive comments on the Draft EIR; and

WHEREAS, CLWA received public comments on the Draft EIR during the comment period; and

WHEREAS, on November 24, 2004, CLWA, by and through its staff, legal counsel and SAIC, prepared and circulated to the CLWA Board of Directors ("Board") and to those submitting comments a proposed two volume "Final EIR", Volume One consisting of the Draft EIR, and Volume Two consisting of comments, responses to comments and insignificant and non-substantive changes to the text of the Draft EIR; and

WHEREAS, on November 24, 2004, at least 10 days before certification of the Final EIR, CLWA provided all public agencies that commented on the Draft EIR with a written public response to their comments and notice of a public hearing to be held on December 8, 2004;

WHEREAS, on December 8, 2004, CLWA held an additional noticed public hearing on the Project to receive statements on the responses to comments as part of CLWA's decisional process concerning the Project; and

WHEREAS, pursuant to Public Resources Code section 21092.5, the December 8, 2004 public hearing did not constitute an extension of the public comment period, and no responses are required under that section to statements made at that hearing because the hearing was scheduled after the close of the public comment period; and

WHEREAS, on December 8, 2004, CLWA's Board deferred until December 22, 2004 all consideration related to certification of the proposed Final EIR and approval of the Project; and

WHEREAS, CLWA's Board, on December 22, 2004, pursuant to the publicly noticed agenda for its regularly scheduled public meeting, with SAIC and CLWA staff and legal counsel present, met to consider certification of the proposed Final EIR, adoption of findings, a statement of overriding considerations and a mitigation and monitoring program, and approval of the Project; and

WHEREAS, CLWA's Board has carefully, thoroughly and independently reviewed the proposed Final EIR, including all public comments and responses thereto; and

WHEREAS, CLWA's Board has considered all of the information presented to it as set forth above and this Resolution and action taken hereby is a result of the Board's independent judgment and analysis.

NOW, THEREFORE, BE IT RESOLVED by this Board of Directors of the Castaic Lake Water Agency that it hereby makes the following findings and determinations:

1. The Board certifies that the Final EIR, attached as Exhibit "A": (a) was presented to the Board and that the Board reviewed and considered the information contained therein prior to approving the Project; (b) reflects the Board's independent judgment and analysis; (c) has been completed consistent with CEQA; and (d) shall constitute the final EIR for the Project;

2. The Board adopts the Findings, attached as Exhibit "B," and determines that the record for the Project contains substantial evidence in support of those Findings.

3. The Board adopts the Statement of Overriding Considerations, attached as Exhibit "C," and determines that the record for the Project contains substantial evidence in support of the Statement.

4. The Board adopts the Mitigation and Monitoring Program, attached as Exhibit "D."

5. The Board approves the Project as being in the best interests of CLWA and the public by augmenting and firming up water supplies, and by facilitating the beneficial use of water throughout the State.

6. The Board directs CLWA's General Manager to execute all documents required to carry out and implement the Project and to cause to be filed a Notice of Determination of CLWA's approval of the Project.

7. The Board designates its Secretary, Marcia Ward, as Custodian of the record of the proceedings upon which its decision is based and specifies the location of that record as CLWA's administrative offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350

EXHIBIT "A"

FINAL EIR
(Attached hereto)

EXHIBIT "B"

FINDINGS
(Attached hereto)

EXHIBIT "C"

STATEMENT OF OVERRIDING CONSIDERATIONS
(Attached hereto)

EXHIBIT "D"

MITIGATION AND MONITORING PROGRAM
(Attached hereto)

I, the undersigned, hereby certify: That I am the duly appointed and acting Secretary of the Castaic Lake Water Agency, and that at a regular meeting of the Board of Directors of said Agency held on Wednesday December 22, 2004, the foregoing Resolution No. 2354 was duly and regularly adopted by said Board, and that said resolution has not been rescinded or amended since the date of its adoption, and that it is now in full force and effect.

DATED: December 22, 2004

Marcia Ward
Marcia Ward, Secretary

EXHIBIT "B"

FINDINGS

FINAL ENVIRONMENTAL IMPACT REPORT

GENERAL CEQA FINDINGS

A. No significant direct impacts will occur as a result of the Project in any of the three geographic areas evaluated in the Final EIR. The additional water supply provided by the Project, however, will remove an obstacle to growth within the CLWA service area, and significant, indirect, growth-related impacts to all environmental resources within that service area could result from Project implementation.

B. Concern has been expressed by some members of the public that the potential long term effect of global warming upon the SWP water supplies could result in less water being delivered to CLWA under the Project than the supply figures used in the EIR. CLWA has considered this issue carefully and has concluded that, if SWP water supplies were reduced, in the long term, due to global warming or any other cause, the result would be that the worst case analysis in the EIR for the indirect, growth-related impacts of the Project are over-stated to some degree. In that event, the actual indirect, growth-related impacts of the Project upon environmental resources would be less than those analyzed in the EIR and would be included within the range of potential impacts projected by the EIR.

C. During the public comment period, members of the public expressed their belief that the Final EIR should not (or, as some assert, could not) be certified until after the Department of Water Resources (DWR) certifies a new Environmental Impact Report for the Monterey Amendment. CLWA has considered these comments and the Master Response to Comments incorporated into the Final EIR. CLWA is satisfied that the Master Response to these comments adequately addresses the position stated by the commenters for the following reasons:

1. The litigation pertaining to the Monterey Amendment Program EIR originated in Sacramento County Superior Court and DWR's new Environmental Impact Report for the Monterey Amendment is being prepared under the jurisdiction and supervision of that Court. The litigation that gave rise to the preparation of the Project EIR arose in the Los Angeles County Superior Court and this Final EIR is being prepared under the jurisdiction and supervision of that same Court. The Sacramento Superior Court has no jurisdiction over the Project Final EIR.

2. CLWA is not required to await preparation of DWR's new Monterey Amendment Environmental Impact Report or tier off that document. CEQA does not require a lead agency for a project to await preparation of a programmatic Environmental Impact Report where the lead agency has sufficient information upon which to base environmental analysis of a specific project that may be included in the programmatic Environmental Impact Report's analysis at some future date.

3. The Court of Appeal in the litigation pertaining to the original EIR for the project did not require CLWA to prepare a new EIR that tiers off, or awaits certification, of DWR's new Monterey Amendment Environmental Impact Report. Rather, CLWA is under the supervision of the Los Angeles Superior Court in preparing the Project EIR.

4. The Court of Appeal in the challenge to the Monterey Amendment Program Environmental Impact Report (Monterey Amendment Program EIR Challenge), on Page 3 of its Order approving the Monterey Amendment Settlement Agreement, stated that, "until DWR files its return in compliance with the Peremptory Writ of Mandate and this Court orders discharge of the Writ of Mandate, the administration and operation of the State Water Project and the Kern Water Bank Lands shall be conducted pursuant to the Monterey Amendments to the State Water Contracts . . . and the other terms and conditions of the Settlement Agreement."

D. During the public comment period, members of the public expressed their belief that CLWA was not the proper lead agency for preparation of the Project EIR. CLWA has considered this comment, as well as the Master Response to Comments, and concludes that CLWA must be the lead agency for the preparation of the Project EIR for the following reasons:

1. Under the doctrine of the law of the case, CLWA is the proper lead agency for the Project EIR. The Court of Appeal found no substantive defect in CLWA's prior Environmental Impact Report, only a legal defect resulting from tiering off the Monterey Amendment Program Environmental Impact Report that, subsequent to certification of the prior project Environmental Impact Report, was ordered de-certified.

2. The Court of Appeal ordered CLWA to act as the lead agency when it stated: "The trial court shall . . . retain jurisdiction until respondent certifies an EIR complying with CEQA . . . ."

3. CLWA has principal responsibility to approve and carry out the Project. Under CEQA, the agency with this primary responsibility must be the lead agency, even though part of the project may be located and have impacts within the jurisdiction of another public agency.

4. Under Public Resources section 21152, CLWA must be the lead agency because it is the local agency undertaking the Project. CLWA is the major proponent of the Project and has assumed the primary task of implementing the SWP water supply contract amendment for the Project.

5. CLWA must be the lead agency because it cannot delegate its responsibility over its SWP contract rights to another body. CLWA has primary responsibility for purchasing, obtaining delivery of, arranging storage of, and using the SWP water provided under the contract amendment that is the Project.

6. Some commenters have applied the Court of Appeal's decision in *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 (Monterey Amendment Program EIR Challenge) to the preparation of the Project EIR, arguing that CLWA is an improper lead agency for the Project EIR because the Court of Appeal found DWR to be the only proper lead agency for the Monterey Amendment Program Environmental Impact Report. There is an important distinction between the Environmental Impact Report at issue in the Monterey Amendment Program EIR Challenge and the Project EIR – the Monterey Amendment Program Environmental Impact Report analyzed the impacts of major amendments to all SWP contracts, the conveyance of state-owned property, and changes in the operation of the SWP project that had statewide impacts. The Court of Appeal determined that for a project of that magnitude, DWR was the only suitable lead agency. The subject Project is significantly different from the Monterey Amendment. The subject Project is a simple transfer of Table A Amount from one SWP contractor to another. It has no statewide impacts; its impacts are site specific to the transferor and the transferee with some minimal impacts on SWP facilities.

E. Some members of the public who have commented on the Project EIR have suggested that the Monterey Amendment Settlement Agreement precludes CLWA from proceeding with the Project EIR and with the Project. CLWA disagrees. The Monterey Amendment Settlement Agreement states on Page 12: "The Parties [to the settlement agreement] agree that jurisdiction with

respect to that litigation [*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373] should remain with that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." The new Monterey Amendment Environmental Impact Report will include the Project water transfer in its larger evaluation of the environmental impacts of all permanent Table A Amount transfers described in the Monterey Amendment.

F. Comments on the EIR included references to "paper water," an issue of concern to the Court of Appeal in the Monterey Amendment Program EIR Challenge. The "paper water" issue is not relevant to the Project because the Project is intended to firm up and supplement existing CLWA water supplies. CLWA uses DWR's supply reliability figures in projecting how much water the Project has the capability of yielding for CLWA customers. If the actual SWP water deliveries are less than DWR's reliability figures project, the growth-related impacts of the Project, analyzed in the EIR, will be less than anticipated. To stabilize its future supplies, CLWA banks water for future use in times of shortage. Finally, the Project EIR cautions planners and developers that historical SWP water delivery rates are no guaranty of future delivery rates. Many factors can affect the amount and reliability of water supplies. The Project EIR acknowledges this but conducts a "worst case" analysis of growth-related impacts based upon historical deliveries.

G. The Project EIR uses two baseline conditions to perform the environmental impact analysis because there have been two Notices of Preparation for the Project (one for the de-certified Environmental Impact Report and one for the present EIR) and because the water transfer analyzed in the Project EIR has occurred and CLWA has been operating with the Project in place since certification of the original Environmental Impact Report. The use of two baselines enabled CLWA to compare the pre-Project condition with the current condition (with the Project in operation) and the current condition with the condition existing immediately prior to preparation of the current EIR. In this way, the broadest range of potential impacts was addressed.

H. The current EIR also addresses potential Project impacts with and without the implementation of the Monterey Amendment, thereby providing to the decision makers and the public a broad range of environmental impact analysis and responding to the Court of Appeal's order that the Monterey Amendment Program Environmental Impact Report be de-certified. In short, the Project EIR does not tier off any other Environmental Impact Report other than the 1988 Capital Program Environmental Impact Report. The Project EIR is a stand-alone document with regard to the Monterey Amendment.

I. CLWA has worked closely with DWR in the preparation of the Project EIR to ensure that the facts, assumptions and analysis included in the Project EIR are accurate, to utilize DWR models, to coordinate the analysis in the Project EIR

with the analysis that DWR is undertaking in its preparation of the new Monterey Amendment Environmental Impact Report, and to avoid inconsistencies between the Project EIR and the new Monterey Amendment Environmental Impact Report. DWR's comments on the contents of the Project EIR have been positive and have confirmed that completion of the Project EIR will not prejudice DWR's completion of its new Monterey Amendment Environmental Impact Report.

J. During preparation of the Project EIR, the Urban Water Management Plan for CLWA's service area was declared to be invalid. Although CLWA is in the process of updating the Urban Water Management Plan, the update process will take considerable time and effort; it cannot be completed prior to certification of the Project EIR. The Project EIR does not rely upon CLWA's 2000 Urban Water Management Plan, so the invalidation of that Plan has no impact on CLWA's consideration of the environmental analysis included in the Project EIR.

K. Some commenters to the Draft Project EIR raised issues concerning CLWA's use of DWR modeling programs to project the amount of water that CLWA might expect to be delivered from the Project. CLWA used the information yielded by DWR's models to project indirect impacts of the Project related to growth and to identify and analyze cumulative impacts of the Project. CLWA used DWR statistical computer models to determine the portion of the 41,000 acre feet Table A Amount reliably available to analyze Project environmental impacts for two (2) reasons: (1) use of DWR modeling is consistent with the Monterey Settlement Agreement provisions applicable to the new Monterey Amendment Environmental Impact Report; and (2) DWR has greater resources and experience than CLWA in formulating SWP reliability models, so CLWA considered DWR's modeling programs to be superior to any that CLWA could economically and efficiently formulate for the Project.

L. Concern was expressed during the public comment period that the existing SWP facilities were insufficient to transport the Project water deliveries to CLWA and would cause potential conflicts with delivery demands by Metropolitan Water District. Although Metropolitan Water District has substantial demand for SWP water (and the largest Table A Amount among urban SWP contractors), the majority of SWP deliveries to Metropolitan Water District proceed through the East Branch of the California Aqueduct, not the West Branch through which CLWA receives its deliveries. The West Branch has more than adequate capacity to accommodate water deliveries from the Project and has been doing so since 1999, when the Project first was implemented.

M. Members of the public have opined that the Project will result in potentially significant impacts on agricultural lands in WRMWSD. CLWA staff and the EIR writers conducted extensive research and analysis, working closely with

WRMWSD staff, to describe how WRMWSD and its customers propose to offset their transfer of expensive SWP water with alternative, less expensive sources. The result is the determination that no fallowing of productive agricultural lands will occur as a result of the Project. The fallowing that will occur will be part of routine agricultural practices, as has occurred in the past. WRMWSD and its customers have several sources of water supply available that they propose to use in lieu of the Project water, including but not limited to groundwater (groundwater levels have been increasing steadily in WRMWSD's service area), groundwater banking, and surplus water. In short, WRMWSD has assured CLWA that the Project water is an expensive source that can be replaced with more economical water, thereby ensuring long term agricultural viability.

PROJECT SPECIFIC CEQA FINDINGS

A. Findings Concerning Indirect and Cumulative Impacts of the Project -- Aesthetic/Visual Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential aesthetic changes could occur within the CLWA service area as an indirect growth-related and cumulative significant impact of the Project, including changes to the visual characteristics of the area through the development of open space and further urbanization of hillside and natural areas. Scenic vistas could be impacted, glare from night lighting could increase, and a "confused urban image" could result from potential haphazard development. This impact is identified in the Final EIR, Vol. I, pages 4-3 and 6-41.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the draft EIR. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, depending upon the magnitude, location, and design of future development, the impact may not be mitigable to less than significant, as stated on pages 4-3 and 6-41 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by the applicable land use agencies, will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction; and that those land use agencies can and should implement those measures. This impact is overridden by benefits of the proposed Project, as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

B. Findings Concerning Indirect and Cumulative Impacts of the Project -- Agricultural Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which the information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential conversion of agriculture lands to non-agricultural uses or changes in agricultural zoning by local jurisdictions to allow a higher density or intensity of development could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-7, 4-8 and 6-42.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles and the County of Ventura, both of which are required by law to comply with CEQA. The County of Los Angeles and the County of Ventura could reduce this impact to less than significant by implementing their existing General and Area Plan policies, including those of the Piru Area Plan, identified at Table 4.2-1 of the Final EIR, Vol. I, since these plans contain measures to preserve and protect agricultural land, as noted on pages 4-8 and 6-42 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction; and that those land use agencies can and should implement those measures.

C. Findings Concerning Indirect and Cumulative Impacts of the Project -- Air Quality

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about

new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential air quality changes could occur within the CLWA service area as an indirect growth related and cumulatively significant impact of the Project, including increased air pollutant emissions for which the South Coast Air Basin does not currently meet federal or state standards, toxic emissions from industrial development, increased vehicle mobile emissions, and fugitive dust emissions from construction. This impact is identified in the Final EIR, Vol. I, pages 4-8 and 6-42.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, depending on the magnitude of future development, the impact may not be fully mitigable to less than significant, as stated on pages 4-8 and 6-42 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by those land use agencies will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

D. Findings Concerning Indirect and Cumulative Impacts of the Project -- Biological Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval

process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential changes to biological resources could occur with the CLWA service area as an indirect growth related and cumulative significant impact of the Project, including loss, degradation, or fragmentation of habitats, which may result in local native plant and wildlife populations, including sensitive species being reduced in size and made vulnerable to local extinction. Additionally, non-native species could compete with native species, and established wildlife corridors and nurseries could be disrupted. Pollutant levels could increase and cause harm to sensitive habitat and species. This impact is identified in the Final EIR, Vol. I, pages 4-9, 6-42 and 6-43.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. Also other regulatory agencies such as the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game may impose permit conditions that reduce any significant impact. However, depending on the magnitude of future development, the impact may not be fully mitigable to less than significant, as stated on pages 4-9 and 6-43 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by those land use and regulatory agencies will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies and regulatory agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

E. Findings Concerning Indirect and Cumulative Impacts of the Project -- Cultural Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential disturbance of human remains, archaeological, historical, and paleontological resources by excavation and grading activities associated with future development could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-9, 4-10 and 6-43.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain measures for either avoiding impacts to such resources or providing adequate documentation of the resources, as noted on pages 4-10 and 6-43 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's

responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

F. Findings Concerning Indirect and Cumulative Impacts of the Project--Geology and Soils

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential geologic hazards could occur within CLWA as an indirect growth related and cumulative significant impact of the Project, including fault rupture, seismically induced ground failure, and seiches, as well as permanent changes in topography, loss of topsoil and removal of unique geologic features. This impact is identified in the Final EIR, Vol. I, pages 4-10, 4-11, 6-43 and 6-44.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measure to avoid or reduce such impact, as noted on pages 4-11 and 6-44 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to

a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

G. Findings Concerning Indirect and Cumulative Impacts of the Project -- Hazards and Hazardous Materials

1. Facts.

a. With regard to direct impacts, CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" to address CLWA's handling, storing, and using hazardous materials in water treatment according to all state and federal regulations. This Project will not result in any new construction related to water treatment, including no expansion of any currently existing treatment facilities, nor will it result in any other direct significant impacts. In April 2003, CLWA certified the Final EIR for expansion and upgrade of the Earl Schmidt Filtration Plant (ESRP), which fully evaluated and addressed the issues of hazards and hazardous materials associated with the increase in raw water treatment resulting from growth, including any need for mitigation. Consequently, CLWA need not adopt a separate mitigation and monitoring program for purposes of ensuring that when engaged in water treatment, CLWA handles, stores and uses hazardous materials according to state and federal regulations.

b. With regard to indirect impacts, CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

c. A potential increase in hazards and hazardous materials could occur within CLWA as an indirect growth related and cumulative significant impact of the Project, including required removal or remediation of contaminated soils, increase in the use, transport and disposal of hazardous materials, impairment of emergency response or evacuation plans, and increased exposure to wildland fires. This impact is identified in the Final EIR, Vol. I, pages 4-11, 6-44 and 6-45.

d. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as noted on pages 4-11, 4-12 and 6-45 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

H. Findings Concerning Indirect and Cumulative Impacts of the Project -- Land Use and Planning

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential division of a community, building in sensitive areas such as hillside management areas, open space areas and sensitive wildlife habitat areas, or conflict with adopted land use plans could occur within CLWA as an indirect growth

related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-12 and 6-45.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified in Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as noted on pages 4-12 and 6-45 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

I. Findings Concerning Indirect and Cumulative Impacts of the Project -- Population and Housing

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. A potential increase of 106,700 persons and 35,600 housing units could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-13 and 6-45.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as noted on pages 4-13 and 6-45 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA,

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

J. Findings Concerning Indirect and Cumulative Impacts of the Project -- Public Services

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. A potential increased demand for police and fire services, including staffing, facilities and equipment, decreased response times and fire flows, and construction of new schools and libraries could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-13, 4-14 and 6-46.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measures to avoid or reduce such impacts, as stated on pages 4-14 and 6-46 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

K. Findings Concerning Indirect and Cumulative Impacts of the Project -- Recreational Resources

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about

new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential increased demand for recreational resources, such as parks and trails and other recreation areas, could occur within CLWA as an indirect growth related and cumulative significant impact of the Project, exacerbating existing shortfalls in local parkland that may outpace the ability of public agencies to provide these resources. This impact is identified in the Final EIR, Vol. I, pages 4-14, 6-46 and 6-47.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by utilizing the Quimby Act and by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, since the policies contain adequate measure to avoid or reduce such impact, as noted on pages 4-14, 4-15 and 6-47 of the Final EIR, Vol. I. The Quimby Act (Gov. Code § 66477), as part of the Subdivision Map Act, gives a city or county the authority to impose as a condition to subdivision map approval the dedication of land, the payment of fees, or a combination of both for park and recreational purposes to accommodate the increased burden on recreational facilities as a result of the population projected to inhabit the subdivision. Specific mechanisms for implementing the referenced General and Area Plan policies would be determined in the course of project-specific environmental review required by CEQA.

2. Findings.

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

L. Findings Concerning Indirect and Cumulative Impacts of the Project -- Transportation and Circulation

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development

projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential increases in traffic, deterioration in the level of service, the need for new or altered roads, highways, parking facilities and transportation systems, and the alteration of present patterns of circulation could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-15 and 6-47.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, due to the delay between the time improvements are needed and the time they can be provided, the impact may not be fully mitigable to less than significant, as stated on pages 4-15 and 6-47 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable; the measures referenced above, if implemented successfully by those land use agencies will substantially reduce this impact, but not to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

M. Findings Concerning Indirect and Cumulative Impacts of the Project -- Utilities and Service Systems

1. Facts.

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential increased demand for solid waste disposal services, and potential increased need for potable water treatment facilities could occur within CLWA as an indirect growth related and cumulative significant impact of the Project. This impact is identified in the Final EIR, Vol. I, pages 4-16, 4-17, 6-47 and 6-48.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could substantially reduce this impact by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. However, because impacts to solid waste disposal may not be avoidable unless additional landfill capacity is approved and constructed, the impact may not be fully mitigable to less than significant, as stated on pages 4-17 and 6-48 of the Final EIR, Vol. I.

2. Findings.

CLWA finds this impact to be significant and unavoidable as to solid waste disposal; the measures referenced above, if implemented successfully by those land use agencies will substantially reduce this impact, but not to a level of insignificance for solid waste disposal. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures. This impact is overridden by Project benefits as set forth in the Statement of Overriding Considerations. The alternatives identified in the final EIR are unacceptable for the reasons set forth in Finding P.

N. **Findings Concerning Indirect and Cumulative Impacts of the Project -- Water Resources**

1. **Facts.**

a. CLWA's March 29, 1999 Resolution No. 2040, certifying the prior EIR for this Project, adopted a "mitigation and monitoring program" that contemplated obtaining reports from the Counties of Los Angeles and Ventura and the City of Santa Clarita regarding their implementation of mitigation measures applicable to development projects. However, environmental information, including mitigation measures, applicable to each new development project is available to and used by CLWA when the project proponent obtains a CLWA service connection as a part of the land use approval process with those counties and city. Therefore, CLWA already has access to and uses the information that would have been provided under the prior 1999 "mitigation and monitoring program". For that reason, a mitigation and monitoring program is adopted as part of this approval of the Project in which information necessary to implement such a monitoring program will be gathered through CLWA's developer impact fee procedure in place and operating at this time. The developer impact fee procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the city and counties named above.

b. Potential changes to water resources could occur within the CLWA service area as an indirect growth related and cumulative significant impact of the Project. Increased demand on local groundwater resources during periods of reduced SWP deliveries could result in substantial depletions on a short-term basis in dry hydrologic years. The impermeable surface areas resulting from development could result in alteration of surface flows, reduction of aquifer recharge and increased amount and rate of stormwater runoff, increased flooding and peak flow rates that could result in substantial erosion or siltation. This impact is identified in the Final EIR, Vol. I, pages 4-17, 4-18, 6-48 and 6-49.

c. CLWA has no authority to regulate development projects within its service area, so mitigation of this potential impact is outside CLWA's control. This authority and responsibility is held by the local agencies within CLWA's service area: The County of Los Angeles, County of Ventura, and City of Santa Clarita, all of which are required by law to comply with CEQA. The County of Los Angeles, County of Ventura, and City of Santa Clarita could reduce this impact to less than significant by [complying with insert the applicable statutes re water supply for new projects] and by implementing their existing General and Area Plan policies identified at Table 4.2-1 of the Final EIR, Vol. I, as noted on pages 4-18 and 6-49 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. Additionally, compliance with the LARWQCB Water Quality Control Plan [Basin Plan] for the Coastal Watersheds of Los Angeles and Ventura Counties, as amended, also would reduce significant and less than significant impacts.

2. **Findings.**

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by those land use agencies will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those land use agencies, not within CLWA's responsibility or jurisdiction, and that those land use agencies can and should implement those measures.

O. **Findings Concerning Cumulative Impacts of the Project upon Air Quality Associated with SWP and Associated Facilities**

1. **Facts.**

a. The Project's direct impact to air quality, although less than significant, would contribute to the significant air quality impacts from the CALFED project and the San Luis Reservoir Low Point Project. This cumulative impact is identified in the Final EIR, Vol. I, page 6-40.

b. The CALFED agencies could substantially reduce this cumulative impact by implementing CALFED program mitigation measures listed on page 6-40 of the Final EIR, Vol. I. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review required by CEQA. Although an EIR has not yet been published for the San Luis Low Point Improvement Project, based on a preliminary analysis of the impacts, similar measures to those listed for the CALFED project could be implemented to reduce significant impacts.

2. **Findings.**

CLWA finds this impact to be significant and avoidable; the measures referenced above, if implemented successfully by CALFED agencies and/or by agencies within the CALFED program will reduce this impact to a level of insignificance. CLWA also finds that such measures are within the responsibility and jurisdiction of those agencies, not within CLWA's responsibility or jurisdiction, and that those use agencies can and should implement those measures.

P. **Findings Concerning Alternatives to the Project.**

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, it must discuss alternatives to the project that would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

1. **Facts.**

a. Alternative 1, No Project. Under the No Project Alternative, CLWA would not acquire the additional Table A Amount or acquire the associated contractual rights for delivery of water associated with the transfer. The demand for high quality surface water is expected to increase throughout all of southern California as a result of continued growth, and local planning agency documents project continuing growth in the CLWA service area. Without the Project, the contract right to the Table A Amount that is the subject of the Project could be transferred to other portions of urbanized California. The amount, timing, and location of such a transfer are highly speculative, however, and this scenario is not considered further. Two hypothetical scenarios have been carried forward for detailed analysis that are intended to define a reasonable range of possible actions that could occur under the No Project Alternative. The discussion provided below under the Moratorium Scenario and Build-Out Scenario includes projects in the County of Los Angeles Development Monitoring System (DMS) which includes: pending projects (not yet approved); approved projects (subdivisions that have been granted an approved tentative tract map that is not yet recorded or expired); and recorded projects (subdivisions that have recorded a final tract map but are not yet built).

Moratorium Scenario

Under the Moratorium Scenario, a moratorium on new development would be implemented. This assumes that the local retail water purveyors within the CLWA service area who purchase SWP water from CLWA decide that there is insufficient water to issue "will serve" letters to supply new development and that local land use agencies respond by imposing a moratorium on new development in the CLWA service area.

The 1998 DMS included 15,973 housing units (8,588 approved, 2,292 recorded, and 5,093 pending). The 2002 DMS included 33,113 housing units (13,586 approved, 9,915 recorded, and 9,612 pending). These housing units would not be built under this scenario. Assuming three persons per household, this amount of development would result in a population of approximately 49,510 persons, using the 1998 DMS, and 99,339 persons, using the 2002 DMS.

The Project was undertaken to serve some existing demand (users). Under the No Project Alternative, some additional groundwater production wells may be required to serve existing demand that would have been met by the Table A Amount transfer, particularly at times of low deliveries from the SWP. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

Build-Out Scenario

Under the Build-Out Scenario, approved and recorded projects listed in the DMS for the Santa Clarita Valley would be developed, notwithstanding the potential shortfall in reliable water supply. Based on the DMS from both 1998 and 2002, the number of housing units in approved and recorded DMS projects considered under this scenario (10,880 and 23,500 units, respectively) is less than the number of housing units that could

be supported by the Project given an average year water supply of 34,400 AF (35,600 units). The population associated with the development identified in the 1998 DMS would be 32,640 persons; the population associated with the 2002 DMS development would be 70,500 persons. In comparison, the population that could be served by the Project would be 106,700 persons.

Under this scenario, existing demand currently met by the Table A Amount transfer and the increased water demand from approved and recorded projects allowed to be constructed would rely on existing water supplies (including local groundwater resources) that are currently not used for urban purposes. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

b. Alternative 2, Increased Extractions from the Saugus Formation (Increased Groundwater Extractions). Under this alternative, an average of 34,400 AFY would be extracted from the Saugus Formation and delivered to users in the CLWA service area in lieu of the water anticipated from the transfer of SWP Table A Amount. This amount would be above what is currently extracted or presently planned for extraction. The extraction would be accomplished by increased use of existing wells and by the installation of 15 additional wells, pumps, and wellhead treatment facilities. Existing or new distribution facilities such as pipelines and pumping stations would be used to transport this water to existing and planned treated water distribution facilities.

c. Alternative 3, Exchange Desalinated Water for SWP Water (Desalination/Exchange). This alternative comprises two primary components in lieu of the Project: (1) CLWA would contribute a portion of the funds needed by another agency to develop a seawater desalination facility along the southern California coast; and (2) an average of 34,400 AFY of desalinated water produced by this facility would be exchanged with CLWA for SWP water. A likely partner in such an arrangement would be The Metropolitan Water District of Southern California (Metropolitan). If both parties agreed, CLWA would enter into a contract with Metropolitan indicating that a portion of Metropolitan's annual SWP Table A Amount would be delivered to Castaic Lake for use by CLWA in exchange for CLWA's contribution to a desalination facility to be constructed by Metropolitan. CLWA would treat and distribute this SWP water in existing CLWA facilities, and Metropolitan would use water from the desalination facility in lieu of the SWP water exchanged with CLWA.

Assuming a 50 percent recovery rate, a plant capacity of approximately 61 mgd would be required to produce an average of 34,400 AFY. Depending on the extent of ancillary facilities included at the site, a site of at least 2 acres could be required. In addition to the desalting plant, the coastal facility would likely include new electrical power conveyance and control equipment, ocean water intake and brine disposal structures, and a treated water pumping plant. Total site area could be up to 5 acres. Depending on site location, additional pipelines and related pumping facilities may be required to convey the desalinated water a short distance to the existing Metropolitan distribution facilities.

d. Alternative 4, Transfer of a Smaller Table A Amount (Smaller Table A Amount). Under this alternative, CLWA would acquire a smaller amount of SWP Table A Amount than under the Project. A transfer of approximately 20,000 AF of SWP Table A Amount was analyzed because it is the approximate mid-point between the amount that would be transferred under the Project and the No Project Alternative. Existing facilities would be used, as described for the Project.

Since the demand for high quality surface water is expected to increase in southern California as a result of anticipated growth, the remaining SWP Table A Amount (21,000 AF) could be transferred to other (unidentified) portions of urbanized southern California. The Table A Amount not acquired by CLWA would likely be acquired by other agencies with growing urban water demands. However, the timing, amount, and location of the transfer(s) as well as the associated impacts are speculative and are not evaluated under this alternative.

e. Alternative 5, Transfer of a Larger Table A Amount (Larger Table A Amount). Under this alternative, CLWA would acquire a larger SWP Table A Amount than under the Project. Such an alternative would require the use of a larger proportion of the SWP facilities and capacities than described for the Project, and would attempt to reduce or avoid the effects of reductions in SWP supplies (during periods of drought) on local groundwater resources. In order to provide an analysis of impacts of a transfer greater than the Project (transfer of 41,000 AF of Table A Amount), a transfer of approximately 60,000 AF of SWP Table A Amount was established for this alternative. This Table A Amount is potentially available from other KCWA member units who have expressed interest in reducing their Table A Amount and have completed CEQA analysis of the sale of this contract right (e.g., Belridge Water Storage District, Berrenda Mesa Water District, and Lost Hills Water District). Existing facilities would be used, as described for the Project.

2. Findings Regarding Alternatives to the Project.

a. Alternative 1, No Project. CLWA finds that Alternative 1, the No Project Alternative, is infeasible and less desirable than the Project and rejects this alternative for the following reasons:

- This alternative would not augment CLWA's water supply and therefore would not meet any of the Project objectives.
- Each scenario would reduce or avoid the significant indirect (growth-related) impacts of the Project in the CLWA service area, but these impacts could occur in another area if projected growth were re-located elsewhere.
- Each scenario would result in greater direct impacts than the Project because new groundwater wells, treatment facilities, and associated pipelines would be required to offset the lack of adequate SWP water needed to accommodate existing demand and planned growth.
- Each scenario could result in significant unavoidable impacts to groundwater supply and groundwater quality.
- This alternative could result in considerable economic and social impacts to residential, commercial, industrial, and public/governmental users in the

CLWA service area if water deliveries were cut back or rationing occurred. Reduced deliveries could affect the ability of public and private property owners to water lawns, parks, golf courses, landscaping, and open space areas and could result in vegetated areas dying off with resulting economic loss. Businesses that use high volumes of water may be forced to cut back production or close. A moratorium on new development would result in overcrowding and a delay or failure to meet County of Los Angeles and City of Santa Clarita General Plan population, housing, and job projections for which local governments have planned and/or constructed infrastructure and expended funds. A moratorium on new development would have potential economic consequences related to increased costs of housing in an already expensive southern California housing market, and developers with approved or recorded and unbuilt projects may experience economic loss if projects are delayed or cannot be completed. In addition, businesses considering relocating or expanding in the CLWA service area may be reluctant to invest capital because of uncertainties related to water supplies, lack of affordable housing for employees and stagnant local markets for goods and services. Alternative locations for siting or expanding businesses outside the service area would become more attractive. This could in some cases result in increased commuting, resulting in greater traffic, air emissions and energy use.

b. Alternative 2, Increased Groundwater Extractions. CLWA finds that Alternative 2, the Increased Groundwater Extractions Alternative, is less desirable than the Project and rejects this alternative for the following reasons:

- It would not adequately augment CLWA's water supply for its customers and therefore would not meet most of the Project objectives.
- It would not meet the Project objective to import water from outside the CLWA service area, to reduce dependence upon local water supplies.
- It would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts.
- It would result in greater direct impacts to many environmental resources because new groundwater wells, treatment facilities, and pipelines would have to be constructed.
- It would result in a significant, unavoidable impact to groundwater supply, whereas the Project would result in a beneficial impact to groundwater supply through recharge.
- It would exceed the average annual yield of the groundwater basins, whereas the Project would allow the groundwater basins to store some of the average annual yield for use in dry years.

c. Alternative 3, Desalination/Exchange. CLWA finds that Alternative 3, the Desalination/Exchange Alternative, is less desirable than the Project and rejects this alternative for the following reasons:

- This alternative would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts.
- It would result in greater direct impacts to many environmental resources from the construction and operation of a new desalination plant.
- This alternative would augment CLWA's water supply since desalinated water would be exchanged with another water agency's SWP Table A Amount, which would be conveyed to existing CLWA facilities, and therefore would meet the Project objectives.
- This alternative would be significantly more costly than the Project.

d. Alternative 4, Smaller Table A Amount. CLWA finds that Alternative 4, the Smaller Table A Amount Alternative, is less desirable than the Supplemental Water Project and rejects this alternative for the following reason:

- Although this alternative would reduce the potentially significant indirect impacts of the Project and would result in similar or lessened direct impacts, it would not meet one of the two Project objectives, which is to "Augment CLWA's SWP Table A Amount to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area."
- This alternative would not provide adequate water to meet projected demand.

e. Alternative 5, Larger Table A Amount. CLWA finds that Alternative 5, the Larger Table A Amount Alternative, is less desirable than the Supplemental Water Project and rejects this alternative for the following reasons:

- This alternative would meet the Project objectives, but would result in similar or greater direct impacts and would provide more water for more growth that could increase the significant indirect impacts of the Project.

f. Environmentally Superior Alternative. The Project is the environmentally superior alternative that meets the Project objectives. The No Project Alternative would have direct environmental impacts substantially greater than the Project and would not meet Project objectives.

g. Other Table A Amount Uses. At least one comment to the Project EIR suggested that the Alternatives analysis in the EIR should include alternative uses of the Table A Amount water transferred by the Project for other purposes and in other locations, including for environmental purposes. CLWA could not approve consideration of this alternative in the Project EIR for two principal reasons: (i) it accomplishes none of the Project objectives and would leave CLWA without the supplemental water supply that it needs to meet present demand and to provide for some future demand; and (ii) any such alternative more properly should be suggested to DWR for consideration as it prepares the new Monterey Amendment EIR, not to CLWA. This is not a viable alternative to the Project.

GENERAL FINDINGS

A. CLWA has adopted the following mission statement: "A public agency providing reliable, quality water at a reasonable cost to the Santa Clarita Valley." The Project provides a valuable source of supplemental water that will allow CLWA to continue to implement its mission statement. As such, it is an integral part of CLWA's long-term water supply planning program. A portion of the water provided under the Project already is in use by CLWA customers to meet existing demand. The remainder has been secured to meet some of the demand projected by local planning agencies as part of their General Plans.

B. Some members of the public have stated that CLWA is acting improperly by considering the Monterey Amendment and the Project to be in effect, suggesting that the Project water transfer is in jeopardy. CLWA considers this position to be invalid for two reasons:

1. The Monterey Amendment Settlement Agreement provides that "the Parties [to the Settlement Agreement] will jointly request that the Superior Court enter an order approving this Settlement Agreement, and an order, pursuant to California Public Resources Code Section 21168.9, authorizing on an interim basis the administration and operation of the SWP and the Kern Water Bank in accordance with the Monterey Amendments . . . ." The Sacramento Superior Court has entered such an order and the SWP continues to operate in accordance with the Monterey Amendment, which includes the provision under which the Project was implemented.

2. Notwithstanding two requests from the petitioners in the "*Friends*" case (one request having been made to the Court of Appeal and the other to the Superior Court), both courts declined to set aside the Project or to order suspension or termination of its operation pending completion of the Project EIR. CLWA's preparation of the Project EIR, its adoption of these Findings, the Statement of Overriding Consideration, the Mitigation and Monitoring Program and the Resolution based upon these Findings and the Statement of Overriding Considerations are steps required by, and conducted under the supervision of, the Superior Court to bring the Project into compliance with CEQA and to render the Resolution final. The Monterey Amendment settlement agreement provides at Page 11 that DWR's new Monterey Amendment Program EIR will include analysis of the Project as part of the overall analysis of the environmental impacts of completed Table A Amount permanent transfers.

C. CLWA's water supply from the SWP allows CLWA's customers, who are water retailers, to conjunctively use the SWP supplies and their local groundwater supplies, to the extent each retailer has access to groundwater. Conjunctive use programs acknowledge that reliance on only one water supply in certain circumstances can result in delivery shortages. By expanding the range of water supply sources, a water supplier increases the long term reliability of its supply. For example, when climactic or other conditions reduce the local water supplies, the water purveyor can turn to its SWP deliveries to replace (in whole or in part) the local supplies, "resting" the groundwater basins and allowing them to recharge. In other years, when reduced SWP supplies available from Northern California result in SWP delivery shortages, Southern California water agencies can rely on local groundwater or other local supplies as a back-up to the SWP supply. Having this flexibility available enhances a water purveyor's overall supply reliability and reduces the need to cut back deliveries to customers. The SWP supplies also provide a safeguard against long-term overdraft of local groundwater basins.

D. Deliveries of SWP water are not assured. In years when DWR is unable to deliver the full amounts requested by CLWA and the SWP contractors, DWR allocates available SWP water to the contractors in proportion to their respective Table A Amounts. By implementing the Project, not only does CLWA increase its deliveries in good supply years, it also increases its proportionate deliveries in short supply years.

E. Project opponents point to the Project as being growth inducing because it removes one obstacle to growth. The Project EIR acknowledges the indirect Project impacts from growth. The positive aspect of removing this obstacle to growth is that local planning agencies have prepared their planning documents with the objective of building out their plan areas in a manner that meets the needs of their communities. People must live somewhere and businesses must be located to meet the needs of the local population. Although the Project doesn't meet all of the projected demand, it provides some part of the water needed for the anticipated growth.

F. The population of California, particularly Southern California, continues to grow at a remarkable rate. CLWA's service area is a popular site for housing for people who work in the Los Angeles area. Los Angeles County's Development Monitoring System (DMS) attempts to track all pending, approved, and recorded development projects within the City of Santa Clarita and the unincorporated area of Los Angeles County, and the City of Santa Clarita also maintains its own separate records in addition to the DMS. To the extent possible, CLWA's mission includes meeting the needs of the projected population within CLWA's service area, taking into account the DMS and City of Santa Clarita information.

G. CLWA paid $48 Million for the Project, financing the acquisition of 41,000 acre feet per year of Table A Amount through the sale of tax exempt obligation bonds. This money already has been paid to Wheeler Ridge-Maricopa Water Service District and CLWA has been servicing the bonds since the initial transfer in 1999. In addition, CLWA has paid to DWR a fixed annual cost for this Table A Amount of approximately $6.8 Million. CLWA has a substantial investment in the Project, the cost of which is being borne by current water users.

EXHIBIT "C"

STATEMENT OF OVERRIDING CONSIDERATIONS

FINAL ENVIRONMENTAL IMPACT REPORT

The Board of Directors of the Castaic Lake Water Agency ("CLWA") adopts and makes this Statement of Overriding Considerations concerning the proposed Project's unavoidable significant impacts[1] to explain why the proposed Project's benefits override and outweigh the unavoidable significant impacts of the Project.

The proposed Project will bring substantial benefits to CLWA, including increased water supply reliability to meet current demand within the CLWA service area and increased overall water supply to serve a portion of the growth within CLWA through 2025 as projected by one regional agency, as specifically described in the Southern California Association of Governments' ("SCAG") currently adopted demographic forecasts for the Santa Clarita Valley area, and as described in adopted General and Specific Plans of local land use agencies (See Final EIR, Vol. I, pp. 5-7 and 5-11.)

Without the Project, permanent damage could occur to groundwater resources within CLWA's service area. Specifically, without the provision of an additional water supply for CLWA, existing use could overstress groundwater supplies in dry years and increase the potential for perchlorate contamination to spread, causing a significant local groundwater quality impact. Without the provision of an additional supply for CLWA, projected growth could not be accommodated within the parameters of existing environmental requirements, as the current groundwater sources in their present state could not meet the likely demands of this projected growth. (See Final EIR, Vol. I, pp 3.15-15 through 3.15-22, 7-10 and 7-11.) In addition, the failure to provide adequate water supplies to accommodate and meet the County of Los Angeles' and City of Santa Clarita's General Plan population, housing, and employment projections, for which local governments have already planned and/or constructed infrastructure, would have devastating consequences to the area's economy. These consequences include potential over-crowding in existing housing, increased costs of housing in an already expensive Southern California housing market, and economic loss to developers with approved or recorded but un-built projects, due to delay or an inability to obtain approval for completion. Furthermore, businesses considering relocating or expanding in the CLWA area may be reluctant to invest capital because of uncertainties related to water supplies, lack of adequate and affordable housing for employees, and stagnant local markets for goods and services. (See Final EIR, Vol. I, pp. 7-4 and 7-5.)

[1] Those unavoidable environmental impacts are indirect impacts to aesthetics, air quality, biological resources, transportation and circulation systems, and utilities and services, resulting from potential growth utilizing the Project water.

In contrast, the Project's provision of supplemental water supplies to accommodate much of the growth projected in adopted plans of local jurisdictions within CLWA would increase the provision of jobs and housing in the area. The additional housing and jobs will facilitate the regional housing and employment goals established by SCAG. The Project will mitigate the projected water shortage of one-million acre-feet in the year 2020 identified as an environmental impact by SCAG in its 1989 EIR for its Growth Management Plan. Attainment of regional housing and employment goals will help fulfill State policies to ameliorate a serious State housing shortage. (See Health and Safety Code § 51003(a).) The alternatives to the proposed Project considered in the Final EIR are not expected to result in substantially reduced environmental impacts when compared to the proposed Project, taking into consideration the Project objectives and the most feasible means to accomplish those objectives. Additional water supply for CLWA from sources other than a State Water Project transfer would be less reliable, more costly and/or more difficult to deliver.

The CLWA Board of Directors finds that the proposed Project's unavoidable significant impacts are acceptable in light of the Project's benefits as set forth herein. Each benefit set forth below constitutes an overriding consideration applicable to each and every identified unavoidable significant impact, warranting approval of the Project, independent of the other benefits, despite each and every unavoidable impact:

1. Increase the reliability of CLWA's current supply to meet existing demand.
2. Avoid the use of groundwater within CLWA in amounts beyond conservative estimates of operational yield to meet existing demand in dry years, as well as in future years.
3. Meet a portion of the water need for currently approved and pending housing development projects within CLWA.
4. Mitigate the projected water shortage identified as a significant impact by SCAG in its 1989 EIR for its Growth Management Plan.
5. Meet a portion of the water need for growth projected in the General and Specific Plans by local land use agencies.
6. Provide some of the water supply for new housing needed to foster economic growth, increase jobs and increase local tax revenue.
7. Facilitate the availability of new housing to meet regional goals for housing and to further State policies to ameliorate a serious housing shortage.
8. Provide additional water supply that is calculated to provide as nearly as possible the supply needed to meet projected water demand for the next 20 years.
9. Provide additional water to CLWA that will be more reliable, easy to deliver and economical as compared to alternative sources.

EXHIBIT "D"

MITIGATION AND MONITORING PROGRAM

FINAL ENVIRONMENTAL IMPACT REPORT

Mitigation measures identified in the Final EIR would avoid or substantially lessen some of the potentially significant indirect impacts of the Project that might be caused by development, as found by CLWA in the Specific Project CEQA Findings A-O (Exhibit "B").

Because CLWA is a water wholesaler (and retailer with respect to portions of its service area), other government jurisdictions, and not CLWA, have the authority and responsibility to place conditions upon approval of such proposals, which conditions would avoid or substantially lessen significant potential indirect environmental effects identified in the Final EIR, including those mitigation measures identified in the Final EIR and referenced in Specific Project CEQA Findings A-O (Exhibit "B").

Thus, CLWA's Mitigation Monitoring Program consists of CLWA monitoring of applications and environmental review for development projects that are submitted to CLWA by the developers in the process of obtaining service connections for those projects, of CLWA recommendations to land use agencies that they apply appropriate conditions of development project approval, and of regular CLWA reporting to its Board. Such CLWA monitoring and reporting is already in place and operating at this time pursuant to CLWA's development impact fee procedure, which procedure obtains data about new service connections directly from developers in lieu of obtaining reports from the land use agencies. CLWA regularly prepares and presents to its Board a Quarterly Water Supply Status Report and a biannual Data Document, each of which summarize water service connection data for the applicable time period.

CLWA RETURN TO WRIT

EXHIBIT NO. 2

Amended Notice of Completion of Draft Environmental Impact Report

State Clearinghouse
'90 Tenth Street
Sacramento, CA 95812-3044

Project Title:
Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of Table A Amount, State Clearinghouse Number 1998041127

Lead Agency:
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
Contact: Dan Masnada, General Manager

The original Notice of Completion of Draft Environmental Impact Report referenced above was filed with the State Clearinghouse on June 17, 2004. It is incorporated in full herein by reference and is amended as follows:

Review Period:
The review period originally identified as June 17 through July 31, 2004 has been extended to August 16, 2004. During this 60-day public review period of the Draft EIR, the public has the opportunity to review the document and make written comments. Please send all written comments to the address listed below, on or before August 16, 2004.

A public meeting will be held to receive comments on the Draft EIR on July 28, 2004 at 7:00 P.M. at the CLWA offices located at 27234 Bouquet Canyon Road, Santa Clarita, CA.

Paper copies of the Draft EIR are available for review or purchase at the address listed below, along with a list of other locations where the Draft EIR and documents referenced in the Draft EIR will be available for public review. The Draft EIR also is available from CLWA in an electronic format on CD.

Direct Written Comments to:
Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
(661) 297-1600

June 17, 2004

General Manager
Castaic Lake Water Agency

Notice of Completion of
Draft Environmental Impact Report

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95812-3044

Project Title:
Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of Table A Amount, State Clearinghouse Number 1998041127

Project Location - Specific:
The Project would use existing State Water Project (SWP) facilities located between the southern Delta facilities and Castaic Lake; these facilities include the SWP's southern Delta facilities (Clifton Court Forebay, the Banks Pumping Plant, and Bethany Reservoir); the San Luis Reservoir facilities (San Luis Reservoir, O'Neil Forebay, and the Gianelli Pumping-Generating Plant); and the California Aqueduct from the southern Delta to Castaic Lake, including pumping plants, a power plant, and storage facilities along the Aqueduct (Buena Vista, Teerink, Chrisman, Edmonston, and Oso pumping plants, Warne power plant, and Quail, Pyramid and Castaic lakes). These facilities are located in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Merced, San Joaquin, and Stanislaus counties. The Project also could affect environmental resources located in the Castaic Lake Water Agency (CLWA) and Wheeler Ridge-Maricopa Water Storage District (WRMWSD) service areas. The CLWA service area is located in northern Los Angeles and eastern Ventura counties. The WRMWSD is located in the southern extent of the San Joaquin Valley in Kern County.

Description of Project:
The Project is the transfer of an existing 41,000 AF of SWP Table A Amount from the Kern County Water Agency (KCWA) and its member unit in Kern County, WRMWSD, to CLWA. The Project also includes the use of SWP facilities from Northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and the use of his water within the CLWA service area. The Project water is transported from certain points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The points of origin and delivery are identified in the 41,000 AF Transfer Agreement, which addressed the transfer of 41,000 AF of SWP Table A Amount from KCWA and its member unit, WRMWSD, to CLWA, and the Point of Delivery Agreement between DWR, KCWA, and CLWA.

The 41,000 AF Transfer Agreement and the Point of Delivery Agreement were evaluated previously in the Supplemental Water Project Final EIR prepared by CLWA in 1999. The transfer of SWP Table A Amount that is the subject of the present EIR was contractually completed in 1999, and imported water supply associated with the transfer became available for use by CLWA starting in January 2000.

The Second Appellate Court, Fourth Division and the Superior Court of Los Angeles ordered that this EIR be decertified in January 2002 (*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal. App. 3d 1373 [*Friends*]) because it tiered from the Monterey Agreement Program EIR, which was itself decertified as a result of an appellate court decision issued while *Friends* was on appeal. "All other contentions" concerning the legal adequacy of the Supplemental Water Project EIR were found to be "without merit." The Court of Appeal specifically ordered the Trial Court to "issue a writ of mandate vacating the certification of the EIR," and to "retain jurisdiction until [CLWA] certifies an EIR complying with CEQA," and "consider such orders it deems appropriate under section 21168.9 [of the Public Resources Code]." The CLWA Board of Directors decertified CLWA's Supplemental Water Project Final EIR on November 27, 2002.

In September 2002, the Trial Court was requested to prohibit CLWA from using the 41,000 AF in any manner. Trial Court refused to enjoin the performance of the 41,000 AF Transfer Agreement, maintained its jurisdiction over the matter, and authorized CLWA to utilize "any of the 41,000 AFY [acre-feet per year]," albeit, with certain limitations:

> Respondent [CLWA] will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper.

The above Order was issued without prejudice to a renewed request by the Petitioner for an injunction on all of portions of CLWA's project pending completion of the EIR[1]. The present EIR is being prepared in accordance with the decisions of the Second Appellate Court, Fourth Division and the Superior Court of Los Angeles (Superior Court Case No. BS05694).

KCWA, WRMWSD, CLWA, and DWR previously approved the various contract amendments on the basis of the 1999 Supplemental Water Project Final EIR and other environmental analyses and documentation.

The Project currently is being implemented by an amendment to the SWP water supply contracts of CLWA and KCWA. The Project is to authorize CLWA to use the 41,000 AF of water from the SWP Table A Amount for water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area.

The Project does not include the construction of any additional SWP facilities or new facilities in the CLWA, KCWA, or WRMWSD service areas.

Purpose and Need:

The portion of the CLWA service area that is located within the unincorporated and incorporated portions of Los Angeles County is experiencing substantial growth in population and urbanization. This trend is expected to continue based on development that already has been approved by the County of Los Angeles and the City of Santa Clarita and development that is projected in local adopted plans. Pursuant to the provisions of its SWP Water Supply Contract, CLWA has over time acquired a right to delivery of SWP water at an amount necessary to reasonably supply the Agency's increasing demand. The Project is an action by CLWA to maintain the water supply needed to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area.

Specific Project objectives are as follows:

- Augment CLWA's SWP Table A Amount to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area.
- Provide a means of delivery for the augmented water supplies.

Significant Effects of the Project:

No significant direct impacts would occur in any of the three geographic areas evaluated. Very minor, less than significant impacts to aesthetic/visual resources, cultural resources, and geology and soils would occur at San Luis Reservoir due to the slight seasonal change in the timing of water delivered from the reservoir. Imperceptible or very minor, less than significant impacts to water quality in the Delta could result in some years due to a minor change in the timing of Delta diversions. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta. Other changes associated with the SWP are less than significant impacts from increased electrical power demand and air emissions from the generation of electrical power to move water from WRMWSD to the CLWA service area.

The only impact to WRMWSD is a less than significant impact to groundwater quality from the minor reduction of SWP Table A supply that has been replaced by other water management actions. Under some extreme conditions this could result in increased reliance on other water sources and groundwater. Increased use of other water and groundwater would result in higher TDS water used and recharged to local groundwater.

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[1] Petitioners appealed the Remand Order issued by the Superior Court in this case. The Court of Appeal affirmed the trial court's order (refusing the request for an injunction) on December 1, 2003.

The additional water supply provided by the Project would remove an obstacle to growth, and significant, indirect, growth-related impacts to all environmental resources could result from Project implementation. Compliance with the adopted plans and policies of local jurisdictions would reduce all of these impacts to less than significant, with the possible exception of five resources: aesthetics, air quality, biological resources, transportation/traffic, and utilities/service systems (solid waste disposal). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA.

No significant cumulative impacts resulting from the Project were identified for the SWP and associated facilities or the WRMWSD. Significant cumulative Project impacts in the CLWA service area would be as described under indirect impacts, and the same mitigation measures would apply. Impacts to aesthetics, air quality, biological resources, transportation/traffic, and utilities/service systems (solid waste disposal) could be unavoidable.

Lead Agency:
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
Contact: Dan Masnada, General Manager

Review Period:
June 17 through July 31, 2004. During this 45-day public review period of the Draft EIR, the public has the opportunity to review the document and make written comments. Please send all written comments to the address listed below, on or before July 31, 2004.

A public meeting will be held to receive comments on the Draft EIR on July 28, 2004 at 7:00 P.M. at the CLWA offices located at 27234 Bouquet Canyon Road, Santa Clarita, CA.

Paper copies of the Draft EIR are available for review or purchase at the address listed below, along with a list of other locations where the Draft EIR and documents referenced in the Draft EIR will be available for public review. The Draft EIR also is available from CLWA in an electronic format on CD.

Direct Written Comments to:
Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
(661) 297-1600

CLWA RETURN TO WRIT

EXHIBIT NO. 3

DRAFT

Environmental Impact Report

California State Clearinghouse No. 1998041127

Castaic Lake Water Agency

Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

CASTAIC LAKE WATER AGENCY

June 2004

DRAFT

Environmental Impact Report

California State Clearinghouse No. 1998041127

Castaic Lake Water Agency

Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

CASTAIC LAKE WATER AGENCY

Prepared for:

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Prepared by:

Science Applications International Corporation
An Employee-Owned Company
525 Anacapa Street, Santa Barbara, California 93101

June 2004

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PREFACE

This Environmental Impact Report (EIR) evaluates the potential environmental impacts of the transfer of an existing 41,000 acre-feet (AF) of State Water Project (SWP) Table A Amount[1] from a SWP contractor (the Kern County Water Agency [KCWA]) and its member unit in Kern County (the Wheeler Ridge-Maricopa Water Storage District [WRMWSD]), to the Castaic Lake Water Agency (CLWA), another SWP contractor located in Los Angeles and Ventura counties. This EIR also evaluates the use of SWP facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. These actions are referred to as "the Project" in subsequent sections of this EIR.

The Project is intended to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. CLWA is not a land use agency and has no control over where and when growth will occur within its service area. To the extent that land use decision-makers utilize or rely on this EIR to predict future CLWA water supplies, they are cautioned that although CLWA will implement all feasible measures to firm up its water supplies (and CLWA's retail purveyors may implement conjunctive use programs using SWP and groundwater supplies to increase the reliability of deliveries to their customers), past water deliveries are not a guarantee of future delivery rates. Rather than repeat this advice to decision-makers in each section of the EIR, the reader is requested to keep this advice in mind when reading the information about the availability and reliability of water supplies wherever such information appears. Information regarding water supplies is presented throughout this document as it relates to the CLWA service area (section 1.3.1), the Project description (section 2.3), the environmental setting (section 3.0), and growth-inducing effects and growth-related impacts (Chapter 4). To facilitate your reading of this EIR, it is suggested that the reader refer to section 10.0, "List of Acronyms and Glossary of Terms." The acronyms used in this EIR are defined the first time they are used in the text.

The transfer of SWP Table A Amount that is the subject of the present EIR was contractually completed in 1999, and imported water supply associated with the transfer became available for use by CLWA starting in January 2000 (refer to the discussion under Related Environmental Documentation for additional detail).

CLWA is the lead agency for preparation of the EIR and thus will evaluate, and if appropriate, certify this EIR, make CEQA findings, and approve the Project. CLWA has the principal responsibility for carrying out and implementing the Project because 1) a substantial portion of

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1 "Table A" is a term used in SWP Water Supply Contracts. The "Table A Amount" is the annual maximum amount of water to which an SWP Contractor has a contract right to request delivery, and is specified in Table A of each Contractor's Water Supply Contract. (Prior to the Settlement Agreement arising out of a legal challenge to the Monterey Amendment to the State Water Project contracts, the Table A Amount was referred to as "entitlement.") The amount of water actually available for delivery in any year may be an amount less than the Contractor's Table A Amount due to a number of factors, including hydrologic conditions. The parallel term used in the member unit contract between KCWA and WRMWSD is "Contract Entitlement" (sometimes referred to as "Table 1 Entitlement"). For the sake of brevity, in this EIR the term "Table A Amount" refers to the Table A Amount in the SWP Water Supply Contracts, or "Annual Entitlement" prior to the Monterey Amendment; where the term is used in connection with WRMWSD, it refers to the Table 1 Entitlement under its member unit contract with KCWA.

the Project occurs within CLWA's jurisdiction and substantially affects CLWA; 2) CLWA has been the lead proponent of the Project and has assumed the primary task of effectuating the SWP water supply contract amendment; 3) CLWA has the expertise to implement the Project; and 4) the Project, although requiring the use of SWP facilities, would involve transfers only between three agencies (CLWA, KCWA, and WRMWSD) within a limited geographic area and does not implicate the entire statewide water rights or supply framework.

The California Department of Water Resources (DWR), KCWA, and WRMWSD are considered to be responsible agencies. Responsible agencies are public agencies other than the lead agency that have responsibility for carrying out or approving a project (CEQA Guidelines section 15381).

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

Project Location

The Project would use existing SWP facilities located between the southern Delta facilities and Castaic Lake; these facilities include the SWP's southern Delta facilities (Clifton Court Forebay, the Banks Pumping Plant, and Bethany Reservoir); the San Luis Reservoir facilities (San Luis Reservoir, O'Neil Forebay, and the Gianelli Pumping-Generating Plant); and the California Aqueduct from the southern Delta to Castaic Lake, including pumping plants, a power plant, and storage facilities along the Aqueduct (Buena Vista, Teerink, Chrisman, Edmonston, and Oso pumping plants, Warne power plant, and Quail, Pyramid and Castaic lakes). These facilities are located in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Merced, San Joaquin, and Stanislaus counties. The Project also could affect environmental resources located in the CLWA and WRMWSD service areas. The CLWA service area is located in northern Los Angeles and eastern Ventura counties. The WRMWSD is located in the southern extent of the San Joaquin Valley in Kern County.

Project Objectives

The portion of the CLWA service area that is located within the unincorporated and incorporated portions of Los Angeles County is experiencing substantial growth in population and urbanization. This trend is expected to continue based on development that already has been approved by the County of Los Angeles and the City of Santa Clarita and development that is projected in local adopted plans. (Considerably less growth is occurring in or is anticipated to occur in the portion of the service area that is in Ventura County since this area is designated for agricultural or open space uses in the general plan, and the Ventura County Save Open-Space and Agricultural Resources [SOAR] Initiative requires a vote of the people for most changes to the general plan policies and land use designations regarding open space, agricultural, and rural lands.) Pursuant to the provisions of its SWP Water Supply Contract, CLWA has over time acquired a right to delivery of SWP water at an amount necessary to reasonably supply the Agency's increasing demand. The Project is an action by CLWA to maintain the water supply needed to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area.

Specific Project objectives are as follows:

- Augment CLWA's SWP Table A Amount to meet water demands of existing users and some future anticipated growth.
- Provide a means of delivery for the augmented water supplies.

Description of the Project

The Project is the transfer of an existing 41,000 AF of SWP Table A Amount from KCWA and its member unit in Kern County, WRMWSD, to CLWA. The Project also includes the use of SWP

facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. The Project water is transported from certain points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The points of origin and delivery are identified in the 41,000 AF Transfer Agreement and the Point of Delivery Agreement. These and other documents referenced in this EIR are available for public inspection at the CLWA offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350, (661) 297-1600.

The Project currently is being implemented by an amendment to the SWP water supply contracts of CLWA and KCWA executed in 1999. The Project is to authorize CLWA to use water delivered from the 41,000 AF of SWP Table A Amount for water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. As described in detail in section 3.15 and Appendix D, the annual allocations of SWP water made by DWR are based on that year's hydrologic conditions, the amount of water in storage in the SWP system, and Contractors' requests for SWP supplies. Thus, the actual amount of water available for delivery to CLWA as a result of the 41,000 AF transfer would vary from year to year. (Section 3-0 outlines the assumptions used in the environmental impact analysis regarding the amount of water that would be delivered for use by CLWA.) Water would be requested by CLWA as needed to meet the demands of its service area, and as discussed in section 1.3.1, the transfer of Table A Amount would be one of a number of projects implemented by CLWA (e.g., infrastructure improvements, groundwater banking programs, increased recycling and conservation, and expanded use of local groundwater sources) to increase water reliability. Those projects that are considered reasonably foreseeable and for which sufficient information is available are included in the cumulative impacts analysis contained in section 6.3.3.1 of this EIR.

The Project does not include the construction of any additional SWP facilities or new facilities in the CLWA, KCWA, or WRMWSD service areas.

Permits and Other Approvals to Implement the Project

The amendment to the SWP water supply contract was approved by CLWA and DWR in 1999. Associated amendments to water supply and delivery contracts have been approved by KCWA and WRMWSD. WRMWSD is the KCWA member unit providing this Table A Amount. No permits or other approvals would be required other than the certification of this EIR.

RELATED ENVIRONMENTAL DOCUMENTATION

Supplemental Water Project EIR

The transfer of 41,000 AF of SWP Table A Amount between CLWA, KCWA, and WRMWSD (41,000 AF Transfer Agreement) and the Point of Delivery Agreement between DWR, KCWA, and CLWA were evaluated previously in the Supplemental Water Project Final EIR (CLWA 1999).

The Second Appellate Court, Fourth Division and the Superior Court of Los Angeles ordered that this EIR be decertified in January 2002 (*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal. App. 3d 1373 [*Friends*]) because it tiered from the Monterey Agreement Program EIR, which was itself decertified as a result of an appellate court decision issued while

Friends was on appeal. "All other contentions" concerning the legal adequacy of the Supplemental Water Project EIR were found to be "without merit." The Court of Appeal specifically ordered the Trial Court to "issue a writ of mandate vacating the certification of the EIR," and to "retain jurisdiction until [CLWA] certifies an EIR complying with CEQA," and "consider such orders it deems appropriate under section 21168.9 [of the Public Resources Code]." The CLWA Board of Directors decertified CLWA's Supplemental Water Project Final EIR on November 27, 2002.

In September 2002, the Trial Court was requested to prohibit CLWA from using the 41,000 AF in any manner. Trial Court refused to enjoin the performance of the 41,000 AF Transfer Agreement, maintained its jurisdiction over the matter, and authorized CLWA to utilize "any of the 41,000 AFY [acre-feet per year]," albeit, with certain limitations:

> Respondent [CLWA] will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper.

The above Order was issued without prejudice to a renewed request by the Petitioner for an injunction on all portions of CLWA's project pending completion of the EIR[1]. The present EIR is being prepared in accordance with the decisions of the Second Appellate Court, Fourth Division and the Superior Court of Los Angeles (Superior Court Case No. BS05694).

KCWA, WRMWSD, CLWA, and DWR previously approved the various contract amendments on the basis of the 1999 Supplemental Water Project Final EIR and other environmental analyses and documentation.

Monterey Amendment Program EIR

During the 1990s, disagreements arose between DWR, Agricultural Contractors, and municipal and industrial (M&I) Contractors about how available SWP supplies should be allocated. The SWP Contractors and DWR agreed to negotiate a settlement of their differences and develop a new approach to managing SWP resources through a major overhaul of the Water Supply Contracts. After a series of exhaustive negotiating sessions, an agreement was reached in December 1994 in Monterey, California on a set of principles, known as the "Monterey Agreement." The Monterey Agreement principles were implemented through an amendment to the Water Supply Contracts between DWR and the SWP Contractors, which became known as the "Monterey Amendment." The term "Monterey Amendment" is used in subsequent sections of this EIR. The Monterey Amendment was approved in 1995 and went into effect in August 1996.

A Program EIR analyzing the environmental impacts of the Monterey Amendment (Monterey Agreement EIR) was prepared and certified by the Central Coast Water Authority (CCWA) in 1995. In late 1995, a lawsuit was filed by the Planning and Conservation League (PCL), Plumas County Water Conservation and Flood Control District (Plumas County), and Citizens

1 Petitioners appealed the Remand Order issued by the Superior Court in this case. The Court of Appeal affirmed the Trial Court's order (refusing the request for an injunction) on December 1, 2003.

Planning Association of Santa Barbara County (CPA) (collectively referred to as the "plaintiffs") challenging the EIR. The plaintiffs argued that the environmental impact analysis prepared was inadequate because CCWA was not a proper lead agency and the EIR analysis did not reflect the inability of the SWP to deliver full Contract amounts to Contractors, even though they held contractual "entitlements" to those supplies. In 2000, the California State Court of Appeal (Third District) found that a new EIR must be prepared. That litigation is referred to as the PCL Litigation in this EIR.[2]

Discussions to mediate a settlement began in 2001 and were finalized in May 2003.[3] All parties to the litigation have signed the Settlement Agreement. The Settlement Agreement calls for DWR to prepare a new EIR pursuant to CEQA (a Notice of Preparation [NOP] was issued by DWR on January 24, 2003),[4] while the Monterey Amendment's provisions remain in operation. Pursuant to the Settlement Agreement, the parties are now administering the preparation of a new EIR, which is expected to be completed in approximately two years. The new EIR will evaluate the potential environmental impacts of changes to SWP operations incorporated in the Monterey Amendment and the Settlement Agreement. The Settlement Agreement also calls for DWR to produce a biennial SWP Delivery Reliability Report. The SWP Delivery Reliability Report - 2002 was issued in May 2003 (DWR 2003b). The Settlement Agreement did not change the substance of the Monterey Amendment, but addressed the process by which the new Monterey Amendment EIR will be prepared.

It should be noted at this point that the Settlement Agreement concerning the PCL Litigation creates a specific exclusion for this Project from any prohibitions against transfers of State Water Project Table A Amounts by the Settlement Agreement. The exclusion states:

> With respect to Section III(c)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation in the Los Angeles County Superior Court following remand from the Second District Court of Appeal (See Friends of the Santa Clara River v. Castaic Lake Water Agency 95 Cal.App.4th 1373, 116 Cal.Rptr.2d 54 (2002); review denied, April 17, 2002). The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation.

The order on remand from the appellate court in the Friend case specifically ordered the Trial Court "to retain jurisdiction until [CLWA] certifies an EIR complying with CEQA" and "consider such orders it deems appropriate under section 21168.9 [of the Public Resources Code]." This EIR thus remains under the jurisdiction of the Superior Court until the EIR is certified by CLWA.

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2 *Planning and Conservation League, et al. v. Department of Water Resources* (2000) 83 Cal. App. 4th 892.

3 In May 2003, the settlement agreement among the plaintiffs, DWR, and the SWP Contractors (referred to herein as the "Settlement Agreement") was executed and approved by the State Attorney General's office. On May 20, 2003 the Settlement Agreement was approved by the Sacramento Superior Court.

4 The NOP is entitled Notice of Preparation of Environmental Impact Report for the Monterey Amendment to the State Water Project Contracts (Including Kern Water Bank Transfer) and Other Contract Amendments and Associated Actions as part of a Proposed Settlement Agreement in Planning and Conservation League v. Department of Water Resources.

Capital Program and Water Plan, including Acquisition of Supplemental Water and of a Proposed Second Plant Site, EIR

In 1988, CLWA completed the Capital Program and Water Plan, including Acquisition of Supplemental Water and of a Proposed Second Plant Site, Final EIR (Capital Program EIR) (CLWA 1988), which evaluated the potential environmental impacts of the proposed Capital Improvements Program, including the acquisition of supplemental water, and the construction of a new treatment plant and facilities improvements. The Capital Program EIR evaluated a proposal for CLWA to obtain additional SWP Table A Amount of up to 37,800 AF to supplement the 1988 SWP Table A Amount of 41,500 AF. This EIR assumed that deliveries from the new SWP Table A Amount would become 100 percent reliable before 2010. It also identified a total water demand of 120,000 AFY to support a population of 270,000 persons in the year 2010. The implementation of reasonable conservation measures and recycling was projected to reduce net demand to 106,300 AFY, an approximately 11 percent reduction. The Project evaluated in the present EIR was programmatically evaluated in the Capital Program EIR (CLWA 1988).

ENVIRONMENTAL SETTING

CEQA Guidelines section 15125 directs that an EIR must include a description of the physical environmental conditions in the vicinity of the Project as they exist at the time the NOP is published. This environmental setting will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant. This Project was previously analyzed in the 1999 Supplemental Water Project Final EIR (CLWA 1999); the 41,000 AF Transfer Agreements were duly executed, and the Project was implemented. Solely relying on the description of physical conditions that existed at the time that the NOP for the present EIR was published (January 2003) would fail to capture any changes to the pre-Project conditions that may have resulted from the ongoing implementation of the 41,000 AF Transfer Agreement. Thus, this EIR's description of the Project's environmental setting includes information from the general timeframe when the January 2003 NOP was issued (referred to as current or present conditions), as well as information describing the environmental setting as it existed when the NOP for the 1999 Supplemental Water Project Final EIR was published (April 1998).

SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Table ES-1 summarizes the direct and indirect impacts of the Project, mitigation measures for significant impacts, and the residual impacts that would occur after the implementation of mitigation measures. No significant direct impacts would occur in any of the three geographic areas evaluated. Very minor, less than significant impacts to aesthetic/visual resources, cultural resources, and geology and soils would occur at San Luis Reservoir due to the slight seasonal change in the timing of water delivered from the reservoir. Imperceptible or very minor, less than significant impacts to water quality in the Delta could result in some years due to a minor change in the timing of Delta diversions. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta. Other changes associated with the SWP are less than significant impacts from increased electrical power demand and air emissions from the generation of electrical power to move water from WRMWSD to the CLWA service area.

The only impact to WRMWSD is a less than significant impact to groundwater quality from the minor reduction of SWP Table A supply that has been replaced by other water management actions. Under some extreme conditions this could result in increased reliance on other water sources and groundwater. Increased use of other water and groundwater would result in higher TDS water used and recharged to local groundwater.

The additional water supply provided by the Project would remove an obstacle to growth, and significant, indirect, growth-related impacts to all environmental resources could result from Project implementation. Compliance with the adopted plans and policies of local jurisdictions would reduce all of these impacts to less than significant, with the possible exception of five resources: aesthetics, air quality, biological resources, transportation/traffic, and utilities/service systems (solid waste disposal). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA.

CUMULATIVE IMPACTS

No significant cumulative impacts resulting from the Project were identified for the SWP and associated facilities or the WRMWSD. Significant cumulative Project impacts in the CLWA service area would be as described under indirect impacts, and the same mitigation measures would apply. Impacts to aesthetics, air quality, biological resources, transportation/traffic, and utilities/service systems (solid waste disposal) could be unavoidable.

ALTERNATIVES TO THE PROJECT

Five alternatives were carried forward for detailed analysis.

Alternative 1, No Project Alternative

Under the No Project Alternative, CLWA would not acquire the additional Table A Amount or acquire the associated contractual rights for delivery of water associated with the transfer. The demand for high quality surface water is expected to increase throughout all of southern California as a result of continued growth, and local planning agency documents project continuing growth in the CLWA service area. The contract right to the Table A Amount that is the subject of the Project could be acquired and transferred to other portions of urbanized California. The amount, timing, and location of such a transfer are highly speculative, however, and this scenario is not considered further. Two hypothetical scenarios have been carried forward for detailed analysis that are intended to define a reasonable range of possible actions that could occur under this alternative. Actions relating to future land development are not under the control of CLWA, however, and could vary depending upon the actions of agencies with land use planning and permitting authority.

Scenario 1 –Moratorium on New Development, Existing Users Subject to Delivery Cutbacks (Moratorium Scenario)

In the absence of the Project, under this scenario, a moratorium on new development would be implemented. This assumes that the local retail water purveyors[5] within the CLWA service area decide that there is insufficient water to issue "will serve" letters to supply development and that local land use agencies respond by imposing a moratorium on new development in the CLWA service area.

Under this scenario, development that had already been approved or recorded but not yet built in the Santa Clarita Valley would not be built, nor would pending (unapproved) development. (Approved projects are subdivisions that have been granted an approved tentative tract map that is not yet recorded or has expired; recorded projects are subdivisions that have recorded a final tract map but are not yet built.) The 1998 DMS included 15,973 housing units (8,588 approved, 2,292 recorded, and 5,093 pending). The 2002 DMS included 33,113 housing units (13,586 approved, 9,915 recorded, and 9,612 pending). Assuming 3.1 persons per household, this amount of development would result in a population of approximately 49,510 persons, using the 1998 DMS, and 102,640 persons, using the 2002 DMS. In comparison, the Project could support approximately 35,600 housing units given an average year water supply, which would house approximately 106,700 persons. Thus, the amount of development and associated population that could be allowed under this scenario would be less than could occur under the Project.

Some additional groundwater production wells might be required to serve existing demand that would have been met by the 41,000 AF transfer. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

Scenario 2 –Build-Out of Recorded and Approved Projects in DMS (Build-Out Scenario)

Under the Build-Out Scenario, approved and recorded projects listed in the DMS for the Santa Clarita Valley would be developed, notwithstanding the potential shortfall in reliable water supply. Based on the DMS from both 1998 and 2002, the number of housing units in approved and recorded DMS projects considered under this scenario (10,880 and 23,500 units, respectively) is less than the number of housing units that could be supported by the Project given an average year water supply of 34,400 AF (35,600 units). The population associated with the development identified in the 1998 DMS would be about 33,730 persons; the population associated with the 2002 DMS development would be about 72,850 persons. In comparison, the population that could be served by the Project would be about 106,700 persons. Thus, the amount of development and associated population that could be allowed under this scenario would be less than could occur under the Project.

Under this scenario, existing demand currently met by the 41,000 AF transfer and the increased water demand from new development would rely on existing water supplies (principally local groundwater resources) that are currently not used for urban purposes. Treatment at the

5 The CLWA Act refers to "retail water distributors," although the term "retail water purveyors" also is commonly used. For purposes of this report, the terms are synonymous.

wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

Alternative 2, Increased Extractions from the Saugus Formation (Increased Groundwater Extractions)

Under this alternative, in lieu of the Project, up to 41,000 AFY would be extracted from the Saugus Formation and delivered to users in the CLWA service area. The extraction would be accomplished by increased use of existing wells and by the installation of 15 additional wells, pumps, and wellhead treatment facilities. Existing or new distribution facilities such as pipelines and pumping stations would be used to transport this water to existing and planned treated water distribution facilities. Pumps and treatment facilities would use electrical power. Wherever possible, distribution facilities would be placed in public rights-of-way, including streets, utility, and railroad corridors. Disturbed areas would be restored to their former appearance once construction was completed. It is estimated that approximately 40 acres would be disturbed by the new facilities, which would be constructed and operated either by CLWA, individual purveyors, or other parties. A detailed geohydrologic investigation would be necessary prior to drilling on a site-by-site basis.

Until contaminant remediation is completed, existing, localized perchlorate contamination in a small part of the Saugus Formation would limit potential well locations. Field studies and groundwater modeling activities are in progress to evaluate how best to hydraulically contain the portion of the aquifer system where production wells have been shut down, while simultaneously preventing perchlorate movement to currently unimpacted areas. The field studies have included the installation and sampling of monitoring wells at multiple depths and locations on and around the Whittaker-Bermite site, the most likely source of perchlorate; water level monitoring in these wells; aquifer testing of two unimpacted water supply wells; and groundwater velocity testing in alluvial monitoring wells located between the site and the Santa Clara River. These studies have helped the water purveyors and the Whittaker Corporation further refine the current understanding of groundwater flow patterns in specific areas on and near the site (such as along the Holser Fault). This information has been incorporated into a regional groundwater flow model that has been developed by the purveyors and whose calibration and construction was recently reviewed and approved by the California Department of Toxic Substances Control (DTSC). The model is being used to identify a pumping scheme that would meet the objectives of restoring the lost water supply from the impacted wells (with wellhead treatment) while simultaneously containing perchlorate and hydraulically limiting its movement downgradient to unimpacted wells and other portions of the aquifer system where new water supply wells might be constructed. The modeling analysis accounts not only for the pumping of impacted wells, but also (a) the 2000 Urban Water Management Plan's (UWMP) pumping plan for unimpacted wells throughout the Santa Clarita Valley and (b) the significant year-to-year variation in local hydrology (especially groundwater recharge) that occurs in the Valley (CH2MHill 2004). The modeling simulations will be used to guide selection of a final pumping plan for the impacted Alluvial Aquifer well and the impacted Saugus Formation wells. The selection of a final pumping plan will be made jointly by the purveyors and the Whittaker Corporation, with regulatory oversight and permitting performed by the California Department of Health Services (CA DHS) with technical support from the DTSC.

There are numerous wells in the Saugus Formation, other than the wells that were voluntarily shut down due to perchlorate contamination. Additionally, other Saugus wells are planned for construction, including those included in CLWA's Capital Improvements Program. If operated continuously during the year, the wells not subject to perchlorate contamination have the capability to produce approximately 21,000 AFY (personal communication, L. Takaichi 2004). However, a more realistic production capability is 15,000 AFY due to periodic shutdown for maintenance, monitoring, or storage limitations (personal communication, L. Takaichi 2004). The current groundwater production capability from the Saugus Formation is estimated to be 5,000 AFY during normal years but could reach 15,000 AFY during dry periods or other periods of need (personal communication, L. Takaichi 2004). These capabilities will increase as additional production wells in the Saugus Formation are completed and a response action to perchlorate contamination is implemented.

Alternative 3, Exchange Desalinated Water for SWP Water (Desalination/Exchange)

This alternative comprises two primary components in lieu of the Project: (1) CLWA would contribute a portion of the funds needed by another agency to develop a seawater desalination facility along the southern California coast; and (2) up to 41,000 AFY of desalinated water produced by this facility would be exchanged with CLWA for SWP water. A likely partner in such an arrangement would be The Metropolitan Water District of Southern California (Metropolitan). If both parties agreed, CLWA would enter into a contract with Metropolitan indicating that a portion of Metropolitan's annual SWP Table A Amount would be delivered to Castaic Lake for use by CLWA in exchange for CLWA's contribution to a desalination facility to be constructed by Metropolitan. CLWA would treat and distribute this SWP water in existing CLWA facilities, and Metropolitan would use water from the desalination facility in lieu of the SWP water exchanged with CLWA.

Assuming a 50 percent recovery rate, a plant capacity of approximately 73 mgd would be required to produce 41,000 AFY. Depending on the extent of ancillary facilities included at the site, a site of at least 2 acres could be required. In addition to the desalting plant, the coastal facility would likely include new electrical power conveyance and control equipment, ocean water intake and brine disposal structures, and a treated water pumping plant. Total site area could be up to 5 acres. Depending on site location, additional pipelines and related pumping facilities may be required to convey the desalinated water a short distance to the existing Metropolitan distribution facilities.

Alternative 4, Transfer of a Smaller Table A Amount (Smaller Table A Amount)

Under this alternative, CLWA would acquire a smaller amount of SWP Table A Amount than under the Project. A transfer of approximately 20,000 AF of SWP Table A Amount was analyzed since it is the approximate mid-point between the amount that would be transferred under the Project and the No Project Alternative. Existing facilities would be used, as described for the Project.

Since the demand for high quality surface water is expected to increase in southern California as a result of anticipated growth, the remaining SWP Table A Amount (21,000 AF) could be acquired and transferred to other (unidentified) portions of urbanized southern California. The Table A Amount not acquired by CLWA would likely be acquired by other agencies with

growing urban water demands. However, the timing, amount, and location of the transfer(s) as well as the associated impacts are speculative and are not evaluated under this alternative.

Alternative 5, Transfer of a Larger Table A Amount (Larger Table A Amount)

Under this alternative, CLWA would acquire a larger SWP Table A Amount than under the Project. Such an alternative would require the use of a larger proportion of the SWP facilities and capacities than described for the Project, and would attempt to reduce or avoid the effects of reductions in SWP supplies (during periods of drought) on local groundwater resources. In order to provide an analysis of impacts of a transfer greater than the Project (transfer of 41,000 AF of Table A Amount), a transfer of approximately 60,000 AF of SWP Table A Amount was established for this alternative. This Table A Amount is potentially available from other KCWA member units who have expressed interest in reducing their Table A Amount and have completed CEQA analysis of the sale of this contract right (e.g., Belridge Water Storage District, Berrenda Mesa Water District, and Lost Hills Water District [BWSD 1998; BMWD 1996]). Existing facilities would be used, as described for the Project.

Environmentally Superior Alternative

Scenarios 1 and 2 of Alternative 1, the No Project Alternative, would reduce or avoid the significant indirect (growth-related) impacts of the Project, but each would result in greater direct impacts since new groundwater wells, treatment facilities, and associated pipelines would be required. Additionally, each of these scenarios could result in significant unavoidable impacts to groundwater supply and groundwater quality. This alternative would not augment CLWA's water supply and therefore would not meet the Project objectives. Since the direct impacts of the No Project Alternative would be substantially greater than the Project and since it would not meet Project objectives, this alternative is not considered environmentally superior.

Alternative 2, the Increased Groundwater Extractions Alternative, would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts. It would result in greater direct impacts to many environmental resources because new groundwater wells, treatment facilities, and pipelines would have to be constructed. It also would result in a significant, unavoidable impact to groundwater supply, whereas the Project would result in a beneficial impact to groundwater supply through recharge. This alternative would not augment CLWA's water supply and therefore would not meet the Project objectives. Because the direct impacts of the Increased Groundwater Extractions Alternative would be substantially greater than the Project and since it would not meet Project objectives, this alternative is not considered environmentally superior.

Alternative 3, the Desalination/Exchange Alternative, would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts. It would result in greater direct impacts to many environmental resources from the construction and operation of a new desalination plant and pipeline. This alternative would augment CLWA's water supply since desalinated water would be exchanged with another water agency's SWP Table A Amount, which would be conveyed to existing CLWA facilities, and therefore would meet the Project objectives. Because the direct impacts of the

Desalination/Exchange Alternative would be substantially greater than the Project, however, this alternative is not considered environmentally superior.

Alternative 4, the Smaller Table A Amount Alternative, would reduce the potentially significant indirect impacts of the Project and would result in similar or lessened direct impacts, as well. This alternative would not meet one of the two Project objectives, however, which is to "Augment CLWA's SWP Table A Amount to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area." Thus, while this alternative would result in lessened direct and indirect impacts, it does not meet an important basic Project objective[6] and is not considered the environmentally superior alternative.

Alternative 5, the Larger Table A Amount Alternative, would increase the significant indirect impacts of the Project and would result in similar or greater direct impacts, as well. It would meet the Project objectives but would result in greater environmental impacts than the Project and is not considered environmentally superior.

The Project is identified as the environmentally superior alternative that meets Project objectives.

AREAS OF KNOWN CONTROVERSY

The previous EIR on the Project was decertified because it tiered from the Monterey Agreement Program EIR, which was itself decertified as a result of an appellate court decision. The present EIR does not tier from this or any other EIR, and examines environmental impacts that would occur with and without the change in water allocation criteria implemented as part of the Monterey Amendment. Although the Monterey Amendment continues in operation under the Settlement Agreement, this EIR evaluates a reasonable worst-case scenario of SWP operations without the Monterey Amendment.

The potential for growth inducement as a result of the increased water supply to the CLWA service area is an area of known controversy.

The availability of local water supplies has been the subject of some controversy in the Santa Clarita Valley over the last few years. The water suppliers' consulting engineers recently calculated the availability of local groundwater at 50,000 AFY (Slade 2002) based on updated studies prepared using reasonable, accepted engineering and scientific practices (perchlorate remediation measures and recycled water use were considered in these studies). Some Santa Clarita Valley residents have questioned the conclusions of these studies and claim that only about 32,000 AFY of water is available based on conclusions in an earlier report published in 1986 (Slade 1986). They also claim that water from the Saugus Formation should not be calculated as available on a long-term basis until the perchlorate contamination in a small part of this formation is fully contained or remediated. CLWA, CLWA Santa Clarita Water Division, Newhall County Water District, and Valencia Water Company have received $8 million as reimbursement for litigation costs and studies to determine the cleanup plan for the

6 Under CEQA Guidelines 15126.6, an EIR must describe a range of reasonable alternatives that would feasibly attain most of the basic objectives of the proposed project but would avoid or substantially lessen significant impacts of the project.

perchlorate. CLWA and the retail purveyors are presently identifying the method of cleanup and the costs of cleanup to be paid by the insurance companies of Whitaker Bermite and related parties. It is anticipated the cleanup should be in place by 2006.

UNRESOLVED ISSUES

No unresolved environmental issues have been identified.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

(Page 1 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Aesthetic/ Visual Resources	SWP	**Less than significant.** Slight decrease in water stored in San Luis Reservoir from December through June.	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: Less than significant. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential changes to the visual characteristics and resources from development of open space and further urbanization of hillside and natural areas. Potential increase in the amount of night lighting and unwanted glare in presently undeveloped areas. (Growth-related impact)	DIRECT: None required. INDIRECT: Reduced by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Significant unavoidable adverse impacts.
Agricultural Resources	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential conversion of agriculture lands to non-agricultural uses or for changes in agricultural zoning by local jurisdictions in order to allow a higher density or intensity of development. (Growth-related impact)	DIRECT: None required. INDIRECT: Reduced by local governments implementing the policies of the County of Los Angeles, County of Ventura, and the Piru general and area plan.	DIRECT: None. INDIRECT: Less than significant.
Air Quality	SWP	**Less than significant.** Increased air emissions from the generation of additional electrical power to move water from WRMWSD to CLWA.	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: Less than significant. INDIRECT: None.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

(Page 2 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Air Quality (continued)	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential increase in air pollutant emissions from transportation and development. (Growth-related impact)	DIRECT: None required. INDIRECT: Reduced by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans. Additionally, reduced by compliance with SCAQMD plans.	DIRECT: None. INDIRECT: Significant unavoidable adverse impact.
Biological Resources	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Conversion and degradation of habitat; reduction/local extinction of local native plant and wildlife populations; including sensitive species; introduction of invasive non-native species; disruption of established wildlife corridors and native wildlife nursery sites; impacts on sensitive fish and amphibian populations due to wastewater discharge and polluted runoff; conflicts with local policies and ordinances protecting biological resources. (Growth-related impact)	DIRECT: None required. INDIRECT: Reduced by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans. State and federal regulatory agencies permit conditions may reduce significant impacts.	DIRECT: None. INDIRECT: Significant unavoidable impact.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

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Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Cultural Resources	SWP	**Less than significant.** Potential exposure of submerged cultural resources in San Luis Reservoir from December through June.	**No impact.**	DIRECT None required. INDIRECT: None required.	DIRECT: Less than significant. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential disturbance of human remains, archaeological, historical, and paleontological resources by excavation and grading activities associated with future development. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.
Geology and Soils	SWP	**Less than significant.** Slight increase in soil exposed to wind and water erosion at San Luis Reservoir from December through June.	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: Less than significant. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential from: geologic hazards, including fault rupture, seismically induced ground failure, and seiches, as well as causing permanent changes in topography, loss of topsoil, and removal of unique geologic features. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.
Hazards and Hazardous Materials	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

(Page 4 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Hazards and Hazardous Materials (continued)	CLWA	**Less than significant.** Incremental increase in use of hazardous materials to treat transferred water.	**Significant.** Previously contaminated sites may require the removal or remediation of soils before development. Potential increase in transport, use, and disposal of hazardous materials, along with increased risks of hazardous substance releases. Potential impairment of emergency response plans or emergency evacuation plans. Increased public exposure to wildland fires. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: Less than significant. INDIRECT: Less than significant.
Land Use and Planning	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential to division of a community or conflict with adopted land use plans. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.
Noise	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential short-term increases from construction and grading activities, increase in traffic-related emissions and changes in land uses. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures
(Page 5 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Population and Housing	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: Less than significant.
	CLWA	**No impact.**	**Significant.** Potential increase in population and housing. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.
Public Services	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential increase in demand for public facilities and services. (police, fire, schools, and library services). (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.
Recreation	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

(Page 6 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Recreation (continued)	CLWA	**No impact.**	**Significant.** Potential increase in demand for recreational resources. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.
Transportation/Traffic	SWP	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**No impact.**	**Significant.** Potential increase in traffic and the need for new or altered roads, highways, and transportation systems in the Santa Clarita Valley. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Significant unavoidable adverse impacts from increased vehicle trips due to growth in the Santa Clarita Valley.
Utilities and Service Systems	SWP	**Less than significant.** Additional electricity required to convey water to CLWA.	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: Less than significant. INDIRECT: None.
	WRMWSD	**No impact.**	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

(Page 7 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Utilities and Service Systems (continued)	CLWA	**Less than significant.** Additional demand for water treatment and electrical power to treat and distribute the transferred water within the CLWA service area.	**Less than significant.** Potential increase wastewater generation and demand for wastewater treatment; potential need for new storm water drainage facilities or the expansion of existing facilities. (Growth-related impact) **Significant.** Potential increased demand for solid waste disposal services; potential increased need for potable water treatment facilities. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans. Impacts to solid waste disposal may not be avoidable unless additional landfill capacity is approved and constructed.	DIRECT: None. INDIRECT: Significant unavoidable adverse impact related to increased demand for solid waste disposal services.
Water Resources	SWP	**Less than significant.** Imperceptible or minor change in water quality in the Delta due to minor changes in timing of Delta diversions in some years. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta.	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.

Table ES-1. Summary of the Project's Environmental Impacts and Mitigation Measures

(Page 8 of 8)

Environmental Resource	*Location*	*Direct Impacts*	*Indirect Impacts*	*Mitigation Measures*	*Residual Impacts*
Water Resources (continued)	WRMWSD	**Less than significant.** Minor reduction of SWP Table A supply that has been replaced by other water management actions. Under some extreme conditions this could result in increased reliance on other water sources and groundwater. Increased use of other water and groundwater would result in higher TDS water used and recharged to local groundwater.	**No impact.**	DIRECT: None required. INDIRECT: None required.	DIRECT: None. INDIRECT: None.
	CLWA	**Beneficial impact.** Increased imported water supply to meet anticipated demands. Increased SWP supply would replace water that could have otherwise been pumped from groundwater.	**Significant.** Potential increased demand on local groundwater resources during periods of reduced SWP deliveries could result in substantial short-term stressing of groundwater supplies. Potential alteration of surface flows, reduction of aquifer recharge and increased amount and rate of stormwater runoff. Increased flooding and peak flow rates could result in substantial erosion or siltation on- or off-site. (Growth-related impact)	DIRECT: None required. INDIRECT: Mitigated by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans.	DIRECT: None. INDIRECT: Less than significant.

1.0 INTRODUCTION

1.1 PURPOSE OF AND INTENDED USES OF THIS ENVIRONMENTAL IMPACT REPORT

This Environmental Impact Report (EIR) evaluates the potential environmental impacts of the transfer of an existing 41,000 acre-feet (AF) of State Water Project (SWP) Table A Amount[1] from a SWP contractor (the Kern County Water Agency [KCWA]) and its member unit in Kern County (the Wheeler Ridge-Maricopa Water Storage District [WRMWSD]), to the Castaic Lake Water Agency (CLWA), another SWP contractor located in Los Angeles and Ventura counties. This EIR also evaluates the use of SWP facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. These actions are referred to as "the Project" in subsequent sections of this EIR.

The Project is intended to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. CLWA is not a land use agency and has no control over where and when growth will occur within its service area. To the extent that land use decision-makers utilize or rely on this EIR to predict future CLWA water supplies, they are cautioned that although CLWA will implement all feasible measures to firm up its water supplies (and CLWA's retail purveyors may implement conjunctive use programs using SWP and groundwater supplies to increase the reliability of deliveries to their customers), past water deliveries are not a guarantee of future delivery rates. Rather than repeat this advice to decision-makers in each section of the EIR, the reader is requested to keep this advice in mind when reading the information about the availability and reliability of water supplies wherever such information appears. Information regarding water supplies is presented throughout this document as it relates to the CLWA service area (section 1.3.1), the Project description (section 2.3), the environmental setting (section 3.0), and growth-inducing effects and growth-related impacts (Chapter 4). To facilitate your reading of this EIR, it is suggested that the reader refer to section 10.0, "List of Acronyms and Glossary of Terms." The acronyms used in this EIR are defined the first time they are used in the text. The California Environmental Quality Act (CEQA) requires preparation of an EIR when an agency action is believed to have a potential for significant impacts to the environment. An EIR is "a public document used by the governmental agency to analyze the significant environmental effects of a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid the possible environmental damage" (Title 14, California Code of Regulations [CCR], section 15002). An EIR serves as an informational document for decision-makers and the general public alike. This is a Project EIR addressing actions that were anticipated and

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1 "Table A" is a term used in SWP Water Supply Contracts. The "Table A Amount" is the annual maximum amount of water to which an SWP Contractor has a contract right to request delivery, and is specified in Table A of each Contractor's Water Supply Contract. (Prior to the Settlement Agreement arising out of a legal challenge to the Monterey Amendment to the State Water Project contracts, the Table A Amount was referred to as "entitlement.") The amount of water actually available for delivery in any year may be an amount less than the Contractor's Table A Amount due to a number of factors, including hydrologic conditions. The parallel term used in the member unit contract between KCWA and WRMWSD is "Contract Entitlement" (sometimes referred to as "Table 1 Entitlement"). For the sake of brevity, in this EIR the term "Table A Amount" refers to the Table A Amount in the SWP Water Supply Contracts, or "Annual Entitlement" prior to the Monterey Amendment; where the term is used in connection with WRMWSD, it refers to the Table 1 Entitlement under its member unit contract with KCWA.

programmatically evaluated in the certified Capital Program and Water Plan, including Acquisition of Supplemental Water and of a Proposed Second Plant Site Final EIR (Capital Program EIR) (CLWA 1988), described below in section 1.2.4.

CLWA is the lead agency for preparation of the EIR and thus will evaluate, and if appropriate, certify this EIR, make CEQA findings, and approve the Project. CLWA has the principal responsibility for carrying out and implementing the Project because 1) a substantial portion of the Project occurs within CLWA's jurisdiction and substantially affects CLWA; 2) CLWA has been the lead proponent of the Project and has assumed the primary task of effectuating the SWP water supply contract amendment; 3) CLWA has the expertise to implement the Project; and 4) the Project, although requiring the use of SWP facilities, would involve transfers only between three agencies (CLWA, KCWA, and WRMWSD) within a limited geographic area and does not implicate the entire statewide water rights or supply framework. All documents referenced in this EIR are available for public inspection at the CLWA offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350, (661) 297-1600.

The California Department of Water Resources (DWR), KCWA, and WRMWSD are considered to be responsible agencies. Responsible agencies are public agencies other than the lead agency that have responsibility for carrying out or approving a project (CEQA Guidelines section 15381).

1.2 RELATED ENVIRONMENTAL DOCUMENTATION

1.2.1 Supplemental Water Project EIR

The transfer of 41,000 AF of SWP Table A Amount from KCWA and its member unit, WRMWSD, to CLWA (41,000 AF Transfer Agreement) and the Point of Delivery Agreement between DWR, KCWA, and CLWA were evaluated previously in the Supplemental Water Project Final EIR (CLWA 1999). The transfer of SWP Table A Amount that is the subject of the present EIR was contractually completed in 1999, and imported water supply associated with the transfer became available for use by CLWA starting in January 2000.

The Second Appellate Court, Fourth Division and the Superior Court of Los Angeles ordered that this EIR be decertified in January 2002 (*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal. App. 3d 1373 [*Friends*]) because it tiered from the Monterey Agreement Program EIR, which was itself decertified as a result of an appellate court decision issued while *Friends* was on appeal (refer to section 1.2.3 for a discussion of the Monterey Agreement EIR). "All other contentions" concerning the legal adequacy of the Supplemental Water Project EIR were found to be "without merit." The Court of Appeal specifically ordered the Trial Court to "issue a writ of mandate vacating the certification of the EIR," and to "retain jurisdiction until [CLWA] certifies an EIR complying with CEQA," and "consider such orders it deems appropriate under section 21168.9 [of the Public Resources Code]." The CLWA Board of Directors decertified CLWA's Supplemental Water Project Final EIR on November 27, 2002.

In September 2002, the Trial Court was requested to prohibit CLWA from using the 41,000 AF in any manner. Trial Court refused to enjoin the performance of the 41,000 AF Transfer Agreement, maintained its jurisdiction over the matter, and authorized CLWA to utilize "any of the 41,000 AFY [acre-feet per year]," albeit, with certain limitations:

> Respondent [CLWA] will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper.

The above Order was issued without prejudice to a renewed request by the Petitioner for an injunction on all of portions of CLWA's project pending completion of the EIR[2]. The present EIR is being prepared in accordance with the decisions of the Second Appellate Court, Fourth Division and the Superior Court of Los Angeles (Superior Court Case No. BS05694).

KCWA, WRMWSD, CLWA, and DWR previously approved the various contract amendments on the basis of the 1999 Supplemental Water Project Final EIR and other environmental analyses and documentation.

1.2.2 Monterey Amendment Program EIR

During the 1990s, disagreements arose between DWR, Agricultural Contractors, and municipal and industrial (M&I) Contractors about how available SWP supplies should be allocated. The SWP Contractors and DWR agreed to negotiate a settlement of their differences and develop a new approach to managing SWP resources through a major overhaul of the Water Supply Contracts. After a series of exhaustive negotiating sessions, an agreement was reached in December 1994 in Monterey, California on a set of principles, known as the "Monterey Agreement." The Monterey Agreement principles were implemented through an amendment to the Water Supply Contracts between DWR and the SWP Contractors, which became known as the "Monterey Amendment." The term "Monterey Amendment" is used in subsequent sections of this EIR. The Monterey Amendment was approved in 1995 and went into effect in August 1996. A summary of the provisions of the Monterey Amendment is provided in section 1.4.2.

A Program EIR analyzing the environmental impacts of the Monterey Amendment (Monterey Agreement EIR) was prepared and certified by the Central Coast Water Authority (CCWA) in 1995. In late 1995, a lawsuit was filed by the Planning and Conservation League (PCL), Plumas County Water Conservation and Flood Control District (Plumas County), and Citizens Planning Association of Santa Barbara County (CPA) (collectively referred to as the "plaintiffs") challenging the EIR. The plaintiffs argued that the environmental impact analysis prepared was inadequate because CCWA was not a proper lead agency and the EIR analysis did not reflect the inability of the SWP to deliver full Contract amounts to Contractors, even though they held contractual "entitlements" to those supplies. In 2000, the California State Court of Appeal (Third District) found that a new EIR must be prepared. That litigation is referred to as the PCL Litigation in this EIR.[3]

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2 Petitioners appealed the Remand Order issued by the Superior Court in this case. The Court of Appeal affirmed the trial court's order (refusing the request for an injunction) on December 1, 2003.

3 *Planning and Conservation League, et al. v. Department of Water Resources* (2000) 83 Cal. App. 4th 892.

Discussions to mediate a settlement began in 2001 and were finalized in May 2003.[4] All parties to the litigation have signed the Settlement Agreement. The Settlement Agreement calls for DWR to prepare a new EIR pursuant to CEQA (a Notice of Preparation [NOP] was issued by DWR on January 24, 2003),[5] while the Monterey Amendment's provisions remain in operation. Pursuant to the Settlement Agreement, the parties are now administering the preparation of a new EIR, which is expected to be completed in approximately two years. The new EIR will evaluate the potential environmental impacts of changes to SWP operations incorporated in the Monterey Amendment and the Settlement Agreement. The Settlement Agreement also calls for DWR to produce a biennial SWP Delivery Reliability Report. The SWP Delivery Reliability Report - 2002 was issued in May 2003 (DWR 2003b) (see section 1.3.2). The Settlement Agreement did not change the substance of the Monterey Amendment, but addressed the process by which the new Monterey Amendment EIR will be prepared.

It should be noted at this point that the Settlement Agreement concerning the PCL Litigation creates a specific exclusion for this Project from any prohibitions against transfers of State Water Project Table A Amounts by the Settlement Agreement. The exclusion states:

> With respect to Section III(C)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation in the Los Angeles County Superior Court following remand from the Second District Court of Appeal (*See Friends of the Santa Clara River v. Castaic Lake Water Agency 95 Cal.App.4th 1373, 116 Cal.Rptr.2d 54 (2002); review denied, April 17, 2002*). The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation.

The order on remand from the appellate court in the Friend case specifically ordered the Trial Court "to retain jurisdiction until [CLWA] certifies an EIR complying with CEQA" and "consider such orders it deems appropriate under section 21168.9 [of the Public Resources Code]." This EIR thus remains under the jurisdiction of the Superior Court until the EIR is certified by CLWA.

1.2.3 Capital Program and Water Plan, including Acquisition of Supplemental Water and of a Proposed Second Plant Site, EIR

In 1988, CLWA completed the Capital Program and Water Plan, including Acquisition of Supplemental Water and of a Proposed Second Plant Site, Final EIR (Capital Program EIR) (CLWA 1988), which evaluated the potential environmental impacts of the proposed Capital Improvements Program, including the acquisition of supplemental water, and the construction of a new treatment plant and facilities improvements. The Capital Program EIR evaluated a proposal for CLWA to obtain additional SWP Table A Amount of up to 37,800 AF to supplement the 1988 SWP Table A Amount of 41,500 AF. This EIR assumed that deliveries

4 In May 2003, the settlement agreement among the plaintiffs, DWR, and the SWP Contractors (referred to herein as the "Settlement Agreement") was executed and approved by the State Attorney General's office. On May 20, 2003 the Settlement Agreement was approved by the Sacramento Superior Court.

5 The NOP is entitled Notice of Preparation of Environmental Impact Report for the Monterey Amendment to the State Water Project Contracts (Including Kern Water Bank Transfer) and Other Contract Amendments and Associated Actions as part of a Proposed Settlement Agreement in Planning and Conservation League v. Department of Water Resources.

from the new SWP Table A Amount would become 100 percent reliable before 2010. It also identified a total water demand of 120,000 AFY to support a population of 270,000 persons in the year 2010. The implementation of reasonable conservation measures and recycling was projected to reduce net demand to 106,300 AFY, an approximately 11 percent reduction. The Project evaluated in the present EIR was programmatically evaluated in the Capital Program EIR (CLWA 1988).

1.3 WATER AGENCIES AND DISTRICTS INVOLVED IN THE WATER TRANSFER

1.3.1 Castaic Lake Water Agency

The CLWA service area comprises approximately 195 square miles (124,800 acres) in Los Angeles and Ventura counties, as shown on Figure 1.2-1. CLWA serves the incorporated and unincorporated areas in, or adjacent to, the Santa Clarita Valley. Most of this area, including the incorporated cities, is within the geographic boundaries of Los Angeles County, but it also extends into a small portion of eastern Ventura County. The service area includes largely urban areas, such as the City of Santa Clarita, other smaller communities, and rural areas. The West Branch of the California Aqueduct terminates at Castaic Lake, in the northern portion of the service area.

CLWA, a water wholesaler, was created by the California Legislature in 1962 through passage of the "Castaic Lake Water Agency Law." At the time, its principal purpose was contracting with the State of California, through DWR, to acquire and distribute SWP water to its four local retail water purveyors: CLWA's Santa Clarita Water Division, Los Angeles County Waterworks District No. 36, Newhall County Water District, and Valencia Water Company. Subsequent legislation broadened CLWA's purpose, which now includes, but is not limited to, the following:

- acquire water from the state;
- distribute such water wholesale through a transmission system to be acquired or constructed by CLWA;
- reclaim (recycle) water;
- sell water at retail within certain boundaries; and
- exercise other related powers.

Adequate planning for, and the procurement of, a reliable water supply is a fundamental function of the CLWA. CLWA obtains its water supply for wholesale purposes principally from the SWP and has a Water Supply Contract with DWR for 95,200 AF of SWP Table A Amount. The transfer of 41,000 AF of this 95,200 AF to CLWA is, however, the subject of this EIR. Therefore, for the purposes of evaluating the environmental impacts of the Project, CLWA is assumed to have 54,200 AF of SWP Table A Amount. This represents the pre-Project baseline situation.

CLWA has evaluated the long-term water needs (water demand) within its service area based on applicable county and city plans and has compared these needs against existing and potential water supplies. CLWA prepared the Capital Improvements Program in 1988, and in

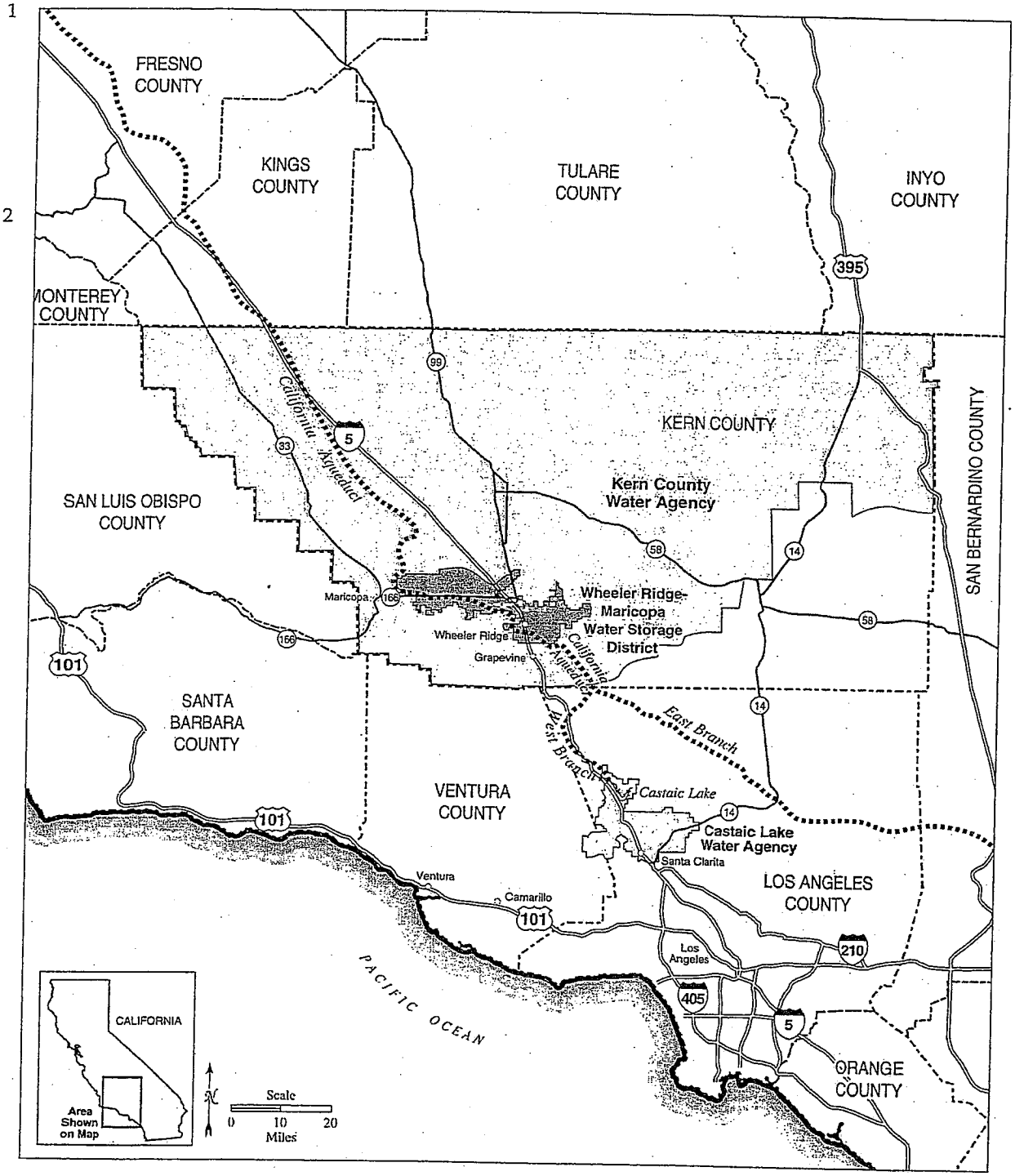


Figure 1.2-1. Regional Setting Including Kern County Water Agency, Wheeler Ridge-Maricopa Water Storage District, and Castaic Lake Water Agency

2000 published the 2000 Urban Water Management Plan (UWMP) to address water supply and demand issues. (The UWMP was challenged in the Superior Court of Kern County and a judgment was entered in July 2003 upholding the UWMP in all respects. The petitioners in that case have appealed the judgment. The UWMP is and remains a valid document as of the time of the preparation of this EIR. The UWMP is scheduled for update in 2005.) The Capital Improvements Program and UWMP address reclamation (recycling) options, supplemental supply, and physical improvements. Based on projected demands (and despite potential savings from conservation programs, reclamation of existing water supplies for irrigation, and expanded use of local groundwater sources), supplemental water sources appear to be needed. Water banking also appears to be needed to improve overall reliability of the water supply, particularly during periods of drought.

The availability of local water supplies has been the subject of some controversy in the Santa Clarita Valley over the last few years. The water suppliers' consulting engineers recently calculated the availability of local groundwater at 50,000 AFY (Slade 2002) based on updated studies prepared using reasonable, accepted engineering and scientific practices (perchlorate remediation measures and recycled water use were considered in these studies). Some Santa Clarita Valley residents have questioned the conclusions of these studies and claim that only about 32,000 AFY of water is available based on conclusions in an earlier report published in 1986 (Slade 1986). They also claim that water from the Saugus Formation should not be calculated as available on a long-term basis until the perchlorate contamination in a small part of this formation is fully contained or remediated. CLWA, CLWA Santa Clarita Water Division, Newhall County Water District, and Valencia Water Company have received $8 million as reimbursement for litigation costs and studies to determine the cleanup plan for the perchlorate. CLWA and the retail purveyors are presently identifying the method of cleanup and the costs of cleanup to be paid by the insurance companies of Whitaker Bermite and related parties. It is anticipated the cleanup should be in place by 2006.

Planning for an adequate water supply to meet demands requires consideration of the reliability of SWP supplies, because history and statistical analysis indicate that the full contracted Table A Amount will not be available for delivery to the SWP Contractors in some years. While CLWA's contract with DWR sets the specific maximum of CLWA's SWP Table A Amount, the amount of SWP water actually available for delivery to CLWA and the other SWP Contractor agencies varies from year to year depending on hydrology, the amount of water in storage, the operational constraints and requirements imposed by regulatory agencies to meet environmental water needs, the amount of water requested by other SWP Contractors, climatic conditions, and other factors. The amount of Table A Amount water delivered to CLWA, and all other SWP Contractors is based on the requests for delivery and the amount of water available.

1.3.2 Kern County Water Agency and the Wheeler Ridge-Maricopa Water Storage District

KCWA, a water wholesaler, was created by the California Legislature in 1961 to secure and supply adequate water to its local member units in Kern County. KCWA includes most of Kern County, an area of approximately 8,160 square miles or 5.22 million acres (refer to Figure 1.2-1). KCWA's Water Supply Contract was 1,087,730 AF of SWP Table A Amount in 1998, but was reduced to 1,000,949 AF in 2003 because KCWA had completed several Table A transfers with

other SWP Contractors consistent with the terms of the Monterey Amendment since early 1999, including the 41,000 AF transferred to CLWA that is the subject of this EIR. Therefore, for the purposes of evaluating the environmental impacts of the Project, KCWA is assumed to have 1,087,730 AF of SWP Table A Amount, its SWP Table A Amount in 1998 (DWR 2001a).

WRMWSD, a retail water purveyor, was formed in 1959 by an election of landowners as provided by Division 14 of the California Water Code. The district contains approximately 228 square miles (146,000 acres) and is located in the southern end of the San Joaquin Valley in Kern County as shown in Figure 1.2-1. The district mostly occupies the valley floor and smooth sloping foothill lands at the southern apex of the San Joaquin Valley between the Coast Mountain Range to the west and the Tehachapi Mountain Range to the east. Lands within the district are used predominantly for agricultural purposes, although small areas of industrial development and the unincorporated community of Lakeview are within the district, along with the town site of Wheeler Ridge. The California Aqueduct traverses the district for approximately 34 miles, and the Teerink, Chrisman, and Edmonston pumping plants are all in, or within one mile of, the district.

WRMWSD obtains SWP water through a contract with KCWA. WRMWSD's contract is currently for 197,088 AF of SWP Table A Amount through KCWA; however, in 1998, prior to the implementation of the Project, WRMWSD's contract was for 238,088 AF of SWP Table A Amount. Therefore, for the purposes of evaluating the environmental impacts of the Project, WRMWSD is assumed to have 238,088 AF of Table A Amount. This represents the pre-Project baseline situation.

WRMWSD obtains its water supplies from the SWP, other surface water sources, and groundwater sources, and delivers water to agricultural and industrial users within the district. WRMWSD also participates in a variety of other water management activities, including groundwater banking programs outside of the district and other in-lieu and direct groundwater recharge programs[6] within the district. WRMWSD's distribution system consists of a series of pipelines, pumping plants, canals and related facilities that deliver surface water from 16 separate turnouts on the California Aqueduct to approximately 72,000 acres of lands with long term water service contracts.

Some of the landowners within the district have executed long-term contracts with WRMWSD for the delivery of surface water, including SWP water, by the WRMWSD distribution system. These lands are collectively referred to as "contract lands," and rely mainly on surface water to meet water demands. Approximately 49 percent of the lands in the WRMWSD hold contracts for surface water. Lands in WRMWSD that do not hold long-term contracts for surface water, or "non-contract lands," rely mainly on groundwater supplies to meet water demands. Surface water, including SWP water when available, can be delivered to certain non-contract lands within WRMWSD (generally those that historically have held contracts) via the existing WRMWSD distribution system.

6 In-lieu groundwater recharge is the process of recharging groundwater supplies by substituting surface water for groundwater that would otherwise be extracted and used. Direct groundwater recharge is the process of recharging groundwater supplies by the percolation of surface water supplies into the groundwater basin, most commonly done through the use of groundwater recharge ponds.

1.3.3 Department of Water Resources

DWR operates the SWP and is responsible for overall water planning for the state of California. This agency has long-term water supply contracts for water service from the SWP with 29 local agencies for about 4.2 million acre-feet (MAF) annually. DWR's State Water Project Analysis Office is responsible for negotiating and administering water contracts and acts as a contractor liaison with long-term SWP Contactors for water deliveries and special projects.

1.4 OVERVIEW OF SWP FACILITIES AND WATER SUPPLY CONTRACTS

This section is intended to provide the reader with an overview of the SWP facilities and Water Supply Contracts (Water Supply Contracts or Contracts) related to the Project to facilitate review of the project description and environmental impact analyses. A more detailed description is included in Appendix D.

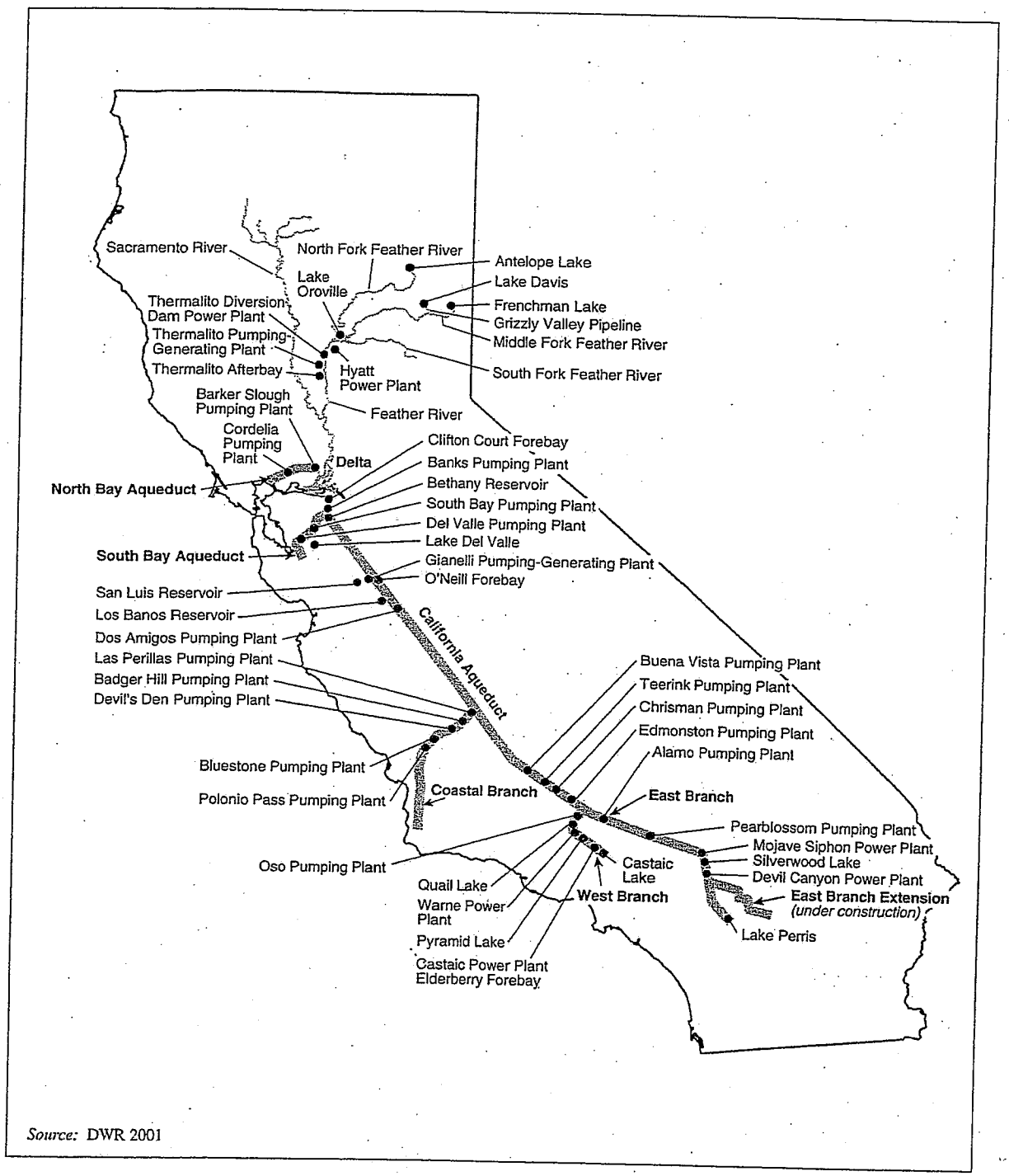
1.4.1 SWP Facilities

The SWP is a large water supply, storage, and distribution system authorized by an act of the California State Legislature in 1959. In 1960, California voters approved a $1.75 billion bond issue to begin building SWP facilities. Today, the SWP includes 28 storage facilities, reservoirs and lakes; 20 pumping plants; six pumping-generating plants and hydroelectric power plants; and about 660 miles of aqueducts and pipelines. These facilities are further described in section 3.15, Water Resources. Figure 1.3-1 provides an overview of SWP facilities.

The primary water source for the SWP is the drainage of the Feather River, a tributary of the Sacramento River. Runoff released from Oroville Dam in Butte County flows down natural channels to the Sacramento-San Joaquin River Delta (Delta), where some of the water is pumped through the North Bay Aqueduct to Napa and Solano counties. In the southern Delta, water is pumped from the Clifton Court Forebay by the Harvey O. Banks Delta Pumping Plant (Banks Pumping Plant) into the 444-mile-long, Governor Edmund G. Brown California Aqueduct (California Aqueduct).

The California Aqueduct conveys water to the primarily agricultural users in the San Joaquin Valley and the primarily urban regions of the San Francisco Bay Area, the Central Coast, and southern California. From the California Aqueduct, water is diverted into the South Bay Aqueduct for delivery to Contractors in Alameda and Santa Clara counties. Further downstream, water is delivered directly from the California Aqueduct to Contractors in the central and southern San Joaquin Valley, including WRMWSD and the other member units of the KCWA. Near Kettleman City, water is diverted into the SWP Coastal Branch Aqueduct, which carries water to San Luis Obispo and Santa Barbara counties and the northwestern portion of KCWA. The water is transported along the west side of the San Joaquin Valley through a series of four pumping plants before reaching the Edmonston Pumping Plant. This plant lifts the SWP water 1,926 feet over the Tehachapi Mountain Range. Water intended for use in southern California is conveyed through the West Branch to Castaic Lake and through the East Branch to Lake Perris, which are referred to as terminal reservoirs for the SWP.

The original plan for the SWP included constructing additional water storage facilities as Contractor demands increased, however, essentially no new construction of additional SWP storage facilities has occurred since the initial SWP facilities were completed. Although future



Source: DWR 2001

Figure 1.3-1. Primary SWP Facilities

construction or other actions can improve the quantity and reliability of SWP supplies (e.g., the CALFED Bay-Delta Program, the Napa Accord, and the South Delta Improvement Program), these actions entail their own environmental reviews, potential litigation delays, and multi-year construction period, therefore, it is likely to take many years before any additional storage and/or conveyance facilities that improve SWP reliability are operational. The reliability of SWP supplies will not likely improve in the foreseeable future.

1.4.2 SWP Water Supply Contracts

Overview

In 1960, DWR began executing individual Water Supply Contracts with public agencies throughout the State of California for financing and constructing SWP facilities designed to deliver water to each public agency. ("SWP Contractors" or "Contractors" collectively refer to the public agencies that hold SWP Water Supply Contracts with DWR.) Each Water Supply Contract identifies a Table A Amount, the annual maximum amount of water to which an SWP Contractor has a contract right. The Table A Amount is specified as either "agricultural" or "municipal and industrial" (M&I). Of CLWA's 54,200 AF of Table A Amount, 41,500 AF is designated as an M&I Table A Amount and 12,700 AF is an agricultural Table A Amount. WRMWSD's entire Table A Amount is an agricultural Table A Amount.

Each Contractor annually submits a request to DWR for water delivery in the following year, in any amount up to the Contractor's Table A Amount. The Water Supply Contracts provide that in a year when DWR is unable to deliver total Contractor requests, deliveries to all Contractors will be reduced so that total deliveries equal total available supply for that year. While SWP Contractors currently (2003) hold Table A Amounts totaling approximately 4.173 MAF, the amount of water actually requested by Contractors is less than that due to a number of M&I Contractors whose demands have not yet increased to their full Table A Amount. Even at these lower current demands, however, the SWP cannot meet all water delivery requests in some years due to operational and environmental constraints. Given existing SWP facilities, operational conditions, and Contractor demands, the SWP can deliver an annual average of approximately 2.96 MAF (DWR 2003b). As Contractor demands increase, the SWP is currently projected to be able to deliver an average of about 3.1 MAF (DWR 2003b).

Under the original Water Supply Contracts, the Agricultural Contractors agreed in years of shortage (i.e., when SWP supplies were insufficient to meet Contractors' requests) to first accept a certain amount of reduction in deliveries (the "initial agricultural reduction" before any remaining reduction was shared proportionately between the Agricultural and M&I Contractors. In exchange, the Agricultural Contractors received, among other favorable terms, a priority for "surplus" SWP supplies when available (i.e., SWP supplies that could be delivered in excess of Table A requests, generally available in wetter hydrologic years and/or in the early years of the SWP when demands were still low). Under the original plan for the SWP, which involved the construction of additional water storage facilities as Contractor demands increased, shortages in SWP supplies were anticipated to occur relatively infrequently and in small enough magnitudes that only Agricultural Contractors were expected to incur shortages. In the early 1990s, however, a multi-year drought coupled with increased SWP operational constraints and environmental water requirements due to the listing of several fish species as endangered or threatened, resulted in several years when SWP supplies fell below

Contractors' requests for deliveries. The initial agricultural provision in the Water Supply Contracts resulted in Agricultural Contractors receiving only half their requested supply in 1990 and no water in 1991, while the M&I Contractors received all of their requested supply in 1990 and 30 percent of their requests in 1991. Because Contractors pay their proportionate share of fixed project costs regardless of how much water is delivered, plus variable costs based on the amount of water delivered, Agricultural Contractors underwent severe delivery reductions but received little financial relief from their fixed project cost obligations. This situation led to increasing disagreements between DWR, the Agricultural Contractors, and the M&I Contractors about how available supplies should be allocated.

The Monterey Amendment

In 1994-1995, the SWP Contractors and the DWR agreed to negotiate a settlement of their differences and develop a new approach to managing SWP resources through a major overhaul of the Water Supply Contracts, known as the Monterey Amendment. The provisions of the Monterey Amendment are summarized below. Additional detail regarding the relationship between the Monterey Amendment and the Project is included in section 3.15.2.2 and Appendix D.

Allocation of SWP Water Supplies

- New method for allocation of all water supplies in proportion to each Contractor's contract amount (Table A Amounts).
- Elimination of the initial supply reduction to Agricultural Contractors in years of shortage (modification of Article 18(a) of the Water Supply Contracts).
- Replacement of certain categories of water with a single category of Article 21 water[7] allocated on the basis of Table A amounts and delivered at the same power rate as Table A Amounts.
- Elimination of the permanent shortage provision (Article 18(b) of the Water Supply Contracts).

Transfer of Table A Amounts and Land

- The permanent retirement of 45,000 AF of Table A Amount by Agricultural Contractors.
- Make 130,000 acre-feet of agricultural Table A Amounts available for permanent sale to M&I Contractors.[8]
- Transfer of the Kern Fan Element property to local control.

7 Water that DWR makes available when water and capacity are available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors' demands are low, and only under specific conditions that do not occur on an annual basis. This type of water is identified in Article 21 of the Water Supply Contracts. It is the same as, but replaced, unscheduled surplus water as part of the Monterey Amendment. Additionally, Article 21 water was defined under the Monterey Amendment as "interruptible water," but it is more commonly referred to as "Article 21 water." For purposes of the present EIR, the term "Article 21 water" is being used; however, both terms are presented in the water resources glossary in Chapter 3.15.

8 The 41,000 AF transfer associated with the Project represents a portion of the 130,000 AF transfer that the Agricultural Contractors agreed to make available for permanent transfer in the Monterey Amendment.

Water Management Provisions

- Enable voluntary water marketing, groundwater banking, and more effective use of existing SWP facilities.
- Explicitly provide for groundwater or surface storage of SWP water outside Contractor's service area for later use within its service area.
- Expand Contractor rights to store water in San Luis Reservoir when storage space is available.
- Specify Contractor rights to flexible storage in terminal reservoir facilities.
- Clarify terms for transport of non-SWP water in SWP facilities for Contractors.
- Create a Turnback Pool for the annual sale to interested Contractors of SWP supplies allocated to other Contractors but unneeded by them.

Financial Restructuring

- Use SWP funds to establish an SWP operating reserve.
- Establish a program of water rate management which, when SWP cash flow permits, provides for a credit in charges to M&I Contractors, as well as Agricultural Contractor trust funds for rate management.

The Monterey Amendment Litigation

In 1996, a lawsuit regarding the role of the DWR as the CEQA lead agency, among other issues, was filed (*Planning and Conservation League, et. al. vs. Department of Water Resources and Central Coast Water Authority*). Following Superior and Appellate Court decisions ordering the Monterey Agreement EIR to be decertified, mediation discussions were conducted. In July 2002, the discussions resulted in a statement of principles for the settlement of the litigation. In May 2003, the settlement agreement among the plaintiffs, DWR, and the SWP Contractors (referred to herein as the "Settlement Agreement") was executed and approved by the State Attorney General's office and by the Sacramento Superior Court. While complex, the key components applicable to this EIR are presented below:

- Continue operation under Monterey Amendment provisions.
- Establish a watershed forum for Plumas County to pursue watershed restoration and provide for amending Plumas County's Water Supply Contract regarding shortages.
- Amend and clarify SWP Water Supply Contracts to substitute in certain instances "Table A Amount" for "entitlement."
- Implement new procedures for disclosure of SWP delivery capabilities.
- Issue guidelines on permanent Table A Amount transfers.
- Establish procedures for public participation in certain Water Supply Contracts amendment negotiations.
- Provided certain funding to the plaintiffs for multiple purposes, including watershed restoration.

1.5 PUBLIC INVOLVEMENT PROCESS

The original decision to prepare an EIR for the Project was made following the completion of an Initial Study, which was filed with the California State Clearinghouse and distributed to interested parties on April 21, 1998. Comments on the April 1998 NOP and Initial Study were received from State agencies, regional and local governmental agencies, regional authorities, and non-governmental organizations. The comments received on the April 1998 NOP and Initial Study were considered by CLWA and helped refine the scope of the 1999 Supplemental Water Project EIR.

Subsequent to the court ordered decertification of the 1999 Supplemental Water Project EIR, a second NOP and Initial Study were distributed to the California State Clearinghouse and other potentially interested parties on January 22, 2003. Comments on the January 2003 NOP were received from State agencies, regional and local governmental agencies, regional authorities, and non-governmental organizations. The comments received on the January 2003 NOP were considered by CLWA and helped refine the scope of analysis of the present EIR. A copy of the January 2003 NOP and Initial Study and comment letters received are provided in Appendix A.

1.6 EIR ORGANIZATION

The Project is described in Chapter 2 of this EIR; the affected environment, environmental impacts of the Project, and mitigation measures for potentially significant impacts are described in Chapter 3 for each resource considered; growth inducement and growth-related impacts and mitigation measures are discussed in Chapter 4; consistency with adopted plans and policies is addressed in Chapter 5; cumulative impacts of the Project in combination with other projects are addressed in Chapter 6; Project alternatives, including alternatives eliminated from consideration, the No Project Alternative, and the Environmentally Superior Alternative, are considered in Chapter 7. The remaining sections include references; persons, agencies, and organizations consulted; acronyms and a glossary of technical terms; and a list of preparers. Appendix A contains the January 2003 NOP and letters received in response to the NOP. Appendix B contains Biological Resources data on sensitive species. Appendix C contains a study conducted by Northwest Economic Associates (NEA) study to determine the potential effects of the Project on agricultural operations in the WRMWSD (NEA 2003). Appendix D contains the Water Resources Technical Appendix, including a description of the operations modeling studies used and analyses performed in support of this EIR, a summary of the results of these analyses, and related information.

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Project would use existing SWP facilities located between the southern Delta facilities and Castaic Lake; these facilities include the SWP's southern Delta facilities (Clifton Court Forebay, the Banks Pumping Plant, and Bethany Reservoir); the San Luis Reservoir facilities (San Luis Reservoir, O'Neil Forebay, and the Gianelli Pumping-Generating Plant); and the California Aqueduct from the southern Delta to Castaic Lake, including pumping plants, a power plant, and storage facilities along the Aqueduct (Buena Vista, Teerink, Chrisman, Edmonston, and Oso pumping plants, Warne power plant, and Quail, Pyramid and Castaic lakes). These facilities are located in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Merced, San Joaquin, and Stanislaus counties. Figure 1.3-1 shows the location of the primary SWP facilities. The Project also could affect environmental resources located in the CLWA and WRMWSD service areas. The CLWA service area is located in northern Los Angeles and eastern Ventura counties. The WRMWSD is located in the southern extent of the San Joaquin Valley in Kern County. The locations of CLWA and WRMWSD are shown on Figure 1.2-1.

2.2 PROJECT OBJECTIVES

The portion of the CLWA service area that is located within the unincorporated and incorporated portions of Los Angeles County is experiencing substantial growth in population and urbanization. This trend is expected to continue based on development that already has been approved by the County of Los Angeles and the City of Santa Clarita and development that is projected in local adopted plans. Pursuant to the provisions of its SWP Water Supply Contract, CLWA has over time acquired a right to delivery of SWP water at an amount necessary to reasonably supply the Agency's increasing demand. The Project is an action by CLWA to maintain the water supply needed to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area.

Specific Project objectives are as follows:

- Augment CLWA's SWP Table A Amount to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area.
- Provide a means of delivery for the augmented water supplies.

2.3 DESCRIPTION OF THE PROJECT

The Project is the transfer of an existing 41,000 AF of SWP Table A Amount from KCWA and its member unit in Kern County, WRMWSD, to CLWA. The Project also includes the use of SWP facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and the use of his water within the CLWA service area. The Project water is transported from certain points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The points of origin and delivery are identified in the 41,000 AF Transfer Agreement and the Point of Delivery Agreement (see section 1.2.1).

The Project currently is being implemented by an amendment to the SWP water supply contracts of CLWA and KCWA. The Project is to authorize CLWA to use water delivered from the 41,000 AF of SWP Table A Amount for water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. As described in detail in section 3.15 and Appendix D, the annual allocations of SWP water made by DWR are based on that year's hydrologic conditions, the amount of water in storage in the SWP system, and Contractors' requests for SWP supplies. Thus, the actual amount of water available for delivery to CLWA as a result of the 41,000 AF transfer would vary from year to year. (Section 3-0 outlines the assumptions used in the environmental impact analysis regarding the amount of water that would be delivered for use by CLWA.) Water would be requested by CLWA as needed to meet the demands of its service area, and as discussed in section 1.3.1, the transfer of Table A Amount would be one of a number of projects implemented by CLWA (e.g., infrastructure improvements, groundwater banking programs, increased recycling and conservation, and expanded use of local groundwater sources) to increase water reliability. Those projects that are considered reasonably foreseeable and for which sufficient information is available are included in the cumulative impacts analysis contained in section 6.3.3.1 of this EIR.

The Project does not include the construction of any additional SWP facilities or new facilities in the CLWA, KCWA, or WRMWSD service areas.

2.4 PERMITS AND OTHER APPROVALS TO IMPLEMENT THE PROJECT

The amendment to the SWP water supply contract has been approved by CLWA and DWR. Associated amendments to water supply and delivery contracts have been approved by KCWA and WRMWSD. WRMWSD is the KCWA member unit providing this Table A Amount. No permits or other approvals would be required other than the certification of this EIR.

3.0 ENVIRONMENTAL SETTING, PROJECT IMPACTS, AND MITIGATION MEASURES

This chapter describes the environmental resources that could be affected by the Project, potential direct and indirect impacts to these resources, and mitigation measures that would minimize these impacts. (Growth-related indirect impacts are addressed in detail in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.) Direct impacts are those that are caused by and immediately related to the Project. Indirect impacts are not immediately related to the Project, but are reasonably foreseeable changes in the environment caused by the direct impacts (CEQA Guidelines section 15358). The facilities and geographic areas evaluated are the SWP (including the Delta, California Aqueduct, San Luis Reservoir, Castaic Lake, and associated pumping facilities); the WRMWSD, and the CLWA service area.

This section provides an overview of the general approach used to define the environmental setting for each resource and methods used to identify fundamental Project impacts that affect multiple resources. It also summarizes the physical changes that would result from the Project.

ENVIRONMENTAL SETTING

CEQA Guidelines section 15125 directs that an EIR must include a description of the physical environmental conditions in the vicinity of the Project as they exist at the time the NOP is published. This environmental setting will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant. This Project was previously analyzed in the 1999 Supplemental Water Project Final EIR (CLWA 1999); the 41,000 AF Transfer Agreements were thereafter duly executed, and the Project was implemented. Solely relying on the description of physical conditions that existed at the time that the NOP for the present EIR was published (January 2003) would fail to capture any changes to the original conditions that may have resulted from the ongoing implementation of the 41,000 AF Transfer Agreement. Thus, this EIR's description of the Project's environmental setting includes information from the general timeframe when the January 2003 NOP was issued (referred to as current or present conditions), as well as information describing the environmental setting as it existed when the NOP for the 1999 Supplemental Water Project Final EIR was published (April 1998).

Table 3.0-1 describes the key substantive changes in the environmental setting, if any, that occurred between 1998 and the present for each environmental resource analyzed in this EIR. The description of the environmental setting approximates as closely as reasonable the conditions that were present when the NOPs for both EIRs were published. In some cases, however, information is not available for these exact timeframes, so the best available data was used. The 2000 Census, for example, is the most accurate source of information regarding current population and housing in the Project areas, and 2000 data are the most current available for Important Farmland. In other cases, particularly when there was a notable change that occurred after the 2003 NOP was issued (e.g., the adoption of new air quality management plans affecting the WRMWSD and CLWA service area), this more current information was included.

1 **Table 3.0-1. Key Differences between the 1998 and Current Environmental Setting**

Resource	*SWP*	*WRMWSD*	*CLWA*
Aesthetic Resources	No substantial difference, although increased land development (urban and agricultural) has occurred both in the San Joaquin Valley and in the area west of Castaic Lake.	Generally the same, although a minor amount of development has occurred along Interstate 5.	Development has continued to change the aesthetic character of the Santa Clarita Valley from a more rural to more urban landscape.
Agricultural Resources	No difference.	Non-Irrigated Farmland decreased by approximately 59 percent; Urban and Built-up Land decreased by approximately 13 percent; both Prime Farmland and Other Land decreased by less than 1 percent. The acreage of other farmland categories increased: Farmland of Statewide Importance (+7 percent), Unique Farmland (+less than 1 percent), Irrigated Farmland (+7 percent), and Grazing Land (+13 percent).	1,731 acres were converted from agricultural use to urban use.
Air Quality	Same as described for WRMWSD and CLWA.	In 2001, the EPA reclassified the SJVAB O3 nonattainment designation from serious to severe. The total fugitive dust emissions within the SJVAB decreased substantially between 1995 and 2002, but the relative contributions of these sources to the total PM10 levels in the region did not change substantially. The 2003 PM10 Plan was adopted in 2003 and contains a Draft Concept Conservation Management Practice Program (CMP Program) for the San Joaquin Valley to regulate fugitive dust emissions from on-field activities.	The federal and state standards for CO within the SCAB were met as of the end of 2002, and the SCAQMD will request reclassification as attainment for CO in the next few years. The 2003 AQMP was adopted, which (1) updates the demonstration of attainment with the national standards for O3 and PM10; (2) replaces the 1997 attainment demonstration for the national CO standard and provides a basis for a future maintenance plan for this pollutant; and (3) updates the maintenance plan for the national NO2 standard that the SCAB has attained since 1992.

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Table 3.0-1. Key Differences between the 1998 and Current Environmental Setting (continued)

Resource	*SWP*	*WRMWSD*	*CLWA*
Biological Resources	No substantial difference.	The Buena Vista Lake shrew's federal status has increased from species of concern to federally endangered. HCP development has begun for ranch lands within the San Joaquin Valley.	Growth has resulted in the conversion of habitat to urban uses. The San Fernando Valley spineflower was added to the state endangered list in 2001, and the Arroyo toad status was increased from federally threatened to federally endangered. Los Angeles County is updating SEA designations.
Cultural Resources	No substantial difference.	No substantial difference.	No substantial difference.
Geology, Soils, and Minerals	No substantial difference.	No substantial difference.	No substantial difference.
Hazards and Hazardous Materials	No substantial difference.	No substantial difference.	Since 1998, continued growth and development in the area have increased the amount of hazardous materials/wastes that are produced and transported around the region.
Land Use and Planning	No substantial difference.	Slight decrease in the amount of farmed area in the district and slight increase in the amount of fallowed land. Overall, no substantial change in land uses.	Continued urban development in the service area has resulted in the conversion of rural and open spaces to urban areas.
Noise	No substantial difference.	No substantial difference.	Ambient noise levels likely have increased in some portions of the service area since development has increased between 1998 and the present.
Population and Housing	No substantial difference.	Minor population and housing increase (total increase of approximately 370 people from 1990 to 2000; 129 more housing units).	Population and housing increase (total increase of approximately 40,450 people in the City of Santa Clarita from 1990 to 2000; 12,313 more housing units).
Public Services	No substantial difference.	No substantial difference, although a minor population increase occurred, thus increasing the demand for services.	Demand likely increased since the population increased between 1998 and the present. In the Santa Clarita Valley, five elementary schools and two high schools have been built since 1998. In addition, the overall amount of library space per square foot increased approximately 20 percent.
Recreation	No substantial difference.	No substantial difference.	No substantial difference, although demand for recreational resources has increased since population has increased.

Table 3.0-1. Key Differences between the 1998 and Current Environmental Setting (continued)

Resource	*SWP*	*WRMWSD*	*CLWA*
Transportation and Traffic	No substantial difference.	No substantial difference; the minor population increase in a rural area would cause minor changes to transportation and traffic.	In general, traffic volumes increased between 1998 and the present since the population increased during this period.
Utilities and Service Systems	An approximate doubling of SWP water delivered to CLWA from 1998 to 2002 resulted in an approximate doubling of electricity use from 1998 to 2002.	No substantial difference, although a minor population increase occurred, thus increasing the demand for services.	Demand likely increased since the population increased between 1998 and the present. Chiquita Canyon Landfill expansion was approved (23.0 million ton expansion). In 1998, the facility had a remaining capacity of approximately 1 million tons. Plans are being developed to expand the Sunshine Landfill's capacity to 90 million tons. The Valencia Water Reclamation Plant is undergoing expansion and will increase from 12.6 mgd to 21.6 mgd in 2004.
Water Resources	Total Table A deliveries fluctuated, ranging from a low of 1,546,740 AF in 2001 to a high of 3,714,230 AF in 2003. SWP Table A Amounts were transferred among SWP Contractors, including MWD to Coachella Valley Water Authority – 35,000 AF; Belridge Water Storage District to Zone 7 – 2,219 AF; and Tulare Lake Basin Water Storage District to Zone 7 – 400 AF. The PCL litigation challenging the Monterey Amendment was settled and essentially leaves these amendments in place (see sections 1.2.2 and 1.4.2 for a more complete description).	Water supplies generally the same, although WRMWSD has increased participation in other, more cost effective, water management options. In 1998, such water management activities could have supplied WRMWSD with an additional 59,500 AFY, and 106,000 AFY in 2002. WRMWSD's contract with KCWA from SWP water was 197,088 AF in 2002. WRMWSD's contract with KCWA was 238,088 AF of "firm supply" in 1998.	Water supply sources generally the same, although CLWA's SWP Table A Amount was increased by 41,000 AF due to the Project. In 1998, CLWA's average year SWP supply was estimated to be 46,500 AF based on available DWR model analysis. CLWA's average year SWP supply now is estimated to be 68,300 AF based on new DWR model results and Project implementation. In 1998, the total water demand in 2010 was projected to be approximately 106,300 AF. Future demand now is expected to be approximately 82,400 AF in 2010 and 102,500 AF by 2020.

Table 3.0-1. Key Differences between the 1998 and Current Environmental Setting (continued)

Resource	*SWP*	*WRMWSD*	*CLWA*
Water Resources (continued)			Based on deliveries, municipal water demands in the CLWA service area were approximately 48,870 AF in 1998 and approximately 68,230 AF in 2002. In 2002, the LARWQCB developed a tentative resolution for the chloride TMDL and a nutrient TMDL is being developed for the Santa Clara River. Additional reaches of the Santa Clara River were listed as impaired for chloride, nutrient, and coliform. Perchlorate was discovered in one additional Alluvial groundwater well in the eastern part of the basin. The CA DHS lowered the Action Level for perchlorate in drinking water from 18 ppb to 4ppb. The EPA revised MCLs for total trihalomethanes and arsenic.

KEY METHODOLOGICAL APPROACHES

Project impacts to all resources are driven by the amount of water transferred from WRMWSD to the CLWA service area and the timing of this delivery. This section provides an overview of the methods used to model the SWP water supply that would be available under different hydrologic conditions, defines two alternative SWP water allocation scenarios used in the impact analysis, and describes how indirect population and housing impacts were defined. More detailed information regarding the hydrologic modeling and SWP water allocation scenarios is included in section 3.15, Water Resources, and Appendix D.

Hydrologic Modeling

The amount of SWP water available for delivery is evaluated using computer simulations that predict SWP operations under various hydrologic conditions, facility constraints, and configurations.

1998 Environmental Setting

For the 1998 environmental setting, the amount of SWP water supply that would have been available for use by CLWA given the 41,000 AF Transfer was assessed using results from DWR's planning model, DWRSIM, because this is the modeling tool that was available during 1998. The two model studies used in this analysis simulated SWP and CVP operations and were conducted by DWR in 1998 for the CALFED Bay-Delta Program EIS/EIR (CALFED 2000). The models show the capability of the SWP to meet the assumed SWP demand given a range of hydrologic conditions and given an assumed set of physical facilities and operating constraints.

The two DWRSIM studies both assume the use of SWP facilities and operating constraints that were present in 1998. One study uses 1998 estimates of existing Contractor demands and upstream land and water use, and the other uses 2020 projections for both Contractor demands and upstream land and water use.

Current Environmental Setting

Since 1998, the modeling tool DWR uses to simulate operations has evolved (first to CALSIM I, and more recently to CALSIM II). However, while the modeling tool itself has changed, the criteria used in the models to simulate SWP operations have not changed significantly. DWR has completed a recent assessment of SWP reliability in its SWP Delivery Reliability Report (2003b), based on CALSIM II, but the results of these new studies are comparable to the results of the older DWRSIM studies (see Appendix D for a comparison of these model study results). Results from the CALSIM II studies from DWR's SWP Delivery Reliability Report were used for determining estimates of SWP water supplies for the current environmental setting since this is the modeling tool that is currently in use. CALSIM II is based on estimated 2001 SWP demand, which is higher than the 1998 demand due to increased M&I Contractor demands.

Environmental Impact Analysis

The environmental impact analysis was conducted using DWRSIM because at the time the analysis was begun in early 2002, CALSIM I was undergoing revision and a decision was made to use the established DWRSIM model. Once CALSIM II was finalized, results from this model were compared with those of DWRSIM (refer to section 3.15 and Appendix D). The estimates of SWP supplies associated with the 41,000 AF of Table A Amount based on CALSIM II are somewhat lower than the amounts under the DWRSIM studies for the comparable allocation scenario, particularly under "existing" conditions. These differences were considered and found not to result in changes to the environmental impact determinations in this EIR. Direct impacts would remain less than significant regardless of the modeling tool used, and indirect impacts from growth-related development would remain significant. No new environmental impacts would occur.

SWP Water Supply Allocation Scenarios

This EIR considers the impacts of the Project both with and without the change in water allocation criteria implemented as part of the Monterey Amendment. Under the original SWP Water Supply Contract terms, before the Monterey Amendment was executed, Contractors could, with the consent of DWR, permanently transfer Table A Amount (then called "entitlement") to other Contractors. The Project therefore could be authorized under Article 41 of CLWA's original Water Supply Contract with DWR or under terms added to CLWA's contract as part of the Monterey Amendment (Article 53). Both contract terms allow for the transfer of Table A Amount between SWP Contractors. Under the Monterey Amendment, Agricultural Contractors committed, on a willing buyer-willing seller basis, to make available 130,000 AF of Table A Amount for permanent transfer to M&I Contractors. The transfer of Table A Amount that is the subject of this EIR was implemented under this permanent transfer provision of the Monterey Amendment, although the transfer could also be implemented under

Article 41 of CLWA's original Water Supply Contract. Additional detail regarding the Monterey Amendment scenarios is provided in section 3.15.

Population and Housing Impacts, Allocation of Project Water to Existing and Future Users

Population and housing would be affected only in the CLWA service area. Based on urban water consumption of approximately 61,000 AF in the service area in 2000 (SCVWP 2001) (the first year in which the 41,000 AF of Table A Amount became available for use by CLWA) and a service area population of approximately 190,000 persons (based on U.S. Census 2000 data), it was determined that 1 AF serves approximately 3.1 persons annually (190,000 persons/61,000 AF per year = 3.1 persons per AF per year). This planning factor represents the water needed for both residential and non-residential urban uses associated with this population.

As shown in Table 3.0-2, the Project would be able to serve a population of between 28,000 and 106,700 persons. The number would vary depending upon hydrologic conditions, and the assumptions used by local government decision-makers when approving new development projects. Assuming an average year supply, the Project could provide an additional 34,400 AF of SWP water to the CLWA service area. (This level of population demand could not be accommodated, however, without additional projects or programs to "firm up" the year to year reliability of the water supply, for example, groundwater banking programs). With a single dry year supply of approximately 9,200 AF, the Project could serve approximately 28,500 persons. Assuming a multiple dry year period water supply, the Project would provide approximately 18,100 AF and could serve approximately 56,200 persons. Using the assumptions outlined above, it is expected that the Project could serve between about 9,000 and 36,000 additional housing units (using the 3.1 persons per housing unit factor included in the Los Angeles County General Plan). (See section 3.15 for a discussion of the water supply analysis.)

Table 3.0-2. Population and Housing that Could Be Supported by the Project within the CLWA Service Area[1]

SWP Demand Conditions	*Water Supply (AF)*	*Persons[2]*	*Housing Units[3]*
Average Year	34,400	106,700	35,600
Single Dry Year	9,200	28,500	9,500
Multiple Dry Year	18,100	56,200	18,700

Note: Numbers rounded to nearest 100.
1. Based on DWRSIM results as identified in section 3.15. Assumes existing (1998) SWP demand conditions and that DWR continues to allocate available SWP supplies based on the With Monterey Amendment allocation methodology (refer to section 3.15).
2. Persons based on urban water consumption of approximately 61,000 AF in the CLWA service area in 2000 and a population of approximately 190,000 persons, whereby 1 AF serves approximately 3.1 persons annually.
3. Based on a 3.0 persons per housing unit factor.

The amount of existing versus new population that could be served by the transfer of the 41,000 AF of Table A Amount is dependent upon the availability of SWP water, which can vary from year to year. During 2000, the first year that Project water would have been available, water from the Project was not required to serve the demand because 90 percent of CLWA's 54,200 AF of SWP allocation was available. The SWP demand during that year was 32,579 AF (SCVWP

2003), which is well under the 48,780 AF that would have been available in that year had the transfer not occurred (i.e., 54,200 AF of Table A Amount x 90 percent allocation for that year). During 2002, however, Project water would have been required to meet the existing demand, which was 41,768 AF (SCVWP 2003). In that year, the SWP allocation was 70 percent; thus, only 37,940 AF of SWP would have been available to meet the demand, or 3,828 AF less than the supply that would have been available without the Project. If the SWP allocation had been lower in either of these years, more Project water would have been required to meet the existing demand.

For subsequent analyses in this EIR, an average year supply is assumed because it represents the most typical conditions and also is a worst-case scenario in terms of the indirect impacts resulting from population growth. Thus, for purposes of this analysis, it is assumed that the Project could serve 106,700 new persons and 35,600 new housing units.

SUMMARY OF OPERATIONAL AND PHYSICAL CHANGES RESULTING FROM THE PROJECT

The Project would use existing SWP facilities for transfer, storage, and delivery of the 41,000 AF Table A Amount to CLWA instead of WRMWSD. This change in point of delivery would allow water associated with the 41,000 AF Table A Amount to be transported further along the California Aqueduct than if the water were delivered to WRMWSD. Water would continue to be diverted for export in the facilities in the Delta under existing water quality and operational criteria. All or a portion of the water would be temporarily stored in San Luis Reservoir, consistent with DWR's current operation of the reservoir. Conveyance to CLWA would require pumping the water through the SWP's Teerink, Chrisman, Edmonston, and Oso pumping plants (transport to WRMWSD also requires pumping a portion of the water through the Teerink and Chrisman pumping plants). Delivered water associated with the transferred Table A Amount would flow through both Quail and Pyramid lakes (both lie along the California Aqueduct between the WRMWSD and CLWA turnouts). Consistent with current and historic operations, the delivered water would be diverted from Castaic Lake by CLWA during the same general timeframe as the water is delivered to the lake by DWR. The Project would comply with and not materially change the existing operating criteria[1] of the SWP and associated facilities.

The Project would not require the construction of any new facilities. WRMWSD would use its existing water distribution system to implement the Project and new construction or improvements to these facilities would not be needed. WRMWSD would implement the Project in accordance with its existing operational procedures. Based on capacity assumptions discussed in section 4.2.14 Utilities/Service Systems, CLWA has capacity in its local water facilities to transport and treat the water delivered as a result of the Project, in accordance with existing operational procedures and water quality requirements. This EIR addresses changes in local treatment and transport facilities that would result from the combined impacts of the

1 The operating criteria of the SWP are the rules and regulations under which DWR operates SWP facilities. Operating criteria include, although are not limited to, the SWP Water Supply Contracts, environmental regulations and operating criteria for diversions from the Delta, operations of Oroville and San Luis reservoirs, and criteria for terminal reservoirs such as Castaic Lake.

Project and other reasonably foreseeable projects in the Santa Clarita Valley in Chapter 6.0, Cumulative Impacts.

State Water Project and Associated Facilities

The Project's changes to the SWP and associated facilities would result from (1) the change in timing of the delivery of water associated with the 41,000 AF of Table A Amount, and (2) the change in the amount of water transported to the CLWA turnout. Under the Project, the 41,000 AF Table A Amount would be used for urban rather than agricultural purposes. While the same total amount of water associated with the 41,000 AF of Table A would be available to CLWA as would have been available to WRMWSD, the difference between agriculture and urban patterns of use during the year would result in a net reduction in water deliveries in May through September, and a net increase in deliveries during the remaining months of the year (October through April). In addition, since the CLWA turnout is located downstream of the WRMWSD turnouts, the Project would require the transport of water this additional distance through the California Aqueduct.

The Delta

Since the Project would be implemented in accordance with the existing operating criteria for the SWP, including the operating criteria that govern water withdrawals from the Delta (e.g., in 1998, Water Right Order 95-6 and currently, the State Water Resources Control Board [SWRCB] Water Right Decision 1641 [Decision 1641]), the total amount of SWP water that could be diverted from the Delta would not change as a result of the Project. Because the Project would not change the total amount of SWP supply available for delivery to Contractors, there would be no change in the total amount of water diverted from the Delta. A change in the timing of deliveries for urban rather than agricultural purposes would result in changes in storage at San Luis Reservoir. These storage changes at San Luis Reservoir could result in some years in a change in the timing of the filling of the reservoir, which in turn could result in minor changes in the timing of Delta diversions. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta. Because of the small magnitude of the change in the timing of deliveries, any change in timing of Delta diversions that did occur would be minor and likely not detectable.

California Aqueduct

Implementation of the Project and the delivery of water associated with the transfer could result in some years in minor changes in the timing of the diversion of water from the Delta. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta. If these minor timing changes in Delta diversions occurred, there would be corresponding minor changes in the timing of water transported within the Aqueduct from the Delta to San Luis Reservoir. The Project also would result in a minor change in the timing of water transported in the Aqueduct between San Luis Reservoir and the WRMWSD turnouts due to the change in use of the water (urban rather than agricultural use) and the associated shift in the timing of delivery. Within these reaches of the Aqueduct, a slight increase in the amount of water transported would occur from October to April, and a slight decrease in the amount of water transported would occur during the remainder of the year.

CLWA has entered an agreement with The Metropolitan Water District of Southern California (MWD) to accommodate the use of capacity in the California Aqueduct by CLWA when the capacity of MWD is not needed for its purposes.

The Project would increase CLWA's Table A Amount and would increase the amount of water transported in the Aqueduct from the WRMWSD turnouts to the CLWA turnout. This increase in the amount of water transported within these reaches of the Aqueduct would be relatively minor, but would slightly increase the flow (velocity) in the California Aqueduct and may result in a minor change in the water level within the non-pipeline portions of the Aqueduct. The Project would require additional electricity to pump the water through SWP facilities, the cost of which would be paid by CLWA per the terms of CLWA's Water Supply Contract.

San Luis Reservoir

Water diverted from the Delta that is not immediately delivered to Contractors is stored in San Luis Reservoir. San Luis Reservoir is generally filled during the high runoff months of the winter and early spring, and the stored water is then used to meet Contractor demands during the higher demand months in the summer and fall to supplement the more limited diversions from the Delta during that period. The Project would result in a slight increase in the amount of water stored at San Luis Reservoir from July through November, and a slight decrease in the amount of water stored during the remainder of the year (December through June) due to the net change in the timing of deliveries during the year resulting from the 41,000 AF transfer. These changes would be minor and would remain well within the historic range of reservoir operations.

Castaic Lake and Other SWP Reservoirs

The Project would result in additional water being transported through the West Branch through Quail Lake and Pyramid Lake to CLWA's turnout at Castaic Lake, but would not result in a material change in the overall volume of water stored in these three lakes. In general, DWR operates these reservoirs to regulate water deliveries, to help meet summer peak deliveries, and to provide an emergency water supply in case of a major supply system outage. From 1990 to 2000, SWP deliveries to CLWA from Castaic Lake have averaged approximately 6 percent of the total SWP water delivered from the lake. DWR's operation of these lakes (Quail, Pyramid, and Castaic) generally would not change with the Project, although the Project would result in additional water transported through these lakes in about the same months the water is delivered to CLWA.

Wheeler Ridge-Maricopa Water Storage District

The Project would reduce WRMWSD's total Table A Amount by 41,000 AF, reducing the total amount of SWP water that WRMWSD could obtain in any one year. In addition, since Article 21[2] water is allocated based in part on a Contractor's Table A Amount, the Project could reduce the amount of Article 21 water WRMWSD could obtain when Contractors' requests for Article

2 Water that DWR makes available when water and capacity are available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors' demands are low, and only under specific conditions that do not occur on an annual basis.

21 water are greater than the amount available. The 41,000 AF, a portion of WRMWSD's original Table A Amount, became unnecessary to WRMWSD as a result of other more economical water supplies becoming available to WRMWSD (e.g., diversification of water sources; see section 3.2 and Appendix C).

Water users within the WRMWSD have substantial flexibility in managing agricultural land uses, and therefore, water demand, from year to year. A variety of factors, including the cost and availability of different water sources, anticipated crop market value, anticipated or existing crop subsidies, and other factors (such as labor cost, regulation of the use of certain chemicals, etc.) are considered in the decision whether and when to plant certain crops. WRMWSD participates in water management actions, including direct and in-lieu groundwater recharge within the district (e.g., district owned and operated wells and the delivery of surface water to non-contract lands) and groundwater banking outside of the district (e.g., Kern Water Bank and the Pioneer and Berrenda Mesa projects). These water management activities are intended to supply WRMWSD (or for in-lieu groundwater recharge, landowners within the district) with additional water when SWP supplies are insufficient to meet demands, such as during dry periods.

Castaic Lake Water Agency

The Project would increase CLWA's Table A Amount by 41,000 AF. This would allow CLWA to order and receive delivery of up to an additional 41,000 AF of Table A water. This additional Table A Amount would meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. In addition, since Article 21[2] water is allocated based, in part, on a Contractor's Table A Amount, the Project could increase the amount of Article 21 water CLWA could obtain when Contractors' requests for Article 21 water are greater than the amount available. Estimated population and housing units that could be served by the Project are described above.

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3.1 AESTHETIC/VISUAL RESOURCES

Visual resources consist of the natural and manmade features that give a particular environment its aesthetic qualities. These features may be natural appearing or modified by human activities. Visual resources also have a social setting, which includes public values, goals, awareness, and concern regarding visual quality. The areas considered to have the greatest visual sensitivity are typically along scenic highways and wilderness or other natural areas. The primary areas of concern generally are associated with changes to prominent topographic features, changes in the character of an area with high visual sensitivity, removal of vegetation, or blockage of public views of a visually sensitive landscape.

3.1.1 Environmental Setting

3.1.1.1 *State Water Project and Associated Facilities*

California Aqueduct

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. In some areas, the 444-mile California Aqueduct is an open, concrete-lined canal that is flush with the ground surface. In others, particularly where it crosses mountains, water is transported in enclosed pipes. Water conveyed in the California Aqueduct passes through a series of pumping plants and storage reservoirs, as shown on Figure 1.3-1.

From the southern Delta facilities to the Tehachapi Mountain Range, the California Aqueduct passes through undeveloped lands and agricultural operations that contribute to the rural character of the San Joaquin Valley. The foothill areas and associated Coast Mountain Range to the west and Sierra Nevada Mountain Range to the east provide a dramatic backdrop for the valley. These foothill and mountain ranges areas can be viewed throughout the valley due to the relatively flat plains and vast open space. Between the Tehachapi Mountain Range and the SWP terminal reservoir at Castaic Lake, the area is characterized by varied topography and numerous canyons and waterways.

San Luis Reservoir

San Luis Reservoir is located within the foothills of the Coast Mountain Range, near Los Banos. Lands surrounding the reservoir complex are generally undeveloped, and the overall character of the area is rural. The primary development in the area is associated with the San Luis Reservoir State Recreation Area, which surrounds the reservoir, and contains two developed and two primitive campgrounds, five boat ramps, and an extensive day-use area at the O'Neill Forebay. The reservoir and surrounding recreation area are visually sensitive.

Castaic Lake

Castaic Lake is located in the northern portion of the Santa Clarita valley at the confluence of Elizabeth and Castaic canyons. Urban development has primarily taken place south and east of the lake but has also occurred west of the lake during the last 10 years. The remainder of the surrounding area is generally undeveloped. The backdrop of prominent hills in the western portion of the lake contributes to the scenic qualities of the area. The 8,000-acre Castaic Lake

Recreation State Area is developed with two boat launch ramps, picnic facilities, 60 developed campsites, and a day-use area. The lake and surrounding recreation area are visually sensitive.

3.1.1.2 *Wheeler Ridge-Maricopa Water Storage District*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. Kern County designates most of the county as having a visual rating of Class II, meaning that the area is "excellent visual space" (Kern County 1994). The foothills provide a dramatic backdrop for the area and can be clearly viewed throughout the county due to the flat plains and vast open space. The undeveloped lands and agricultural operations contribute to the rural character typical of the San Joaquin Valley. Although the net farmed area slowly declined from 1998 to 2001, there have been no significant changes in agricultural land use from 1998 to 2003 (personal communication, B. Taube 2003).

3.1.1.3 *Castaic Lake Water Agency*

The mountainous ridgelines of the Angeles National Forest and the Los Padres National Forest provide a visual backdrop for much of Santa Clarita Valley. Much of the area has been developed, primarily with residential and commercial uses. Open spaces still exist, particularly in the mountains. The Santa Clara River traverses the valley and is another important visual element, although it is an ephemeral stream in the CLWA service area. Other areas providing local visual identity include Bouquet Canyon, Castaic Creek, San Francisquito Canyon, Newhall Creek, Placerita Canyon, Sand Canyon, and the South Fork of the Santa Clara River. Freeways and roadways such as Interstate 5, State Route 14, and State Route 126 provide view corridors through the Santa Clarita Valley and into western Ventura County. Considerable development has occurred in the Santa Clarita Valley since 1998, which has affected the aesthetic character of the CLWA service area by furthering the transition from a more rural to an urban landscape.

3.1.2 Potential Impacts of the Project

3.1.2.1 *Significance Criteria*

The criteria used to determine the significance of impacts to visual resources are based on Appendix G of the State CEQA Guidelines. The Project would have a significant environmental impact if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.1.2.2 *Environmental Impacts*

3.1.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities, nor would it change the operating criteria of these facilities. The proposed transfer would result in a slight increase in the amount of water transported in the California Aqueduct to Castaic Lake, but this would not affect aesthetic resources. As described in section 3.0, minor seasonal changes in the volume of water stored in San Luis Reservoir would result from Project implementation. The average volume of water stored would decrease slightly from December through June, but the change would be minor and the resulting elevations would fall within the range of fluctuations present under both current and historic operations. This impact would be less than significant because it would not adversely affect scenic vistas, damage scenic resources, or substantially degrade the existing visual character or quality of the Project area. The amount of water stored in Castaic Lake would not change as a result of the Project; thus, no impacts would occur. No new sources of light or glare would be developed under the Project.

INDIRECT IMPACTS

No indirect impacts would occur.

3.1.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

Transferring 41,000 AF of Table A Amount to CLWA would not require new construction or the modification of existing WRMWSD water distribution facilities, nor would it change the current operation of these facilities. Since no construction or operational changes would occur, implementation of the Project would not adversely affect scenic vistas, damage scenic resources, substantially degrade the existing visual character or quality of the project area, or create a new source of substantial light or glare.

INDIRECT IMPACTS

No indirect impacts would occur.

3.1.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

Implementation of the Project would not require the construction of new CLWA facilities or modification of existing CLWA facilities. Transferring an additional 41,000 AF of Table A Amount through existing facilities for use within the service area would not affect aesthetic resources. Thus, implementation of the Project would not impact scenic vistas, damage scenic resources, substantially degrade the existing visual character or quality of the Project area, or create a new source of substantial light or glare.

INDIRECT IMPACTS

Potential aesthetic impacts from growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.1.3 Mitigation Measures

3.1.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to aesthetic resources were identified; therefore, no mitigation measures are required.

3.1.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to aesthetic resources were identified; therefore, no mitigation measures are required.

3.1.3.3 Castaic Lake Water Agency

No direct significant impacts to aesthetic resources were identified; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.1.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts would occur in relationship to the SWP and associated facilities or within the WRMWSD, nor would any such direct impacts occur within the CLWA service area. Indirect impacts in this service area, including significant unavoidable adverse impacts, are addressed in Chapter 4, Growth Inducement and Growth-Related Impacts.

3.2 AGRICULTURAL RESOURCES

The State of California has the largest food and agriculture economy in the nation, and agricultural lands in the state are among the most productive (California Agricultural Statistics Service 2003). The state has led the nation in agricultural production for more than 50 years (California Agricultural Statistics Service 2003). Because of increasing land values and the state's expanding population, the State of California has initiated a variety of programs, such as the Farmland Mapping and Monitoring Program (FMMP) and the California Land Conservation Act of 1965, to preserve agricultural lands and prevent or reduce conversion of these lands to non-agricultural uses.

The State of California Department of Conservation (Department of Conservation) FMMP categorizes and maps Important Farmlands, including those defined as Prime, Unique, and Statewide Importance. Counties may, at their discretion, establish criteria for the designation of Farmland of Local Importance. These terms are defined in Table 3.2-1. Farmland Mapping and Monitoring data are available biennially; the most recent data available are from calendar year 2000.

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, established the state's primary program for the retention of private land in agriculture and open space use. The Williamson Act is a voluntary, locally administered program that offers reduced property taxes on lands that have enforceable restrictions on their use via contracts between individual land owners and local governments.

Cities and counties in California are responsible for regulating land uses in their jurisdictions in part through establishing zoning districts that specify allowable uses. For purposes of this analysis, it is assumed that land in agricultural use is zoned for this purpose.

3.2.1 Environmental Setting

3.2.1.1 State Water Project and Associated Facilities

SWP facilities are not located on land used for agricultural purposes, although they are generally located in areas containing or adjacent to large amounts of agricultural lands.

3.2.1.2 Wheeler Ridge-Maricopa Water Storage District

NEA conducted a study to determine the potential effects of the Project on agricultural operations in the WRMWSD (NEA 2003). This section and section 3.2.2.2.2 are based, in part, on the NEA study, with additional references noted. The NEA study is provided as Appendix C.

Cropping Patterns and Agricultural Operations

This section provides a general description of the cropping patterns and agricultural operations in the WRMWSD. Although this information is not directly related to the CEQA significance criteria, the overall understanding of agricultural operations and cropping patterns provides a basis for understanding agricultural land use trends within the district.

1 Table 3.2-1. Definitions for Important Farmland Categories

Farmland Category	*Definition*
Prime Farmland	Land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
Farmland of Statewide Importance	This land is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture. Farmland of Statewide Importance must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
Unique Farmland	This is land of lesser quality soils used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Unique farmland is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Examples of crops on Unique Farmland include oranges, olives, avocados, rice, grapes, and cut flowers. This category does not include publicly owned lands for which there is an adopted policy preventing agricultural use.
Farmland of Local Importance	This is land of importance to the local agricultural economy and is determined by each county's Board of Supervisors and local advisory committees. Examples of this type of land could include dairies, dryland farming, aquaculture, and uncultivated areas with soils qualifying for Prime Farmland and Farmland of Statewide Importance.
Interim Farmland (Irrigated and Non-Irrigated Farmland)	Interim Farmland is a designation used for farmed areas lacking modern soil survey information and for which there is expressed local concern on the status of farmland. Interim Farmland is designated as either Irrigated or Non-Irrigated Farmland. Irrigated Farmlands are lands with a developed irrigation water supply that is dependable and of adequate quality and that have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Non-Irrigated Farmlands are lands on which agricultural commodities are produced on a continuing or cyclical basis utilizing stored soil moisture.
Grazing Land	Grazing land is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.
Urban and Built-up Land	This is used for residential, industrial, commercial, construction, institutional, and public administrative purposes; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures; and other development purposes.
Other Land	Other land is that which is not included in any of the other mapping categories. The following types of land are generally included: low-density rural development; brush, timber, and other lands not suitable for livestock grazing; government lands not available for agricultural use; roads systems for freeway interchanges; vacant and nonagricultural land larger than 40 acres in size and surrounded on all sides by urban development; confined livestock facilities of 10 or more acres; strip mines and borrow and gravel pits; a variety of other rural land uses.
Water	Water areas with an extent of at least 40 acres.

Note: None of these categories includes publicly owned lands for which there is an adopted policy preventing agricultural use.
Source: Department of Conservation, no date.

Most of the lands in the district are cultivated agricultural areas. The cropping patterns, net amount of farmed lands, fallowed lands, and total cultivated lands within the district from 1990 to 2001 are provided in Table 3.2-2. The net acres cultivated with certain crops, such as deciduous fruits and pomegranates remained relatively constant during this period, while the net acres cultivated with other crops, such as vineyards, deciduous nuts, and citrus have increased gradually. The number of acres cultivated with annual crops, such as cotton, sugar beets, grains, green feeds, and mixed produce varied considerably over the time period. Overall, within the district there has been an increase in the cultivated acres of permanent crops (such as tree crops, vineyards, etc.) and a general decrease in annual crops (such as cotton, grains, green feeds, etc.).

The amount of fallowed land in the district peaked in 1991 during drought conditions, with over 51,500 acres fallowed. Due to the severe drought throughout the State and the then-existing SWP contract provisions (Without Monterey Amendment), WRMWSD did not receive SWP water in 1991. At that time, the district was not participating in other water management actions, but was able to deliver over 55,000 AF of surface water from purchases and exchanges. The WRMWSD (like all contractors) was not relieved from paying the fixed costs on its SWP Table A Amount in 1991, even though WRMWSD and other agricultural contractors received no water. This proved to be a substantial financial hardship for the district and those who farmed the contract lands. In 1991 and subsequent years, some farmers within the contract lands were not able to recover financially from the 1991 drought and sold their lands, were foreclosed on, or cancelled part or all of their surface water contract with WRMWSD.

Due in part to the 1991 drought, WRMWSD began to participate in other more economical water management actions that could supply the district with water in addition to SWP supplies. By 2001, these consisted of groundwater wells developed by WRMWSD in 1992 and additional wells acquired by WRMWSD after this time; participation in the Kern Water Bank beginning in 1995; the Pioneer Project initiated in 1997; and the Berrenda Mesa Project initiated in 1999. In 2001, these other water management actions could supply WRMWSD with over 88,000 AF, not including additional water that may be available from exchanges and purchases similar to those that occurred in 1991.

From 1991 to 1998, the amount of fallowed land in the district decreased by over 34,000 acres, and from 1998 to 2001, the amount of fallowed land increased by over 11,000 acres (an overall net change of approximately 22,000 acres). This increase in fallowing since 1998 appears to be related to crop markets and prices (NEA 2003). Fallowing is a regular part of the cropping patterns in WRMWSD, with an average of about 27,830 acres fallowed annually from 1990 to 2001. Farmers fallow land for both agronomic reasons (e.g., fallowing as part of crop rotations and for pest and disease control) and for economic reasons (e.g., market conditions, or prices for the crops typically grown on the land to be fallowed, and the cost and availability of various production inputs, including water). Agricultural water users have substantial flexibility in managing their lands, and therefore water use, from year to year. A variety of factors, including the cost and availability of different water sources, the anticipated crop market value, anticipated or existing crop subsidies, and other factors (such as labor cost, regulation of the use of certain chemicals, etc.) are considered in the determination to plant certain crops by farmers.

Table 3.2-2. Cropping Patterns within the WRMWSD Service Area from 1990 to 2001

(all values in net acres)

Crop Group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Average	Max	Min
Cotton	38,071	16,192	24,621	31,063	33,369	36,795	34,702	32,369	24,953	20,781	22,109	16,204	27,602	38,071	16,192
Sugar Beets	723	746	825	689	370	409	151	0	181	0	0	0	341	825	0
Grains[1]	2,692	3,450	9,859	8,162	3,739	9,530	11,804	8,203	15,586	12,260	9,496	9,308	8,674	15,586	2,692
Green Feeds	1,836	1,146	1,206	1,442	1,514	2,002	1,737	2,923	2,938	3,340	2,933	2,924	2,162	3,340	1,146
Mixed Produce[2]	19,504	17,471	17,035	15,775	17,450	17,406	18,735	20,332	18,398	21,737	19,239	15,487	18,214	21,737	15,487
Vineyard	10,719	9,883	9,633	9,708	9,778	10,774	12,547	14,222	15,315	15,745	17,387	17,701	12,784	17,701	9,633
Deciduous Nuts	6,865	6,900	6,900	7,022	7,399	7,255	7,640	7,624	8,198	8,381	8,509	8,369	7,589	8,509	6,865
Deciduous Fruits	2,074	2,102	2,013	2,008	2,060	2,066	2,154	2,205	2,104	1,989	2,058	1,928	2,063	2,205	1,928
Citrus	6,212	6,231	6,675	6,932	7,241	7,471	7,870	8,482	9,011	9,737	11,123	12,030	8,251	12,030	6,212
Jojoba	646	82	199	0	0	0	0	0	0	0	0	0	77	646	0
Pomegranates	243	243	351	351	351	351	351	351	338	377	377	377	338	377	243
Eucalyptus	10	10	14	14	6	6	19	19	19	19	19	19	15	19	6
Total Cropped	**89,595**	**64,456**	**79,331**	**83,166**	**83,277**	**94,065**	**97,710**	**96,730**	**97,041**	**94,366**	**93,249**	**84,348**	**88,111**	**97,710**	**64,456**
- Double Cropped	5,314	4,085	3,525	4,510	4,233	4,663	5,092	5,441	2,542	3,155	2,622	1,541	3,894	5,441	1,541
= Net Farmed	**84,281**	**60,371**	**75,806**	**78,656**	**79,044**	**89,402**	**92,618**	**91,289**	**94,499**	**91,211**	**90,628**	**82,807**	**84,218**	**94,499**	**60,371**
+ Fallow Lands	27,588	51,620	36,031	33,189	32,980	22,523	19,584	20,949	17,649	20,855	21,660	29,291	27,827	51,620	17,649
= Total Cultivated Acres	**111,869**	**111,991**	**111,837**	**111,845**	**112,024**	**111,925**	**112,202**	**112,238**	**112,148**	**112,066**	**112,288**	**112,098**	**112,044**	**112,288**	**111,837**
+ Miscellaneous Lands[3]	6,840	6,847	6,839	6,843	6,849	6,841	6,859	6,860	6,856	6,850	6,864	6,853	6,850	6,864	6,839
+ Deferred Lands	1,659	1,659	1,659	1,659	1,659	1,659	1,659	0	0	0	0	0	968	1,659	0
+ Other Lands[4]	668	738	880	968	919	1,073	1,098	1,129	1,183	1,270	1,361	1,257	1,045	1,361	668
+ Native Vegetation	25,626	25,428	25,405	25,305	25,169	25,122	24,802	26,393	26,434	26,434	26,434	26,739	25,774	26,739	24,802
Total District	**146,662**	**146,662**	**146,620**	**146,620**	**146,620**	**146,620**	**146,620**	**146,620**	**146,621**	**146,620**	**146,947**	**146,947**	**146,682**	**146,947**	**146,620**

Source: Wheeler Ridge-Maricopa Water Storage District

1. Includes irrigated and dry farmed.
2. Includes melons.
3. Consist of developed by non-farmed areas within cultivated lands such as farm roads, farmsteads, and reservoirs.
4. Other lands consists of airstrips, cotton gins, tank farms, utility years, etc.

The net farmed area within the district declined sharply in 1991, although it recovered to the 1990 level by 1995. During the period between 1990 and 2001, the net farmed area peaked in 1998, and slowly declined from 1998 to 2001. Overall, the total cultivated acres, miscellaneous lands (non-farmed areas within cultivated lands such as farm roads, farmsteads, and reservoirs), other lands (non-cultivated lands), and native vegetation areas within the district have remained relatively constant throughout this time period, indicating that substantial land use changes have not occurred within the district.

Important Farmland Trends

The amount of Important Farmland and other lands in WRMWSD in 1998 and 2000 is shown in Table 3.2-3 (more recent data is not available). From 1998 to 2000, the amount of Non-Irrigated Farmland, Urban and Built-up Land, Prime Farmland, and Other Land decreased by approximately 59 percent and 13 percent, respectively for Non-Irrigated Farmland and Urban and Built-Up Land, and less than 1 percent for both Prime Farmland and Other Land. Over the same time period, the amount of Farmland of Statewide Importance, Unique Farmland, Irrigated Farmland, and Grazing Land increased, approximately 7 percent, less than 1 percent, 7 percent, and 13 percent, respectively. These changes in mapping categories from 1998 to 2000 (both increases and decreases) represent 1 percent or less of the total district lands.

Table 3.2-3. Important Farmland and Other Lands in WRMWSD, 1998 and 2000
(negative numbers in parenthesis)

Category	*1998 (acres)*	*2000 (acres)*	*Difference 1998 to 2000 (acres)*
Prime Farmland	6,992	6,978	(14)
Farmland of Statewide Importance	510	552	42
Unique Farmland	1,867	1,883	16
Irrigated Farmland	99,957	100,048	91
Non-Irrigated Farmland	1,854	244	(1,610)
Grazing Land	26,562	28,162	1,600
Urban and Built-up Land	527	484	(43)
Other Land	11,683	11,601	(82)
Total*	**149,952**	**149,952**	--

Source: California Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2002.
* The total is slightly greater than the current area of the WRMWSD due to mapping accuracies.

In 2000, Prime, Unique, and Farmland of Statewide Importance represented approximately 6.3 percent of the total district area, and Irrigated Farmlands represented approximately 66.7 percent of the total district area.

Williamson Act Trends

The amount of land enrolled in Williamson Act contracts in Kern County in 1998 and 2001 is provided in Table 3.2-4, the most recent data available. The State of California has electronic geo-referenced data for lands enrolled in Williamson Act contracts for some counties, although not Kern County (personal communication, J. Nordstrom 2003). Because data are not readily available for use in determining the amount of land within WRMWSD enrolled in Williamson Act contracts, data for Kern County are used. Although precise sub-county trends cannot be extrapolated from county-wide data, the available data on changes in the amount of Important Farmland suggests that changes are from one type of agriculture to another (farming to grazing) as opposed to changes from agriculture to non-agriculture use. This supports the likelihood of similar trends in Williamson Act enrollments in WRMWSD as occurred in Kern County. From 1998 to 2001, the amount of land enrolled in Williamson Act contracts in Kern County increased by about 36,119 acres, or by approximately 2.1 percent.

Table 3.2-4. Lands Under Williamson Act Contracts in Kern County, 1998 and 2001

Year	*Land Enrolled (acres)*
1998	1,683,744
2001	1,719,863

Source: California Department of Conservation, 2003.

Agricultural Zoning Trends

A review of zoning designations for the parcels that were the source of water for the transfer of the 41,000 AF of Table A Amount to CLWA showed that all were zoned for agricultural use and that no zoning changes occurred between 1998 and the present.

3.2.1.3 Castaic Lake Water Agency

Agricultural and grazing areas within the CLWA service area are located primarily in the western portion of the service area along the State Route 126 corridor and adjacent hills in both Los Angeles and Ventura counties. Over 90 percent of the CLWA service area has been inventoried and mapped by the State's FMMP. The amount of Important Farmland and other lands in the CLWA service area in both 1998 and 2000 is shown in Table 3.2-5. As noted, the amount of Urban and Built-up land increased by 1,731 acres during this period, while the amount of agricultural land decreased (a decrease of 1,034 acres of Important Farmland and Grazing Land combined).

Most of the CLWA service area is located in Los Angeles County, which does not participate in the Williamson Act program. Ventura County does participate in this program and had approximately 122,875 acres of Williamson Act contracts lands in 1998 and 123,781 in 2001 (California Department of Conservation 2002 and 2003).

Table 3.2-5. Important Farmland and Other Lands in the CLWA Service Area, 1998 and 2000
(negative numbers in parenthesis)

Category	*1998 (acres)*	*2000 (acres)*	*Difference (acres)*
Prime Farmland	2,765	2,444	(321)
Farmland of Statewide Importance	825	767	(58)
Unique Farmland	410	404	(6)
Farmland of Local Importance	645	619	(26)
Grazing Land	50,836	50,213	(623)
Urban and Built-up Land	22,569	24,300	1,731
Other Land	34,444	33,747	(697)
Water Area	2,175	2,175	0
Total	**114,669**	**114,669**	--

Source: California Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2002.

In 1998, Ventura County passed the Save Open-Space and Agricultural Resources (SOAR) Initiative in order to "ensure that Agricultural, Open Space and Rural lands are not prematurely or unnecessarily converted to other more intensive development uses." The initiative requires a popular vote for changes to the County's General Plan policies and land use designations regarding open space, agricultural, and rural lands in unincorporated areas, with certain exceptions. Lands within the Piru community, for instance, may be re-designated by the Board of Supervisors without a public vote, due to its urban nature.

3.2.2 Potential Impacts of the Project

3.2.2.1 *Significance Criteria*

The criteria listed below are based on Appendix G of the State CEQA Guidelines. The Project would have a significant impact on agriculture if it would:

- convert a substantial portion of the available Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use;
- conflict with existing zoning for agricultural use or a Williamson Act contract; or
- involve other changes in the existing environment, which, due to their location or nature, could individually or cumulatively result in substantial loss of Important Farmland to nonagricultural use or a loss of agricultural productivity.

3.2.2.2 *Environmental Impacts*

3.2.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

The Project would use existing SWP facilities, which are not located on agricultural lands. Since these facilities would be operated in accordance with existing operating criteria, using existing facilities to transfer water associated with the Project would not affect adjacent agricultural resources. Use of the SWP facilities would not convert Important Farmland to non-agricultural use, conflict with existing zoning for agricultural use or a Williamson Act contract, or involve other changes that could result in the conversion of Farmland to non-agricultural use.

INDIRECT IMPACTS

No indirect impacts to agricultural resources would occur.

3.2.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

Under the Project, up to 41,000 AF of SWP Table A Amount that could have been delivered to WRMWSD on an annual basis could be delivered to CLWA instead. This action would not require the construction of new water distribution facilities or modification of existing facilities. The 41,000 AF Transfer Project is excess to the WRMWSD needs and does not involve water that would have otherwise been used by WRMWSD. Thus, no direct losses of Important Farmland or conflicts with existing zoning or Williamson Act contracts from construction would occur.

INDIRECT IMPACTS

No indirect impacts to agricultural resources in WRMWSD would occur. As described in section 3.15, if the Project were implemented, in years of average or greater than average SWP deliveries, water associated with the 41,000 AF Table A Amount would be in excess of WRMWSD's demands. In these years, the Project would not result in changes to agricultural practices (e.g., cropping patterns or land fallowing) within the district since sufficient surface water would be available to meet demands without the use of the 41,000 AF Table A Amount.

As described above, WRMWSD has implemented other water management actions, including a variety of groundwater banking projects (e.g., participation in the Pioneer and Berrenda Mesa projects, participation in the Kern Water Bank, and other groundwater banking projects), which have diversified its water sources and resulted in lower water costs (when total costs are considered). Overall, this diversification of water sources has allowed and will continue to allow WRMWSD to provide surface water within the district when SWP deliveries alone are not sufficient to meet demands. This diversification also has resulted in lower overall water costs (when total costs are considered), in years when SWP deliveries are lower than average (refer to section 3.15). In years of less than average SWP deliveries, therefore, the Project would not result in changes to agricultural practices (e.g., cropping patterns or additional land fallowing)

within the district since sufficient, low-cost water would be available to meet demands without the use of the 41,000 AF Table A Amount.

Since no changes to agricultural practices would result from Project implementation, it would not result in the conversion of Important Farmland to non-agricultural use, conflict with existing zoning for agricultural use or a Williamson Act contract, or involve other changes that could result in the conversion of Farmland to non-agricultural use.

3.2.2.2.3 Castaic Lake Water Agency

DIRECT IMPACTS

Implementation of the Project would not require the construction of new CLWA facilities or modification of existing CLWA facilities. Conveying additional water through existing facilities for use within the service area would not directly affect agricultural resources and therefore would not result in the conversion of Important Farmland to non-agricultural use, conflict with existing zoning for agricultural use or a Williamson Act contract, or involve other changes that could result in conversion of Farmland, to non-agricultural use.

INDIRECT IMPACTS

Potential impacts to Important Farmlands in the CLWA service area from new development that would occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.2.3 Mitigation Measures

3.2.3.1 State Water Project and Associated Facilities

No significant direct or indirect impacts to agricultural resources would occur; therefore, no mitigation measures are required.

3.2.3.2 Wheeler Ridge-Maricopa Water Storage District

No significant direct or indirect impacts to agricultural resources would occur; therefore, no mitigation measures are required.

3.2.3.3 Castaic Lake Water Agency

No significant direct impacts to agricultural resources would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.2.4 Significant Unavoidable Impacts

No significant direct or indirect unavoidable impacts on agricultural resources would result from the Project.

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3.3 AIR QUALITY

Air quality at a given location can be described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). The significance of a pollutant concentration is determined by comparing the concentration to an appropriate federal and/or state ambient air quality standard. The standards represent the allowable atmospheric concentrations at which the public health and welfare are protected and include a reasonable margin of safety to protect the more sensitive individuals in the population. National standards, established by the EPA, are termed the National Ambient Air Quality Standards (NAAQS). The NAAQS represent maximum acceptable concentrations that may not be exceeded more than once per year, except the annual standards, which may never be exceeded. The state standards, established by the California Air Resources Board (ARB), are termed the California Ambient Air Quality Standards (CAAQS). The CAAQS represent maximum acceptable pollutant concentrations that are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 3.3-1.

Air quality regulations were first promulgated with the federal Clean Air Act of 1969 (CAA). This act established the NAAQS and delegated the enforcement of air pollution control regulations to the states. In California, the ARB is responsible for enforcing air pollution regulations. The ARB has in turn delegated the responsibility of regulating stationary emission sources to local air agencies. In areas that exceed the NAAQS, the CAA requires preparation of a State Implementation Plan (SIP), detailing how the state will attain the standards within mandated time frames. The CAA identifies emission reduction goals and compliance dates based upon the severity of the ambient air quality standard violation within a region.

The California Clean Air Act of 1988, as amended in 1992 (CCAA), outlines a program to attain the CAAQS for ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and carbon monoxide (CO) by the earliest practical date. Since the CAAQS are more stringent than the NAAQS, emissions reductions beyond what would be required to show attainment of the NAAQS are required.

Identifying the Region of Influence (ROI) for air quality requires knowledge of the types of pollutants being emitted, emission rates of pollutant sources, the source proximity to other pollutant sources, and meteorological conditions. The ROI for inert pollutants (pollutants other than O_3 and its precursors) is generally limited to a few miles downwind from a source. Thus, the ROI for emissions of inert pollutants from Project construction sources, for example, would occur in proximity to construction sites and along road systems used by on-road construction traffic. The ROI for O_3 can extend much farther downwind than for inert pollutants. Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. Ozone precursors are mainly the reactive organic gases portion of volatile organic compounds and nitrogen oxides. In the presence of solar radiation, the maximum effect of reactive organic gases and nitrogen oxide emissions on O_3 levels usually occurs several hours after they are emitted and many miles from the source. Therefore, the ROI for O_3 generally extends much farther downwind than for inert pollutants.

Table 3.3-1. California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a,c]	----National Standards [b]----	
			Primary [c,d]	Secondary [c,e]
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m³)	0.12 ppm (235 µg/m³)	Same as primary
	8-hour	—	0.08 ppm (157 µg/m³)	Same as primary
Carbon monoxide (CO)	8-hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	—
	1-hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
Nitrogen dioxide (NO_2)	Annual	—	0.053 ppm (100 µg/m³)	Same as primary
	1-hour	0.25 ppm (470 µg/m³)	—	—
Sulfur dioxide (SO_2)	Annual	—	0.03 ppm (80 µg/m³)	—
	24-hour	0.04 ppm (105 µg/m³)	0.14 ppm (365 µg/m³)	—
	3-hour	—	—	0.5 ppm (1,300 µg/m³)
	1-hour	0.25 ppm (655 µg/m³)	—	—
Respirable Particulate Matter (PM_{10})	Annual	20 µg/m³ [f]	50 µg/m³ [g]	Same as primary
	24-hour	50 µg/m³	150 µg/m³	Same as primary
Fine Particulate Matter ($PM_{2.5}$)	Annual	12 µg/m³ [h]	15 µg/m³ [i]	Same as primary
	24-hour	—	65 µg/m³ [j]	Same as primary
Lead	30-day	1.5 µg/m³	—	—
	Quarterly	—	1.5 µg/m³	Same as primary
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m³)	—	—
Sulfates	24-hour	25 µg/m³	—	—
Visibility reducing particles [k]	8-hour (10 AM to 6 PM PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.	—	—

Source: (APCD 2002; ARB 2002)

Notes:

a. California standards for O_3, CO, SO_2 (1 hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. The standards for SO_2 (24-hour), sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.

b. National standards, other than O3 and those based on annual averages, are not to be exceeded more than once a year. The O3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

c. Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury.(1,013.2 millibars). All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

e. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

f. Measured as an arithmetic mean. New standard promulgated by ARB on June 20, 2002.

g. Measured as an arithmetic mean.

h. New standard promulgated by ARB on June 20, 2002.

i. Three-year average.

j. Three-year average of 95th percentile measurements.

k. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range when relative humidity is less than 70 percent.

The EPA designates all areas of the United States as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. The criteria for nonattainment designation varies by pollutant; for example, an area is in nonattainment for O3 if its NAAQS has been exceeded more than three discontinuous times in three years, and an area is in nonattainment for any other pollutant if its NAAQS generally has been exceeded more than once per year. The ARB also designates areas of the state as either in attainment or nonattainment of the CAAQS. An area is in nonattainment if the CAAQS has been exceeded more than once in three years.

The pollutants of primary concern considered in this analysis include reactive organic compounds (ROC), O3, CO, NO2, and particulate matter less than 10 microns in diameter (PM10).

3.3.1 Environmental Setting

The Project region occurs predominately within the San Joaquin Valley Air Basin (SJVAB) and South Coast Air Basin (SCAB)[1]. As shown on Figure 3.3-1, the Project region occurs within the jurisdictions of the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and the South Coast Air Quality Management District (SCAQMD). The SJUVAPCD jurisdiction includes the portion of Kern County west of a north-south line roughly 10 miles west of the town of Tehachapi, and all or a portion of Tulare, Kings, Fresno, Madera, Merced, Stanislaus, and San Joaquin counties. The SCAB consists of the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County.

3.3.1.1 State Water Project and Associated Facilities

Climate

Within the San Joaquin Valley, the climate is similar to that described in section 3.3.1.2 below for KCWA and WRMWSD. Within northern Los Angeles County and the Castaic Lake area, the climate is similar to that described in section 3.3.1.3 below for CLWA.

Baseline Air Quality

The California Aqueduct and associated facilities of concern predominately occur within the SJVAB and SCAB. Baseline air quality within these regions is described below in sections 3.3.1.2 and 3.3.1.3, respectively.

Local Regulations

SJVUAPCD regulations are described in section 3.3.1.2 below. SCAQMD regulations are described in section 3.3.1.3 below.

1 Although some SWP facilities lie outside of the SJVAB and SCAB, implementation of the Project would not affect the operation of these facilities or air quality within these areas. Also, the eastern portions of Kern County lie within the Mojave Desert Air Basin under the jurisdiction of the Kern County Air Pollution Control District. Implementation of the Project would not result in changes that would affect air quality within the Mojave Desert Air Basin.

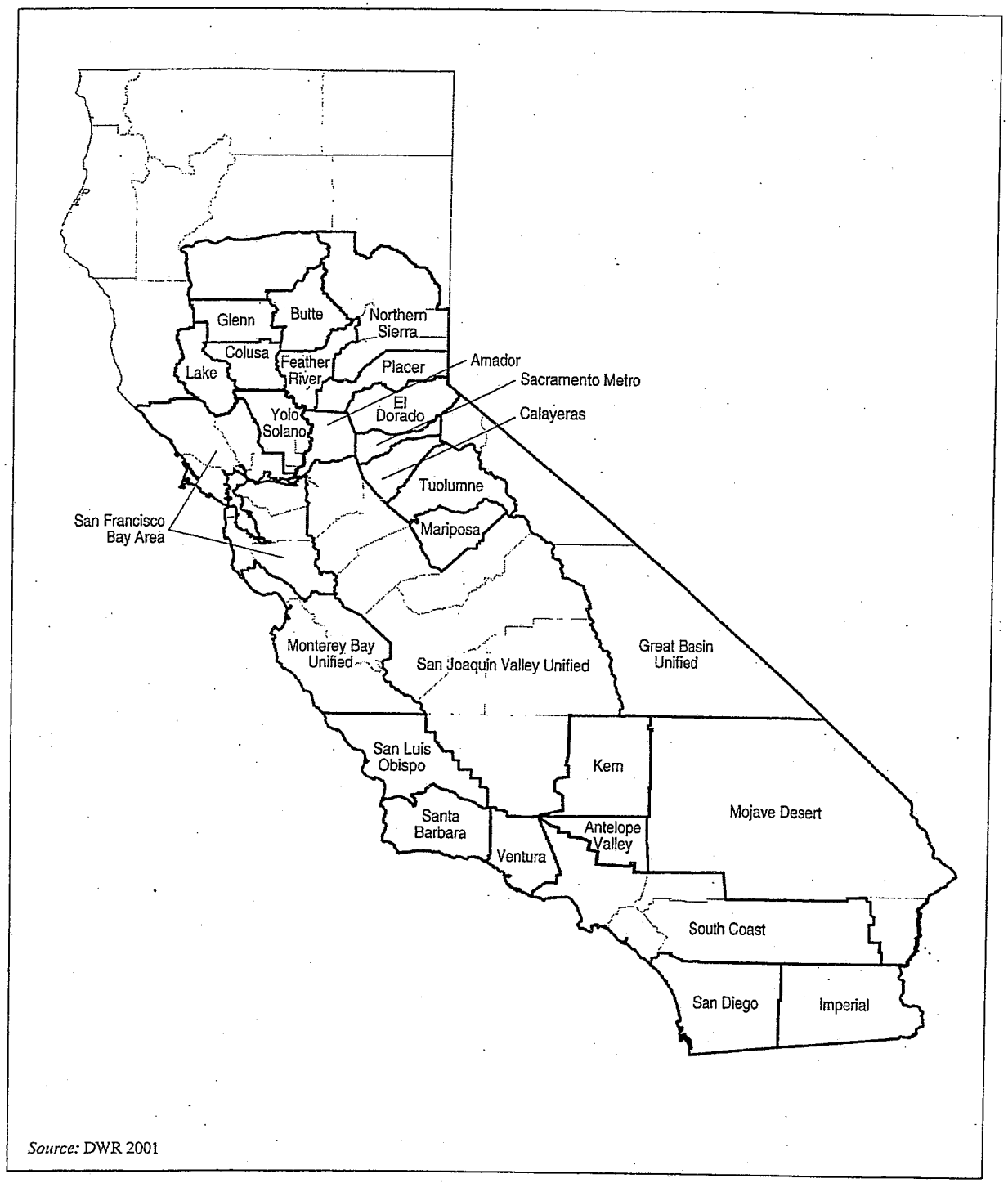

Figure 3.3-1. Boundaries of the San Joaquin Valley Unified Air Pollution Control District, and the South Coast Air Quality Management District and Adjacent Districts

3.3.1.2 *Wheeler Ridge-Maricopa Water Storage District*

Climate

The climate within the southern San Joaquin valley is classified as Mediterranean, and is characterized by dry, hot summers and mild, semi-arid winters. Average daily maximum temperatures within the WRMWSD range from 85 to over 100 degrees Fahrenheit (°F) in the summer and 50 to 60°F in the winter. The area is classified as a hot desert, where precipitation is less than half the potential evaporation. The rainy season typically occurs between November and April and produces as little as 5 inches of precipitation per year in the northwest portion of the district and about 18 inches per year in the mountainous regions to the east. Winds prevail from the northwest due to a semi-permanent high-pressure cell located off the Pacific Coast. During the colder months of the year, winds prevail from the south and southeast due to the presence of polar storms and topographical effects. Average wind speed is about 6 miles per hour, but extreme wind speeds can reach 60 to 80 miles per hour.

Baseline Air Quality

The district is located in the southernmost region of the SJVAB, which includes the western half of Kern County. Mountain ranges encompass the district on its western, southern, and eastern sides. This topography, combined with the prevailing wind patterns, inhibits dispersion and leads to an accumulation of pollutants in the region. Prevailing northwest winds also transport pollutants from the northern reaches of the SJVAB to the region and increase air pollutant concentrations in the area.

The Kern County portion of the SJVAB is presently in nonattainment of the NAAQS and CAAQS for PM_{10} and O_3. In November 2001, the EPA reclassified the SJVAB O_3 nonattainment designation from serious to severe. The SJVAB is currently in serious nonattainment for PM_{10} (SJVUAPCD 2002).

The main sources of PM_{10} within the SJVAB include wood and agricultural waste burning and fugitive dust. Fugitive dust is a major source of PM_{10} and results from (1) the operation of vehicles on paved and unpaved roads, (2) various agricultural operations, such as tilling, harvesting, and planting, and (3) windblown dust from disturbed ground areas. Geologic dust generated from dry, erodible soils is the primary component of PM_{10} exceedances during the fall. In 1995, road dust, farming operations, fugitive windblown dust, and waste disposal and burning produced about 85 percent (approximately 39, 24, 12, and 5 percent, respectively) of the PM_{10} in the SJVAB (ARB 1997). While the total emissions within the SJVAB decreased substantially between 1995 and 2002, the relative contributions of these sources to the total PM_{10} levels in the region did not change substantially during this period (SJVUAPCD 2002).

Concentrations of photochemical smog, or O_3, are highest during the warmer months of the year and coincide with the season of maximum insolation. Inert pollutant concentrations (pollutants other than O_3) tend to be the greatest during the winter months and are a product of light wind conditions and surface-based temperature inversions that are common during that time of year. These conditions tend to inhibit the dispersion of pollutants. The main sources of

O_3 precursor emissions (ROC and NO_x) within the SJVAB include gasoline-powered on-road vehicles, solvent usage, and farm operations (SJVUAPCD 2002).

Local Regulations

The SJUVAPCD is responsible for regulating stationary sources of emissions within the SJVAB and has developed rules and air quality attainment plans designed to reduce emissions to a level that will bring the region into attainment of the O_3 and PM_{10} ambient air quality standards. The SJVUAPCD originally adopted its 1991 Air Quality Attainment Plan and 1994 Ozone Attainment Demonstration Plan to bring the region into attainment of the state and national O_3 standards, respectively (SJVUAPCD 1994). The SJVUAPCD has subsequently amended these plans to show progress towards attaining the O_3 standards. Due to the inability of the region to attain the national O_3, the SJVUAPCD proposes to request the EPA to reclassify the SJVAB O_3 nonattainment designation from severe to extreme to allow for additional time to attain this standard (SJVUAPCD 2003a). As part of this proposal, the SJVUAPCD would adopt an Extreme Ozone Attainment Demonstration Plan by May 2004 and then submit this plan to the EPA for their approval.

The SJVUAPCD originally adopted its 1991 Moderate Area PM_{10} Plan (Moderate Plan) and the 1994 Serious Area PM_{10} Plan (Serious Plan) to bring the region into attainment of the national PM_{10} standard. The latest version of the PM_{10} attainment plan is the 2003 PM_{10} Plan (SJVUAPCD 2003b). Through this attainment planning process, the SJVUAPCD has developed Regulation VIII to reduce ambient concentrations of PM_{10} from fugitive dust (SJVUAPCD 2004). The 2003 PM_{10} Plan also contains a Draft Concept Conservation Management Practice Program (CMP Program) for the San Joaquin Valley to regulate fugitive dust emissions from on-field activities (tilling, harvesting, land preparation, fallowing, etc.). These on-field activities are currently not regulated by the SJVUAPCD. The CMP Program would apply to a number of "source categories" including windblown dust from on-field activities. Under the CMP Program, at the beginning of a year, farmers would be required to select a minimum of one control measure relating to windblown dust for the coming year. The specific measures are not identified in the Draft CMP Program; however, the practices to reduce fugitive dust emissions would fall into several broad categories including: practices that reduce or eliminate the need to disturb the soil; practices that protect the soil from wind erosion; equipment modifications to physically produce less PM_{10}; applying water or dust suppressants in off-field high traffic areas; reducing speeds or access on unpaved roads; and actions that reduce pesticide application.

3.3.1.3 Castaic Lake Water Agency

Climate

The climate in the CLWA service area is classified as Mediterranean, characterized by dry, hot summers and mild, semi-arid winters. Summer temperatures can reach as high as 110°F; winters are cooler, and winter temperatures can dip as low as 20°F. Average rainfall is about 18 inches per year in the flat areas and about 27 inches in the mountains. The region is subject to wide variations in annual precipitation.

Baseline Air Quality

The CLWA service area is located in the Santa Clarita Valley, which is in the northwestern portion of the SCAB. With regard to the NAAQS, the area of SCAB that encompasses the Project area is presently in "extreme" nonattainment for O_3 and "serious" nonattainment for CO and PM_{10}. With regard to the CAAQS, the SCAB is presently in "extreme" nonattainment for O_3, "severe" nonattainment for CO, and nonattainment for PM_{10}. These conditions were present in 1998; the key difference between 1998 and the present is that the federal and state standards for CO within the basin were met as of the end of 2002, and the SCAQMD will request reclassification as attainment for CO in the next few years (SCAQMD 2003).

Local Regulations

The SCAQMD is responsible for regulating emission sources within the SCAB. The SCAQMD has developed the 2003 Air Quality Management Plan (2003 AQMP) to bring the region into attainment of the state and national ambient air quality standards. Through this attainment planning process, the SCAQMD develops rules to regulate stationary sources of air pollution in the SCAB. The 2003 AQMP (1) updates the demonstration of attainment with the national standards for O_3 and PM_{10} (the 1999 Revised O_3 Plan and 1997 AQMP, respectively), (2) replaces the 1997 attainment demonstration for the national CO standard and provides a basis for a future maintenance plan for this pollutant, and (3) updates the maintenance plan for the national NO_2 standard that the SCAB has attained since 1992 (SCAQMD 2003).

3.3.2 Potential Impacts of the Project

3.3.2.1 *Significance Criteria*

The criteria used to define the significance of an air quality impact are based on the Appendix G of the State CEQA Guidelines. An impact would be significant if air pollutant emissions would:

- conflict with or obstruct implementation of an applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected ambient air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

3.3.2.2 *Environmental Impacts*

3.3.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities; nor would it change the operating criteria of these facilities or materially change their operation. The transfer would increase the amount of water transported in the California Aqueduct between the WRMWSD and CLWA turnouts. As discussed in section 3.14, Utilities and Service Systems, this action would increase the use of electrical power to operate water pumps and would change the timing of power usage.

Electrical power used by the SWP is obtained from SWP hydroelectric generating plants, the Reid Gardner Power Plant in Nevada, and other power producers in the Western U.S. (DWR 2002). These existing sources would provide the electrical power demands of the Project and therefore they would preclude the need to develop new power sources. The annual amount of electricity needed by the Project for pumping at the four SWP pumping plants located within or between WRMWSD and the CLWA service area (Teerink, Chrisman, Edmonston, and Oso) is estimated to be 140,000 MWh (see Utilities and Service Systems section 3.14.2.2). The air quality impacts associated with the generation of this power would depend upon the specific electrical generation source. For example, air emissions due to power generation could range from almost zero to some finite amount, depending upon whether the generation source was hydroelectric or fossil fuel-fired. Any existing fossil fuel-fired power plant that provides electricity for the Project would have to comply with all ambient air quality standards and applicable air permit conditions, such as emission offsets. Therefore, air quality impacts due to the generation of electrical power for the Project would be less than significant.

The SWP pumping plants are powered by electricity and their operation creates minimal air emissions. Therefore, implementation of the Project would have a less than significant impact to air quality as a result of increased pumping at these plants.

As described in section 3.0, minor seasonal changes in the average volume of water stored in San Luis Reservoir would result from Project implementation. The average volume of stored water would decrease slightly from December through June and would slightly increase the rest of the year. The amount of water stored in the reservoir already fluctuates, and the changes resulting from the Project would fall within the range of fluctuations present under both current and historic operations. Therefore, the Project would not produce fugitive dust emissions from exposed shorelines that differ from historic levels, and impacts would be less than significant. The volume of water stored at Castaic Lake would not change as a result of the Project, and air quality would not be affected.

No odors would be generated as a result of Project actions.

In summary, the Project would not (1) conflict with or obstruct implementation of an applicable air quality plan; (2) violate any air quality standard or contribute substantially to an existing or projected ambient air quality violation; (3) result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable

federal or state ambient air quality standard; (4) expose sensitive receptors to substantial pollutant concentrations; (5) or create objectionable odors affecting a substantial number of people. The Project would have less than significant impacts on air quality resources as a result of actions in the SWP and associated facilities.

INDIRECT IMPACTS

No indirect air quality impacts would occur.

3.3.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing WRMWSD water distribution facilities, nor would it change the current operation of these facilities. Therefore no direct air quality impacts would occur.

INDIRECT IMPACTS

As noted in section 3.2, the Project would not change agricultural practices (e.g., cropping patterns or land fallowing) in the WRMWSD and thus and would not affect the generation of fugitive dust emissions (PM_{10}) or other air emissions in the district.

3.3.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

Implementation of the Project would not require the construction of new CLWA facilities or the modification of existing CLWA facilities. Transferring an additional 41,000 AF of water through existing facilities for use within the service area would not directly affect air quality. The Project would not conflict with or obstruct implementation of an applicable air quality plan; violate any air quality standard or contribute substantially to an existing or projected ambient air quality violation; result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standard; expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors affecting a substantial number of people.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.3.3 Mitigation Measures

3.3.3.1 *State Water Project and Associated Facilities*

No direct or indirect significant impacts to air quality would occur; therefore no mitigation measures are required.

3.3.3.2 *Wheeler Ridge-Maricopa Water Storage District*

No direct or indirect significant impacts to air quality would occur; therefore no mitigation measures are required.

3.3.3.3 *Castaic Lake Water Agency*

No direct significant impacts to air quality would occur; therefore no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth Inducement and Growth-Related Impacts.

3.3.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project, with the exception of potential indirect impacts within the CLWA service area. These are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.4 BIOLOGICAL RESOURCES

3.4.1 Environmental Setting

3.4.1.1 State Water Project and Associated Facilities

Vegetation and Wildlife

CALIFORNIA AQUEDUCT AND ASSOCIATED FACILITIES

The California Aqueduct begins in the southern Delta near the city of Tracy. Historically, the Delta region was dominated by approximately 400,000 acres of tidal marshland, although extensive land reclamation for agricultural purposes in the late 1800s and early to mid 1900s have reduced the tidal marshland area to an estimated 18,000 acres in 1985 (CALFED 1999). Within the Delta region, agricultural lands now occupy approximately 72 percent of the total land area, with grassland and ruderal (disturbed), open-water, wetland, and riparian habitats occupying the majority of the remaining area (CALFED 1999). Grassland and ruderal habitats, although typically small in size, provide relatively high wildlife value within the region (CALFED 1999). Riparian scrub and woodland habitats with the Delta region typically occur on channel islands, on levees, and along unmaintained creeks, waterways and tributary channels (CALFED 1999). Seasonal fresh water and nontidal freshwater wetlands and marshes including vernal pools and flooded agricultural areas provide important habitat for migratory waterfowl, and shorebird populations (CALFED 1999). Tidal fresh water and brackish water emergent marsh habitat also provides important habitat for migratory waterfowl and shorebird population and supports a variety of special status species. Open water habitat within the Delta region consists of both deep water and shallow water areas. Deep-water areas tend to be unvegetated, while shallow water areas typically support a variety of aquatic plant species and provide resting and foraging habitat for water birds (CALFED 1999). Open water areas within the Delta region provide habitat for over 120 species of fish.

The California Aqueduct originates in the south Delta at Clifton Court Forebay (located 10 miles northwest of the city of Tracy). The forebay provides storage and regulation capability for pumping by the Banks Pumping Plant. The water pumped at Banks Pumping Plant must pass through the John E. Skinner Delta Fish Protective Facility where fish are separated from the water before the water is transported down the Aqueduct. SWP diversions at the Delta are currently governed by the State Water Resources Control Board's Water Right Decision 1641 (described in more detail in section 3.15 and Appendix D), which specifies criteria for which DWR must follow in SWP Delta operations. These criteria are intended to protect biological resources within the Delta.

South of the SWP facilities in the Delta, the California Aqueduct traverses the west side of the San Joaquin Valley to the Tehachapi Mountain Range in the southern end of the valley. The dominant land use within the San Joaquin Valley is agricultural and agricultural related uses. The Aqueduct within the San Joaquin Valley is a concrete lined canal with a few short segments of enclosed pipe. Biological resources within the Aqueduct, therefore, are limited to common fish species, mostly introduced, and a variety of invertebrate species that may occupy the water

column. Other upland species and birds may utilize the Aqueduct in some locations for drinking water or to forage for fish and invertebrates.

California Aqueduct from Tehachapi Mountain Range to Castaic Lake. At the southern end of the San Joaquin Valley, the open canal structure of the Aqueduct changes to enclosed pipes, which traverse the Tehachapi Mountains in a southerly direction to Pyramid Lake and eventually empty water into the Castaic Lake reservoir. No biological resources are associated with the piped portion of the Aqueduct.

San Luis Reservoir

San Luis Reservoir was constructed as a storage reservoir for the federal CVP and the California SWP. The water arrives through the California Aqueduct and the Delta-Mendota Canal, and is pumped from the O'Neil Forebay into the main reservoir during the winter and spring. The reservoir supports a large variety of fish and wildlife species both within the water column and in the areas surrounding the reservoir.

The dominant shoreline vegetation of the reservoir is grassland, making up approximately 70 percent of the shoreline (USBR 1997). Grassland vegetation community is characterized by the dominance of annual or perennial grasses. The remaining 30 percent of the shoreline vegetation consists of montane hardwood (USBR 1997). Montane hardwood consists of a well-defined tree layer composed predominately of broadleaved hardwood tree species, poorly developed shrub layer, and sparse herb layer (USBR 1997). A variety of reptiles, birds and mammals are typically associated with grassland and montane hardwood habitats. San Luis Reservoir supports a small number of diving and dabbling ducks (USBR 1997).

Approximately 55 percent of the shoreline vegetation of the O'Neil Forebay is grassland (USBR 1997). The forebay supports more than 200,000 wintering waterbirds, including American coot (*Fulica americana*) (dominant species), northern pintail (*Anas acuta*), ruddy duck (*Oxyura jamaicensis*), and American widgeon (*Anas americana*) (USBR 1997). O'Neil Forebay is one of the three most important wintering areas in California for the Barrow's goldeneye (*Bucephala islandica*) (USBR 1997).

The San Luis Reservoir complex is important recreational fishery area. Fish typically caught at the San Luis Reservoir complex include striped bass (*Morone saxatilis*), largemouth bass (*Micropterus salmoides*), catfish (*Ictalurus* sp.), bluegill (*Lepomis machrochirus*) and crappie (*Pomoxis* sp.) (DWR 2001c).

Castaic Lake

Castaic Lake is a terminal water storage facility for the SWP located in the northern portion of the Santa Clarita valley at the confluence of Castaic Creek and Elizabeth Lake Canyon Creek. Adjacent to the lake, vegetation consists of dry upland scrub and chaparral communities on the steep slopes above the water. The steep banks along almost the entire parameter of the lake and fluctuating water levels prevent the establishment of shoreline vegetation, and therefore, there is minimal shoreline and aquatic vegetation associated with the lake. Scattered willows (*Salix* sp.) and mulefat (*Baccharis salicifolia*) exist in areas with more gradually sloped banks. The

banks of Castaic Lagoon, located immediately below Castaic Dam, are less steep than the banks of the lake and water levels in the lagoon are kept relatively constant.

Native wildlife associated with, and adjacent to, Castaic Lake includes both terrestrial and aquatic species. The arid hills surrounding the lake support species adapted to the hot, dry conditions, such as the western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), western rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis melanoleucus*), black-tailed jackrabbit (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), and bobcat (*Lynx rufus*). Species more directly associated with the lake include osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), which both occasionally winter at the lake, and a variety of species of waterfowl and fish.

Castaic Lake is an important recreational fishing lake, and is known for its trophy-sized largemouth bass. Other fish species include striped bass, bluegill, crappie, channel catfish (*Ictalurus punctatus*), white catfish (*Ictalurus catus*), and threadfin shad (*Dorosoma petenense*). Hatchery raised rainbow trout (*Oncorhynchus mykiss* sp.) are also stocked annually.

Special Status Species

Numerous adopted Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs) exist within the Delta region, the San Joaquin Valley and other areas traversed by, or containing SWP facilities. Sensitive plant communities and special status plant and animal species in the Delta region, San Joaquin Valley and associated with the California Aqueduct are described in detail in the CALFED Bay-Delta Program Environmental Impact Statement (EIS)/EIR (CALFED 1999), and the Central Valley Project Improvement Act Draft Programmatic EIS (USBR 1997). These documents are available from the CALFED Bay-Delta Authority, 650 Capitol Mall, 5th Floor, Sacramento, California 95814, and the U.S. Bureau of Reclamation, 2800 Cottage Way, Sacramento California 95825-1898.

CALIFORNIA AQUEDUCT AND ASSOCIATED FACILITIES

The Delta region supports many sensitive plant communities as well as dozens of special status plant and animal species. The San Joaquin Valley also supports a large number of special status plant and wildlife species with the largest number occurring in grassland and valley foothill woodland habitats (CALFED 1999). No vegetation persists within the Aqueduct, limiting habitat to the water column. Some sensitive species occurring in the vicinity of the Aqueduct, such as the pallid bat (*Antrozous pallidus*), may occasionally utilize the Aqueduct to forage for insects or other small prey inhabiting the water in the Aqueduct.

SAN LUIS RESERVOIR

According to the California Natural Diversity Database (CNDDB), sensitive species known to occur in the San Luis Reservoir area include, although may not be limited to the following, blunt-nosed leopard lizard (*Gambelia silus*), California tiger salamander (*Ambystoma californiense*), burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alphestris actia*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), and San Joaquin kit fox (*Vulpes macrotis mutica*) (CNDDB 2002).

CASTAIC LAKE

Sensitive plant species known to occur in the Castaic Lake area include, although may not be limited to: Nevin's barberry *(Berberis nevinii)*, and San Gabriel bedstraw *(Galium grande)* (California Department of Parks and Recreation 1985; CNDDB 2002). Both Nevin's barberry and San Gabriel bedstraw occur in chaparral or cismontane woodland habitat areas, and may occur in appropriate upland habitat areas around Castaic Lake. One additional sensitive plant species, the San Fernando Valley spineflower, has historically been in the area (CNDDB 2002). Sensitive wildlife species known to occur in the Castaic Lake area include, although may not be limited to the following: California condor *(Gymnogyps californianus)*, bald eagle, osprey, golden eagle *(Aquila chrysaetos)*, least bell's vireo *(Vireo bellii pusillus)*, arroyo toad *(Bufo californicus)*, California red-legged frog *(Rana aurora draytonii)*, San Diego horned lizard, coastal western whiptail *(Cnemidophorus tigris multiscutatus)*, San Diego black-tailed jackrabbit *(Lepus californicus bennettii)*, San Diego desert woodrat *(Neotoma lepida intermedia)*, Southern California rufous-crowned sparrow *(Aimophila ruficeps ruficeps)*, and Bell's sage sparrow *(Amphispiza belli belli)* (CCWA 1995, PCR 2000, CNDDB 2002).

3.4.1.2 *Wheeler Ridge-Maricopa Water Storage District*

Vegetation and Wildlife

Most of the lands in the district are cultivated agricultural areas. The predominant habitat on lands not cultivated is annual grassland characterized by introduced annual grasses and a combination of native and non-native forbs (Lower Sonoran grassland [Moe and Twisselmann 1995], California prairie [Williams 1998], or non-native grassland [Holland 1986]). Formerly cultivated lands typically support an annual grassland community dominated by introduced grasses such as red brome (*Bromus madritensis rubens*), common foxtail (*Hordeum glaucum*), and wild oats (*Avena fatua*). Within the district, there are also fairly extensive areas of chenopod scrub vegetation (Holland 1986) dominated by shrubby members of the family Chenopodiaceae, typically saltbushes (*Atriplex* spp.). Riparian, wetland, and open water habitats are limited to short stretches along intermittent or ephemeral stream channels, agricultural ponds and drainage ditches, and along the California Aqueduct.

Higher elevation foothill areas within the district were historically characterized by Blue Oak Woodland habitat. Blue Oak Woodland is characteristically an open woodland dominated by blue oak (*Quercus douglasii*) with a grassy or shrubby understory. It is found, for example, on the slopes of the middle elevations of the mountains at the southern end of the San Joaquin Valley. Blue oak is often accompanied by gray pine (*Pinus sabiniana*).

The alkali sink community in Kern County was formerly relatively extensive, surrounding lakes in undrained valley bottom habitats where salts accumulated from evaporating water. This community is also associated with sag ponds along major fault zones (1967, reprinted in Moe and Twisselmann 1995). Alkali-tolerant species are often perennial, markedly halophytic, and highly specialized members of the family Chenopodiaceae, such as glasswort pickleweed (*Salicornia subterminalis*), iodine bush (*Allenrolfea occidentalis*), and sea-blite (*Suaeda moquinii*). Much of the land supporting this community has been converted to productive farmland.

The native wildlife composition of the district and the San Joaquin Valley has been affected by the extensive conversion of native habitats to cropland and the fragmentation of the remaining habitat. Upland wildlife species have been replaced over large areas by a small subset of native and introduced wildlife species that are more ubiquitous and frequent row crops, vineyards, or orchard agricultural operations. Typical mammalian species of the area include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse, big brown bat (*Eptesicus fuscus*), coyote, opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), introduced red fox (*Vulpes vulpes*), and striped skunk (*Mephitis mephitis*). Typical birds include the American crow (*Corvus brachyrhynchos*), house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferus*), lark sparrow (*Chondestes grammacus*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), red-winged blackbird (*Agelaius phoeniceus*), and the American robin (*Turdus migratorius*). Birds of prey occur in a large variety and number in the area due to the abundant rodent populations that thrive in fallow fields and grazing lands. Common birds of prey in the area include the golden eagle, red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), and turkey vulture (*Cathartes aura*), great horned owl (*Bubo virginianus*), and barn owl (*Tyto alba*). Native waterfowl and herons, such as the American avocet (*Recurvirostra americana*), snowy plover (*Charadrius alexandrinus*), mallard duck (*Anas platyrhynchos*), northern pintail duck (*Anas acuta*), gadwall duck (*Anas strepera*), common teal duck (*Anas crecca*), redhead duck (*Aythya americana*), northern shoveler duck (*Anas clypeata*), eared grebes (*Podiceps nigricollis*), great blue heron (*Ardea herodias*), and the snowy egret (*Egretta thula*) are concentrated in natural water bodies with aquatic and wetland habitat as well as many man made features where these habitat types have developed.

Species that were once widespread and characteristic of native Central Valley habitats such as the San Joaquin kit fox (*Vulpes macrotis mutica*), San Joaquin pocket mouse (*Perognathus inornatus*), and burrowing owl (*Athene cunicularia*) are now rare in the area due to the extensive conversion of native valley habitat to other uses. These species are discussed below under the subheading of sensitive species.

Plants and animals of the southern San Joaquin Valley were described in recent field investigations conducted for the San Emidio New Town Specific Plan (Kern County 1992a, b), Pacific Pipeline Project (Aspen Environmental Group 1996), and Metropolitan Bakersfield Habitat Conservation Plan (City of Bakersfield 1994). Additional relevant data are assembled in the San Joaquin Valley Endangered Species Recovery Program (Williams 1998; USFWS 1997) and Kern County Draft Valley Floor Habitat Conservation Plan (Kern County 2001). General discussions of the vegetation of the region are provided in Twisselmann (1967, reprinted in Moe and Twisselmann 1995).

Sensitive Species and Habitats

Sensitive plants include state and federally listed, proposed, and candidate species, and species listed in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CNPS 2001). This evaluation includes plants that were identified in previous site inventories (Mitchell 1991, Aspen Environmental Group 1996). Sensitive plants known or likely to occur within the district and greater San Joaquin Valley floor are provided in Appendix B.

Sensitive wildlife species include state and federally listed, proposed and candidate species, and state and federal species of concern. The sensitive wildlife species potentially occurring or known to occur within the district and greater San Joaquin Valley floor are provided in Appendix B. Since 1998, the federal status of the Buena Vista Lake shrew (*Sorex ornatus relictus*) has changed from federal species of concern to federally listed as endangered (CNDDB 2002).

There are no significant stands of designated sensitive plant communities within the district. Undeveloped grassland and saltbush scrub habitats south of Highway 166 support noteworthy stands of the endangered Bakersfield cactus (*Opuntia basilaris* var. *treleasei*) and so would be considered sensitive with regard to future land use decisions.

An HCP has been adopted for the Metropolitan Bakersfield Area. Kern County is in the process of developing the Kern County Valley Floor Habitat Conservation Plan (KCVFHCP) for additional portions of the county. A draft of the KCVFHCP was released in April 2001 for public review, and the United States Fish and Wildlife Service (USFWS) released a Notice of Intent to prepare an EIS for the KCVFHCP in October 2002 (USFWS 2002). In addition, the Tejon Ranch Valley Floor HCP (TRVFHCP) is being developed for Tejon Ranch lands within the San Joaquin Valley, some of which are within the district.

3.4.1.3 *Castaic Lake Water Agency*

Vegetation and Wildlife

For the most part, the CLWA service area coincides with the Santa Clarita planning area (City of Santa Clarita 1991) and encompasses the Santa Clara River Valley, the east extension of the Santa Susana Mountains, the westernmost reaches of the San Gabriel Mountains, and the southern slopes of the Sierra Pelona. The principal natural features of the Santa Clarita Valley include the Santa Clara River (which is a dry riverbed most of the year, although portions contain riparian habitat patches), Castaic Valley, San Francisquito Canyon, Bouquet Canyon, Placerita Canyon, and Hasley Canyon. The Santa Clara River flows west intermittently from the San Gabriel Mountains to the Santa Susana Mountains and on through Ventura County to the ocean. This complex topography provides a natural setting that supports a diverse assemblage of biotic communities (City of Santa Clarita 1991).

Much of the existing development is concentrated along the Santa Clara River and Interstate 5. Although substantial portions of the Santa Clarita planning area have been developed, a large portion of the lands within the CLWA service area remains undeveloped. These undeveloped lands still support ecologically important vegetation and wildlife habitats. Major vegetation/habitat types include oak woodlands (distinct stands of valley oak, coast live oak, and interior live oak can be distinguished), chaparral, Southern California walnut woodlands, coastal and/or Riversidean (Venturan) sage scrub, non-native grassland, riparian scrub (characterized by mulefat and/or shrubby willows), and riparian woodlands (characterized by large willows and cottonwoods [*Populus fremontii*], including densely forested areas). Although large amounts of riparian habitat are not present in the CLWA service area, this habitat is important where it does occur. Inventories of plants and wildlife associated with these habitats are described in Aspen Environmental Group (1996) and County of Los Angeles (1996). The current vegetation and habitat setting is generally the same as in 1998; however, continued

growth and development in the area have resulted in some conversion of habitat to urban land uses.

In addition to the above habitats, there is open water habitat provided by Castaic Lake, Castaic Lagoon, and limited areas along the Santa Clara River. Except during and immediately after rainfall and runoff events, open water in the Santa Clara River west of Interstate 5 is principally a result of permitted discharges from the regional water reclamation facilities. Castaic Lake supports recreational fishing for bass, trout, catfish and bluegill, along with swimming, boating, and other recreation. The Santa Clara River is a regionally significant habitat area for native fishes and other wildlife.

Sensitive Species and Habitats

Within the CLWA service area, no regional HCPs or NCCPS have been adopted. However, some unincorporated portions of the service area are subject to Los Angeles County Significant Ecological Area (SEA) zoning overlays, which indicate the presence of sensitive resources and require county environmental review. These areas are discussed at greater length below.

Sensitive plants and animals potentially occurring or known to occur within the CLWA service area are listed in Appendix D. These compilations are based largely on the EIRs for the Pacific Pipeline Project (Aspen Environmental Group 1996) and the Newhall Ranch Specific Plan (County of Los Angeles 1996), and the Los Angeles County SEA Update Study (PCR 2000), all of which provide information on the regional and local occurrence of sensitive species in the area. These documents are available from the County of Los Angeles, Department of Regional Planning, 320 West Temple Street, Los Angeles, California 90012. Sensitive species information was also gleaned from the CNDDB (CNDDB 2002).

Los Angeles County has designated five locations in and around the Santa Clarita Valley as SEAs. The SEAs include the Santa Clara River, the Santa Susana Mountains, San Francisquito Canyon, Lyon Canyon, and Valley Oaks Savannah and are described below (City of Santa Clarita 1991). The SEAs are originally described in England and Nelson (1976).

1. **Santa Clara River.** This is the largest SEA in the Santa Clarita Valley, extending through the City of Santa Clarita and along the entire Santa Clara River watershed. It supports a variety of natural habitats including freshwater marsh, coastal sage scrub, oak woodland, and riparian woodlands. A great portion of the river channel, through the Santa Clarita planning area, is ephemeral and remains dry for most of the year. In scattered areas, however, the water table under the streambed is high, and lush riparian vegetation provides refuge for birds and wildlife. This assemblage of vegetation described as a broad wash association in the SEA descriptions is unlike that found in steeper mountain canyons. It is the only major river drainage from the San Gabriel Mountains that remains unchannelized for most of its length. This area was designated as an SEA primarily because of the threat of loss of suitable habitat for the unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), a federally and state-listed endangered species. This species formerly occurred in the Los Angeles, San Gabriel, and Santa Ana rivers but is now restricted to San Francisquito Canyon, three areas in the Santa Clara River, and San Antonio Creek on Vandenberg Air Force Base. The

stickleback requires clean, free-flowing perennial streams and ponds surrounded by natural vegetation. The adjacent floodplain of the Santa Clara River is included in this SEA in order to preserve this habitat. The natural vegetation along the intermittent portion of the stream slows heavy runoff during rainy seasons and thus decreases destruction and siltation of stickleback habitats downstream.

2. **Santa Susana Mountains SEA.** The westernmost portion of the Santa Clarita planning area encompasses a portion of this SEA that covers 12,000 acres. These mountains are one of several relatively small ridges (dominated by Oat Mountain at elevation 3,840 feet) that form the eastern end of the transverse ranges and blend eastward into the larger San Gabriel and San Bernardino Mountains. The Santa Monica Mountains are also part of this system. Vegetation within this SEA consists of coastal sage scrub on the south-facing sunlit slopes and dense chaparral on the north facing slopes. Riparian and oak woodland vegetation is found along stream drainages and within canyons, along with bigcone spruce (*Pseudotsuga macrocarpa*), bigleaf maple (*Acer macrophyllum*), and California walnut (*Juglans californica*). The oak woodland habitat is extremely diverse containing six species of oaks. The interior portions of the Santa Susana Mountains are largely undisturbed by the urbanization that has occurred both to the south (San Fernando Valley) and to the north (Santa Clarita). These wilderness areas are important for maintaining gene flow and wildlife movement between the Santa Monica and the San Gabriel mountains, which are now largely isolated from one another by urban development.

3. **San Francisquito Canyon SEA.** San Francisquito Canyon SEA contains an intermittent stream that drains the hillsides north of the planning area in the Angeles National Forest. Riparian vegetation is located in the canyon bottom along the stream channel, while grasslands and chaparral are found on the walls. This SEA was designated because it supports populations of the unarmored threespine stickleback. The San Francisquito Canyon SEA is currently maintained to prevent downstream siltation of the Santa Clara River and provide constant water flows to preserve designated critical habitat for the unarmored threespine stickleback. The San Francisquito floodplain is included in the SEA in order to preserve downstream stickleback habitats.

4. **Lyon Canyon SEA.** The Lyon Canyon SEA is located in the southwest portion of the Santa Clarita planning area, west of Interstate-5, and covers approximately 150 acres. This SEA is a relatively narrow canyon that contains both an oak woodland community and a substantial chamisal chaparral community. The oak woodland, found in the southern portion of the SEA contains both the coast live oak (*Quercus agrifolia*) and the valley oak. The northern region of the SEA contains the chaparral community consisting of species such as sugarbush (*Rhus ovata*), ceanothus (*Ceanothus* sp.), black sage (*Salvia mellifera*), mulefat, and chamise (*Adenostoma fasiculatum*), the latter of which is the dominant shrub.

5. **Valley Oaks Savannah SEA.** The Valley Oaks Savannah SEA covers approximately 400 acres and is located west and east of Interstate-5, south of the Valencia Boulevard interchange. This area contains one of the last remaining stands of valley oak in the Santa Clarita Valley, and it represents the southernmost limit of large, contiguous Valley

Oak Savannah in California. Although the stand is quite extensive, little regeneration is occurring, possibly due to grazing or other disturbances. The vegetative land cover consists mainly of weed-dominated grasslands. Scattered coast live oaks occur throughout the area as well. Recent development, however, has significantly altered this SEA.

The County of Los Angeles is currently reviewing the SEA program as part of the General Plan Update. Recommendations from the county's consulting biologist include revised boundaries that would group smaller SEAs into larger connected SEAs (PCR 2000). Although the proposed boundaries cover a considerably larger area, they generally contain the same resources that persist in the exiting SEAs. A revised general plan and SEA program are not expected to be adopted until mid to late 2004.

Other sensitive biological resources located within the CLWA service area include riparian habitats, oak woodlands, walnut woodlands, and potential nesting and foraging habitat for sensitive and endangered species.

Riparian habitats, especially along the Santa Clara River, provide nesting and foraging habitat for many sensitive bird species including the federally and state listed endangered least Bell's vireo and the federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*). Scrub habitat in the foothills supports some of the most northerly occurrences of the federally listed threatened California gnatcatcher (*Polioptila californica californica*). Riparian habitats along the Santa Clara River, Soledad Canyon, and/or San Francisquito Canyon support population of the federally and state listed endangered unarmored threespine stickleback, federally listed endangered Santa Ana sucker (*Catostomus santaanae*), federally listed endangered arroyo toad, and the federally listed threatened California red-legged frog. Vernal pool habitat in the vicinity of Cruzan Mesa have historically supported the federally listed threatened vernal pool fairy shrimp (*Branchinecta lynchii*), federally listed endangered Riverside fairy shrimp (*Streptocephalus woottoni*), federally listed threatened spreading navarretia (*Navarretia fossalis*), and the federally and state listed endangered California Orcutt grass (*Orcuttia californica*) and thread-leaved brodiaea (*Brodiaea filifolia*). Two additional listed plant species, federally and state listed endangered Nevin's barberry and slender-horned spineflower (*Dodecahema leptoceras*), have been documented in the region (City of Santa Clarita 1991; PCR 2000). Since 1998, the San Fernando Valley spineflower was added to the state endangered list (CNDDB 2002). Additionally, the Arroyo toad was moved from the federal list of threatened species to the list of endangered species. With the above exceptions, the current environmental setting is generally the same as it was in 1998; however, continued growth and development in the area may have resulted in some impacts to the abundance of sensitive species with the conversion of land to urban uses.

Other important habitats and biological resource areas within the Santa Clarita planning area are listed below (from City of Santa Clarita 1991):

- Land within the Angeles and Los Padres National Forests, including Elsmere Canyon, and wildlife corridors between the Santa Susana Mountains and the San Gabriel Mountains.

- Canyon areas, including Whitney Canyon, Elsmere Canyon, Wiley Canyon, East Canyon, Towsley Canyon, Rice Canyon, San Francisquito Canyon, and other canyons that provide important habitat (water, food and shelter) and biological resources, and add to the viewshed of the Santa Clarita Valley.
- Open water habitat provided by Castaic Lake, Castaic Lagoon, and isolated locations along the Santa Clara River.
- Habitat for federally listed endangered, threatened, or rare plant and wildlife species found in chaparral and coastal sage scrub vegetation.
- State listed endangered plant and wildlife species found in chaparral and coastal sage scrub habitat.
- Oak trees that are protected by ordinances within the City of Santa Clarita and elsewhere in Los Angeles County.

3.4.2 Potential Impacts of the Project

3.4.2.1 Significance Criteria

The criteria used to determine the significance of impacts to biological resources are based on Appendix G of the State CEQA Guidelines. The Project would result in a significant impact if it would:

- have a substantial adverse impact, 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 CDFG or USFWS;
- have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS;
- adversely impact federally protected wetlands (including marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any resident or migratory fish or wildlife species or with the established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, NCCP, or other approved, local, regional, or state habitat conservation plan.

For the purpose of this analysis, "sensitive" habitats or species are those that are demonstrably rare, threatened, or endangered; are protected by statute or regulation; or have recognized commercial, recreational, or scientific importance.

3.4.2.2 *Environmental Impacts*

3.4.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities. The annual amount of SWP diversions from the Delta would be unchanged, and runoff would continue to be captured when available and stored in SWP and local facilities. Runoff would be used to meet SWP demand based on current SWP operating criteria and management practices. As described in section 3.0, the timing of SWP diversions at the Delta could change slightly, although this change would be minor and within the current operating criteria. The slight change in the timing of diversions would not result in an impact to biological resources.

The Project would result in a slight increase in the amount of water transported in the California Aqueduct from southern Kern County to Castaic Lake. This change would not adversely impact fish or other wildlife that use the Aqueduct. As described in section 3.0, minor seasonal changes in the average volume of water stored in San Luis Reservoir would result from Project implementation. The average volume of stored water would decrease slightly from December through June and would slightly increase the rest of the year. The amount of water stored in the reservoir already fluctuates, and the changes resulting from the Project would fall within the range of fluctuations present under both current and historic operations. Impacts to biological resources at San Luis Reservoir would be less than significant. The volume of water stored at Castaic Lake would not change as a result of the Project, and biological resources would not be impacted.

Since the only changes to the operation of SWP facilities are minor and since no construction would occur, the Project would not adversely impact candidate, sensitive, or special status species, riparian habitat or other sensitive natural communities, federally protected wetlands; interfere with the movement of any fish or wildlife species or impede the use of native wildlife nursery sites; conflict with any local policies or ordinances protecting biological resources, or conflict with the provisions of an adopted HCP, NCCP, or other approved, local, regional, or state HCP. In summary, there would be no direct impact to biological resources for the California Aqueduct, associated facilities, or adjacent lands.

INDIRECT IMPACTS

No indirect impacts to biological resources would occur.

3.4.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

The Project would not result in changes in the amount of land actively used for agriculture or other uses. Since the Project would not require new construction, no direct loss of habitat or impacts to sensitive species would occur from construction activities. Overall, the Project would not adversely impact candidate, sensitive, or special status species, riparian habitat or

other sensitive natural communities, federally protected wetlands; interfere with the movement of any fish or wildlife species or impede the use of native wildlife nursery sites; conflict with any local policies or ordinances protecting biological resources, or conflict with the provisions of an adopted HCP, NCCP, or other approved, local, regional, or state HCP.

INDIRECT IMPACTS

No indirect impacts to biological resources would occur.

3.4.2.2.3 Castaic Lake Water Agency

DIRECT IMPACTS

Since implementation of the Project would not require the construction of new CLWA facilities or modification of existing CLWA facilities, no direct impact to biological resources would occur.

INDIRECT IMPACTS

Potential environmental impacts from growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.4.3 Mitigation Measures

3.4.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to biological resources were identified, therefore no mitigation measures are required.

3.4.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to biological resources were identified, therefore no mitigation measures are required.

3.4.3.3 Castaic Lake Water Agency

No direct significant impacts to biological resources were identified, therefore no mitigation measures are required. Indirect impacts are addressed in Chapter 4, Growth Inducement and Growth-Related Impacts.

3.4.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project, with the exception of potential indirect impacts within the CLWA service area. These are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.5 CULTURAL RESOURCES

3.5.1 Environmental Setting

Cultural resources include prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events, or sites of traditional/cultural importance.

These "historical resources" are defined in State CEQA Guidelines section 15064.5 as the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (Pub. Res. Code section 5024.1, Title 14 CCR, section 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code section 5024.1, Title 14 CCR, section 4852), including the following:
    a. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b. is associated with the lives of persons important in our past;
    c. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    d. has yielded, or may be likely to yield, information important in prehistory or history.

Paleontologic resources are the recognizable remains of once-living, non-human organisms. Identified as fossils, these resources represent a record of the history of life on the planet dating as far back as approximately four billion years ago. Paleontologic resources can include shells, bones, leaves, trails, and other fossilized floral or faunal materials.

3.5.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP.

California Aqueduct

The California Aqueduct is a 444-mile-long concrete-lined canal running between the Delta and Lake Perris. The oldest sections were built in the early 1960s, and the most recent sections were built in the early 1990s. The California Aqueduct, along with the regional feeder aqueducts, passes through Alameda, Contra Costa, San Joaquin, Stanislaus, Merced, Fresno, Kings, Kern, Santa Barbara, San Luis Obispo, Los Angeles, and San Bernardino counties. Its corridor includes the areas traditionally inhabited by the Miwok, Northern Valley Yokuts, Southern Valley Yokuts, Chumash, Tataviam, Gabrielino, Serrano, Cahuilla, and other neighboring tribes.

San Luis Reservoir

San Luis Reservoir is a storage reservoir for the CVP and SWP that was filled for the first time in 1969. San Luis Reservoir is located on the flanks of the San Joaquin Valley, on land that was traditionally inhabited by the Northern Valley Yokuts at the time of first European contact. The San Joaquin River, associated channels and sloughs, formed the core of the Northern Yokuts' homeland (Wallace 1978a). The Northern Yokuts' subsistence practices centered around the San Joaquin River, fishing salmon and harvesting tule roots that grew in riverine marshes. Acorns from valley oaks also played an important role in their diet, and were made into a thick soup or gruel. The valley floor of the San Joaquin River region contains numerous Native American archaeological sites, such as stone tool manufacturing stations (i.e., lithic scatters) and acorn processing sites (e.g., bedrock mortars) (USBR 1997).

The Northern Yokut population rapidly declined as the result of disease, missionization, and, later, by the arrival of American miners and settlers during the gold rush years (Wallace 1978a). Spanish soldiers, Mexican ranchers, and early gold miners traveled through nearby Pacheco Pass, named after Don Juan Pacheco who settled there in 1840, and the pass became part of an early stage route between San Francisco and Missouri. By the late 1800s, the economy of the west side of San Joaquin Valley was firmly rooted in agricultural pursuits (USBR 1997). The San Joaquin River region contains numerous historic sites related to early mining, settlement, and agricultural (USBR 1997). There may be historic, prehistoric, or paleontologic sites either along the reservoir margins or located on submerged knolls.

Castaic Lake

The West Branch of the California Aqueduct terminates at Castaic Lake, in the northern portion of the CLWA service area. Local ethnographic groups and historic land uses are the same as those described for the CLWA service area in section 3.5.1.3 below.

The creation of the Castaic Dam and lake facility in 1972 inundated cultural resources located along on the margins of the lake (CCWA 1995), including seven prehistoric sites listed in Table 3.5-1. No historic resources are recorded in the area; however, no systematic survey of the lake margins was conducted prior to the construction of the dam (CCWA 1995). Therefore, there

Table 3.5-1. Castaic Lake Cultural Resources

Site	*Description*	*Condition*
CA-LAN-323	Prehistoric village site with bedrock mortars	Cultivated prior to inundation
CA-LAN-324	Prehistoric village with cemetery	Bulldozed before inundation
CA-LAN-325	Prehistoric rock shelter	Heavily looted
CA-LAN-326	Prehistoric stone tool scatter	Crossed by highway prior to inundation
CA-LAN-327	Prehistoric temporary camp	Cultivated prior to inundation
CA-LAN-1221	Prehistoric sandstone rock shelter	Lake flooding, boating access, and illicit artifact collection
CA-LAN-1222	Prehistoric sandstone rock shelter	Lake flooding, boating access, and illicit artifact collection

Note: No historic resources have been recorded.
Source: CCWA 1995.

may be unrecorded historic, prehistoric, or paleontologic sites either along the lake margins or located on submerged knolls.

3.5.1.2 *Wheeler Ridge-Maricopa Water Storage District*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. Several ethnographic groups were scattered throughout what is now Kern County, including the Southern Valley Yokuts, Kitanemuk, Castac Chumash (Heizer 1978). The Southern Valley Yokuts inhabited the southern end of the San Joaquin Valley, from the lower Kings River to the Tehachapi Mountains (Wallace 1978b). The Kitanemuck were located principally in the Tehachapi Mountains at the southern end of the San Joaquin Valley (Blackburn and Bean 1978), while the traditional territory of the Castac Chumash is located in the southwestern portion of Kern County (Grant 1978a). Cultivated areas are considered to have a low to moderate cultural resource sensitivity because historic plowing and grading associated with cultivated agriculture generally destroys or damages the integrity of any cultural sites within the cultivated area.

Although Spanish explorers entered Kern County area as early as the 1770s, major European influence began in the mid-1800s with the influx of settlers associated with Spanish land grants and gold miners drawn to the 1857 gold discovery in the Greenhorn Mountain area of eastern Kern County. As gold-fever declined, agricultural pursuits and oil exploration began to grow in Kern County, and historic resources in the county are often associated with these early industries.

3.5.1.3 *Castaic Lake Water Agency*

For purposes of this analysis, no substantial changes in baseline conditions have occurred between 1998 and the present. The CLWA service area is located in Ventura and Los Angeles counties, where at least four distinct ethno-linguistic groups were living at the time of first European contact. The area around Castaic Lake itself was the home of the Tataviam, a group of about 1,000 people who lived in villages along Piru Creek, Castaic Creek, and the upper

portions of the Santa Clara River drainage (King and Blackburn 1978). The lower Santa Clara River drainage was home to the Ventureño Chumash, a much larger (about 4,000 people) and more maritime oriented group (Grant 1978b). The upper portions of Piru Creek, along with much of the inland portions of Ventura County, were inhabited by the Emigdiano and Castac Chumash (Grant 1978a). Native American archaeological sites from various time periods exists within the CLWA service area, especially along the Piru and Castaic drainage systems, at the Vasquez Rocks and Escondido Canyon, and along major ridgelines (CLWA 1999).

Spanish contact with Native American groups along the coast began as early as the mid 1500s, but it was not until the late 1700s that the Spanish, and then Mexicans, established any kind of continuous presence. The discovery of gold in Placerita Canyon near Newhall during the 1840s attracted many miners to the area, and agricultural and livestock operations rose up in the Santa Clara River valley to support their need for provisions. Oil was discovered in the area in the 1870s, and settlement accelerated throughout the late 1800s with the development of regional and interregional transportation systems. Historic resources documented in the CLWA service area are usually associated with major routes of travel, watercourses, and early homesteading practices in and around Newhall (Scientific Resource Surveys 1988).

The CLWA service area contains at least three types of geologic units that have yielded fossilized material. Fossilized fish, shark teeth, and invertebrate remains have been recovered from the Castaic Formation, remains of Clarendonian land mammals have been recorded in the Saugus Formation, and marine invertebrates are often common in Quaternary terrace deposits (Scientific Resource Surveys 1988).

3.5.2 Potential Impacts of the Project

3.5.2.1 Significance Criteria

Section 15064.5 of the CEQA Guidelines indicates a project may have a significant environmental effect if it causes "substantial adverse change" in the significance of an "historical resource" or a "unique archaeological resource" as defined or referenced in CEQA Guidelines section 15064.5[b, c]. Such changes include "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines section 15064.5 [b]).

An impact on cultural resources is considered significant, therefore, if it adversely affects a resource that is listed in or eligible for listing in the California Register of Historical Resources or is otherwise considered a unique or important archaeological resource under CEQA. In general, a project may have an adverse effect on a cultural resource if it would:

- cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines section 15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines section 15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- disturb any human remains, including those interred outside of formal cemeteries.

3.5.2.2 *Environmental Impacts*

Direct impacts to cultural resources are primarily associated with ground disturbance from construction-related activities. Changing water levels of a reservoir or lake could also impact a cultural resource by permanently submerging a resource or by repeatedly inundating and then exposing a resource (USBR 1997). Submerging a site would eliminate access to the site for future scientific study and could affect site integrity. Repeated inundations/exposures could lead to site erosion and could cause perishable artifacts to disintegrate more rapidly. Sites could also be more susceptible to looting if site erosion led to the exposure of more artifacts or fossils on the ground surface. Such actions could compromise the integrity of a cultural resource.

3.5.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities; nor would it change the operating criteria of these facilities. The proposed transfer would result in a slight increase in the amount of water transported in the California Aqueduct from Kern County to Castaic Lake, but this would not affect cultural resources. As described in section 3.0, minor seasonal changes in the volume of water stored in San Luis Reservoir would result from Project implementation. The average volume of water stored would decrease slightly from December through June, potentially exposing more submerged cultural resources during this period, but the change would be minor and the resulting elevations would fall within the range of fluctuations present under both current and historic operations. The impact would be less than significant. The amount of water stored in Castaic Lake would not change as a result of the Project; thus, no impacts to cultural resources would occur.

Since no construction or substantive operational changes would occur, the Project would not cause a substantial adverse change in the significance of historical or archaeological resources, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains.

INDIRECT IMPACTS

No indirect impacts to cultural resources would occur.

3.5.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing WRMWSD facilities, nor would it change the current operation of these facilities. Since no construction or substantive operational changes would occur, the Project would not cause a substantial adverse change in the significance of historical or archaeological resources, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains.

INDIRECT IMPACTS

No indirect impacts to cultural resources would occur.

3.5.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

Implementation of the Project would not require the construction of new CLWA facilities or modification of existing facilities. Since no construction or operational changes would occur, the Project would not cause a substantial adverse change in the significance of historical or archaeological resources, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains.

INDIRECT IMPACTS

Potential environmental impacts from growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.5.3 Mitigation Measures

3.5.3.1 *State Water Project and Associated Facilities*

No direct or indirect significant impacts to cultural resources would occur; therefore, no mitigation measures are required.

3.5.3.2 *Wheeler Ridge-Maricopa Water Storage District*

No direct or indirect significant impacts to cultural resources would occur; therefore, no mitigation measures are required.

3.5.3.3 *Castaic Lake Water Agency*

No direct significant impacts to cultural resources would occur; therefore, no mitigation measures are required. Mitigation measures for significant indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.5.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

3.6 GEOLOGY, SOILS AND MINERAL RESOURCES

3.6.1 Environmental Setting

3.6.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. The portion of the SWP and associated facilities that would potentially be affected by implementation of the Project extends from the South Delta region near the confluence of the San Joaquin and Sacramento rivers to the terminus of the West Branch at Castaic Lake. In order from north to south, the SWP facilities traverse the relatively flat terrain of the western San Joaquin Valley, the Tehachapi Mountain Range, and the Santa Clarita Valley. The environmental setting of the southern San Joaquin and Santa Clarita valleys are described in detail in sections 3.6.1.2 and 3.6.1.3, respectively. This section describes the topography, soils, and geology of the north and central San Joaquin Valley and the Tehachapi Mountain Range.

Topography and Stratigraphy. The California Aqueduct conveys water along the western side of the San Joaquin Valley from the Delta down to Kern County. The alignment follows the land contours in the San Joaquin Valley where possible to minimize energy costs from pumping the water. The SWP facilities through the northern and central portion of the San Joaquin Valley traverse the contact between the Coast Range and Central Valley geologic provinces.

The landform types along the San Joaquin Valley alignment are basin rim/basin floor and terrace (CALFED 1999). Basin lands consist of poorly drained soils, and saline and alkali soils in the valley trough and on the basin rims (CALFED 1999). Soils at a moderate depth to bedrock (20-40 inches) occur in the northern part of the San Joaquin Valley where the annual rainfall is intermediate to moderately high (CALFED 1999). Soils less than 20 inches deep occur in the medium- to low-rainfall zone at lower elevations in the southern San Joaquin Valley (CALFED 1999). Soil salinity problems occur primarily in the western and southwestern portions of the San Joaquin Valley, in areas derived from the marine sediments of the Coast Ranges containing salts and trace elements such as arsenic, boron, molybdenum, and selenium (CALFED 1999).

From the southern San Joaquin Valley, water is pumped through a series of tunnels, pipelines, and canals through the Tehachapi Mountain. The highest peaks in the Techachapi Mountains are over 7,000 feet above mean sea level. The Techachapi Mountains consist of a basement complex of crystalline rocks (Hagan 2001).

Minerals. Numerous oil wells, groundwater wells and gravel mining operations are scattered throughout the regions traversed by or containing SWP facilities. Any mineral resources directly associated with SWP facilities would be under the jurisdiction of DWR or its designee.

Seismicity. Numerous earthquake fault systems lie within or traverse the San Joaquin River Region. The Coast Ranges and the western boundary of the San Joaquin Valley joins the Great Valley thrust fault system, which has a maximum credible earthquake (MCE) of 6.7 (CALFED 1999). To the west of the valley is the Diablo Range, which is mainly subject to seismicity from northwest-trending faults associated with the San Andreas Fault system (CALFED 1999). The

mapped active[1] faults of this system that are most likely to affect the upper watersheds west of the San Joaquin Valley are the Ortigalita Fault, and the Greenville-Marsh Creek Fault, which have MCEs of 7.0 and 7.25 respectively (Mualchin 1996).

3.6.1.2 *Wheeler Ridge-Maricopa Water Storage District*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP.

Topography and Stratigraphy. The district is located in southern Kern County, and extends southward onto Wheeler Ridge. Elevations range from 295 to 1,800 feet above mean sea level. The district is located within the Great Valley and Sierra Nevada batholith geologic provinces. This portion of the batholith is composed predominantly of Mesozoic-age granitic rock and overlying Miocene sediments. The San Andreas and Garlock fault systems are located south of the district, and the district and straddles the White Wolf fault. Sand and clay loams characterize the soils present in the district. Complexes composed of several soil combinations are also present. Many of these soils contain saline-sodic properties. Areas of major riverwashes also exist in the district.

Due to the relatively gentle slopes found in the district, erosion is generally related to agricultural practices, although most landowners within the district implement voluntary erosion control measures. Generally, the district does not contain extensive areas of expansive soils. Due to the gentle slopes found in the district and the deep groundwater levels, only a small portion of the district is subject to liquefaction, lateral spreading and landslides. Historically, groundwater overdraft has occurred in areas of the district (BE 1995); therefore, portions of the district may be subject to subsidence. Throughout the district, however, groundwater levels have either stabilized or have risen since the importation of SWP water (BE 1995), reducing the risk of subsidence.

Minerals. Portions of the district are, or have historically been, used for oil and gas exploration and production. In addition, active sand and gravel mining areas exist within the district.

Seismicity. Numerous earthquake faults have been identified in the vicinity of the district. The Pleito, Springs, and White Wolf faults traverse the district. The Pleito fault is capable of producing an MCE of 7.3 (Mark 1977), but no substantial historic earthquakes have been attributed to the Pleito fault. The Springs fault is estimated as being capable of producing an MCE of 6.75 (Greensfelder 1974). The White Wolf fault is estimated as being capable of producing an MCE of 7.75 (Greensfelder 1974). The White Wolf fault was the origin of the 1952 Arvin-Tehachapi earthquake, which had a magnitude of 7.7 on the Richter Scale. Other nearby active faults capable of producing earthquakes in WRMWSD include the Garlock and San Andreas faults, located approximately 8.5 miles south/southeast and 12 miles south/southwest, respectively. The Garlock fault is capable of producing an MCE of 7.75 and the San Andreas is capable of producing an MCE of 8.25 (Greensfelder 1974).

1 An active fault is defined as a fault that has shown displacement in the last 11,000 years (Holocene) and a potentially active fault is defined as showing evidence of displacement during the last 1.6 million years (Quaternary) (CDMG 1992).

3.6.1.3 *Castaic Lake Water Agency*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP.

Topography and Stratigraphy. The CLWA service area encompasses the relatively flat-lying Santa Clarita Valley and portions of the surrounding hills and mountains. The geology of the CLWA service area consists of a relatively thick sequence of Plio-Pleistocene Saugus Formation, locally overlain by more recent alluvial deposits. The Saugus Formation consists primarily of semi-consolidated conglomerate and sandstone materials, which reach a maximum thickness of approximately 7,000 feet (Slade 1988). Alluvial deposits consist of a maximum of 200 feet of unconsolidated gravel, sand, silt, and clay, which occur as relatively narrow strips underlying and adjacent to major stream channels (Slade 1988).

Soils within and adjacent to the CLWA service area typically consist of sandy silts and silty sands. The soil erosion potential is very high in many of the steep, mountainous regions of the CLWA service area. Although generally not prevalent, clay-rich soils within CLWA may be subject to expansion. Liquefaction is most likely to occur in areas of the CLWA service area that are saturated at very shallow depths, such as adjacent to the Santa Clara River (City of Santa Clarita 1991, CLWA 1988). Lateral spreading would most likely occur within CLWA along the banks of the Santa Clara River or its tributaries. Historically, groundwater overdraft has not occurred within the Alluvial and Saugus Formation aquifers of the Santa Clarita Valley, and regional ground subsidence has not occurred (CLWA 2001). Due to the rugged, high relief of the foothill and mountainous areas surrounding the Santa Clarita Valley, landslides and unstable slopes are present in many portions of the CLWA service area (City of Santa Clarita 1991).

Minerals. Portions of the CLWA service area historically have been used for oil and gas exploration and production. Oil fields in the area include the Newhall-Potrero, Placerita, Castaic Junction, Castaic Hills, Bouquet Canyon, Wayside Canyon, Tapia, and Honor Rancho fields (California Department of Conservation, Division of Oil, Gas and Geothermal Resources [DOGGR] 1998, 1999).

Much of the CLWA service area is classified as potential sand and gravel mineral resource areas. Most of the floodplain of the Santa Clara River drainage system is classified by the California Department of Mines and Geology (CDMG) as Zone MRZ-2, which is an area where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. This zone along the Santa Clara River also includes the major tributaries Castaic and Newhall creeks. The remainder of the tributaries, which contain substantial alluvial deposits, are classified as Zone MRZ-3, which are those areas containing mineral deposits, the significance of which cannot be evaluated from available data. The larger of these remaining tributary alluvial deposits that may be future sources of aggregate include San Francisquito, Bouquet, Mint, Upper Soledad, Oak Spring, Sand, Pico, and Hasley Canyons (CDMG 1987).

Tertiary sedimentary rocks in the CLWA service area are also considered alternative sources of aggregate. The Saugus Formation is classified as Zone MRZ-3. Although in many areas the

Saugus Formation contains an abundance of clayey silt, clayey sandstone, and sandy mudstone, many areas consist of relatively clean sandstone and conglomerate, which are suitable sources of aggregate (CDMG 1987).

Seismicity. Two faults, including the active San Gabriel fault, and the potentially active Holser fault, traverse the CLWA service area. The active San Andreas fault is located approximately 18 miles northeast of the central portion of the Santa Clarita Valley. The San Fernando and Sierra Madre faults are also located in the vicinity of the CLWA service area. The San Gabriel fault is capable of producing an MCE of 7.5 (Mark 1977). The Holser fault is estimated as being capable of producing an MCE of 7.25 (Slemmons 1977). The San Andreas fault is estimated as being capable of producing an MCE of 8.25 (Greensfelder 1974). The San Fernando and Sierra Madre faults are capable of producing an MCE of 6.7 (Slemmons 1977) and 7.5 (Greensfelder 1974) respectfully. Areas of potential liquefaction have been identified adjacent to the Santa Clara River. Soils in the area typically consist of sandy silts and silty sands.

3.6.2 Potential Impacts of the Project

3.6.2.1 Significance Criteria

The criteria listed below are based on Appendix G of the State CEQA Guidelines. The Project would have a significant impact on geology, soils, and mineral resources if it would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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;
  - strong seismic ground shaking;
  - seismic-related ground failure, including liquefaction;
  - landslides; or
- result in substantial soil erosion or the loss of topsoil; or
- involve construction 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; or
- be located on expansive soil, as defined in the Uniform Building Code, creating substantial risks to life or property; or
- result in the substantial loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the substantial loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 requires the State Geologist to delineate zones along active faults in California so that structural development can be regulated to reduce the risk to humans and structures associated with seismic activity. The act prohibits the construction of structures intended for human occupancy within these zones (occupancy rate of more than 2,000 person-hours per year), as well as requires local agencies to regulate certain developments.

3.6.2.2 *Environmental Impacts*

3.6.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities; nor would it change the operating criteria of these facilities. The Project would result in a slight increase in the amount of water transported in the California Aqueduct from Kern County to Castaic Lake, but this volume would be within the range that has been transported by the aqueduct both in recent years and historically. Slightly increasing the amount of water transported in the aqueduct would not affect geology, soils, or minerals. As described in section 3.0, minor seasonal changes in the volume of water stored in San Luis Reservoir would result from Project implementation. The average volume of water stored would decrease slightly from December through June, exposing more soil to wind and water erosion during this period, but the change would be minor and the resulting elevations would fall within the range of fluctuations present under both current and historic operations. This impact would be less than significant. Changes in the timing of water storage at this facility would not affect other geologic resources or minerals. The amount of water stored in Castaic Lake would not change as a result of the Project; thus, no erosional impacts would occur. Since no construction or substantive operational changes would occur, implementation of the Project would not expose people or structures to seismic hazards or other hazards involving construction on an unstable or potentially unstable unit or expansive soils. The Project would not result in soil erosion or loss of topsoil, nor would it result in the loss of mineral resources.

INDIRECT IMPACTS

No indirect impacts to geology, soils, or mineral resources would occur.

3.6.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing WRMWSD water distribution facilities, nor would it change the current operation of these facilities. Since no construction or operational changes would occur, implementation of the Project would not expose people or structures to seismic hazards or other hazards involving construction on an unstable or potentially unstable unit or expansive soils, result in substantial erosion or the loss of topsoil, nor would it result in the loss of mineral resources.

INDIRECT IMPACTS

No indirect impacts to geology, soils, or mineral resources would occur.

3.6.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

Implementation of the Project would not require the construction of new CLWA facilities or modification of existing CLWA facilities. Transferring an additional 41,000 AF of water through existing facilities for use within the service area would not affect geology, soils, or minerals. Since no construction or operational changes would occur, implementation of the Project would not expose people or structures to seismic hazards or other hazards involving construction on an unstable or potentially unstable unit or expansive soils. The Project would not result in water erosion of soils or the loss of topsoil, nor would it result in the loss of mineral resources.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.6.3 Mitigation Measures

3.6.3.1 *State Water Project and Associated Facilities*

No direct or indirect significant impacts to geologic resources would occur; therefore, no mitigation measures are required.

3.6.3.2 *Wheeler Ridge-Maricopa Water Storage District*

No direct or indirect significant impacts to geologic resources would occur; therefore, no mitigation measures are required.

3.6.3.3 *Castaic Lake Water Agency*

No direct significant impacts to geologic resources would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.6.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

3.7 HAZARDS AND HAZARDOUS MATERIALS

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Chemical and physical properties cause a substance to be considered hazardous, including the properties of toxicity, ignitability, corrosivity and reactivity. These properties are defined in California Code of Regulations, Title 22, Sections 66261.20-66261.24. Common materials that are considered hazardous include fuels, motor oil, grease, various lubricants, solvents, soldering equipment and glues. A "hazardous waste" is any hazardous material that is discarded, abandoned, or recycled. The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25117).

3.7.1 Environmental Setting

3.7.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. Much of the area traversed by the California Aqueduct is used for agricultural purposes. Pesticides and fertilizers used for agricultural operations may accumulate in the soil and may over time contaminate surface water and groundwater supplies. Urban areas contain commercial and industrial facilities that may produce and/or use a wide variety of hazardous materials, including fuels and solvents. Fuels, chemicals, and other hazardous materials and hazardous wastes are also transported via roadways and railways in the vicinity of SWP facilities. A variety of fuels, solvents, and other hazardous materials are used as part of DWR's regular operations and maintenance of SWP facilities.

3.7.1.2 Wheeler Ridge-Maricopa Water Storage District

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. A substantial portion of the district is used for agricultural purposes. Pesticides and fertilizers used for agricultural operations may accumulate in the soil and may over time contaminate surface water and groundwater supplies. Industrial facilities and other entities in the district may use a wide variety of hazardous materials, including fuels and solvents. Fuels, chemicals, and other hazardous materials and hazardous wastes are also transported via roadways and railways.

3.7.1.3 Castaic Lake Water Agency

The CLWA service area is largely urbanized and has a variety of industries and commercial enterprises that likely use or produce hazardous materials and/or hazardous wastes. Fuels, chemicals, and other hazardous materials and hazardous wastes are also transported via roadways and railways. Numerous hazardous materials/waste sites are present in the CLWA service area. Since 1998, continued growth and development in the area have increased the amount of hazardous materials and/or hazardous wastes that are produced and transported around the region. The CLWA service area contains mountainous areas that are classified as high fire hazard areas.

3.7.2 Potential Impacts of the Project

3.7.2.1 *Significance Criteria*

The criteria listed below are based on Appendix G of the State CEQA Guidelines. The Project would result in significant impacts if it would:

- create a significant hazard to the public or the environment through the routine transport, storage, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environmental through reasonably foreseeable upset and accident involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included in a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result could create a significant hazard to the public or the environment;
- be 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, and result in a safety hazard for people residing or working in the project area;
- be located with the vicinity of a private airstrip, and result in a safety hazard for people residing or working in the project area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.7.2.2 *Environmental Impacts*

3.7.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities; nor would it change the operating criteria of these facilities or substantially change their operation. The Project would result in a slight increase in the amount of water transported in the California Aqueduct from Kern County to Castaic Lake, but this volume would be within the range that has been transported by the aqueduct both in recent years and historically and would not increase safety risks. Slightly increasing the amount of water transported in a portion of the SWP system would require more pumping, which would incrementally increase the use of hazardous materials associated with pumping. This impact would be less than significant since these materials already are used for operations and

maintenance in accordance with established practices and the incremental increase in their use would not result in a significant hazard to the public or the environment.

As described in section 3.0, minor seasonal changes in the volume of water temporarily stored in San Luis Reservoir would result from Project implementation. The average volume of water stored would decrease slightly from December through June, but the change would be minor and the resulting elevations would fall within the range of fluctuations present under both current and historic operations. This change in the timing of water storage would not constitute a hazard. The amount of water stored in Castaic Lake would not change as a result of the Project; thus, no impacts to hazards or hazardous materials would occur.

No elements of the Project would emit hazardous emissions within one-quarter mile of an existing or proposed school, and no actions would occur that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan or expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

INDIRECT IMPACTS

No indirect impacts would occur.

3.7.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

The Project would not involve construction or operational changes that could require the use of hazardous materials or otherwise increase hazards in the district. The Project would not require the routine transport, storage, use, or disposal of additional hazardous materials in this district and thus could not increase the frequency or severity of the release of hazardous materials into the environment or emit hazardous emissions. No other actions would occur that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan or expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

INDIRECT IMPACTS

No indirect impacts would occur.

3.7.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

No construction would occur that potentially could emit hazardous emissions. No other actions would occur that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan or expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

The use of up to 41,000 AF of water within the CLWA service area would result in an increased use of hazardous materials to treat water. The primary hazardous chemicals used in the treatment of water at the CLWA facilities are ferric chloride, sodium hydroxide, chlorine, and

aluminum sulfate. Any additional use of hazardous materials to treat the water would be conducted in accordance with existing policies, procedures, and regulations to prevent upset or release into the environment. Thus, impacts from the incremental increase in use of hazardous materials to treat water would be less than significant.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.7.3 Mitigation Measures

3.7.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to hazards or hazardous materials would occur; therefore, no mitigation measures are required.

3.7.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to hazards or hazardous materials would occur; therefore, no mitigation measures are required.

3.7.3.3 Castaic Lake Water Agency

No direct significant impacts to hazards or hazardous materials would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.7.4 Significant Unavoidable Adverse Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

3.8 LAND USE AND PLANNING

3.8.1 Environmental Setting

3.8.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. SWP facilities such as the California Aqueduct and pumping and generation facilities are under the jurisdiction of DWR or its designee. The San Luis Reservoir State Recreation Area is under the jurisdiction of the State Department of Parks and Recreation. The Castaic Lake State Recreation Area is under the jurisdiction of the Los Angeles County Department of Parks and Recreation. Each of these agencies regulates development on lands within their jurisdiction.

3.8.1.2 Wheeler Ridge-Maricopa Water Storage District

WRMWSD is located within Kern County, which has land use and planning authority in the unincorporated portions of the County, including this district. The Kern County General Plan regulates the type and intensity of land uses and specifies other development-related requirements. It consists of seven state-mandated and three optional elements and also includes rural community plans and specific plans for smaller geographic areas within the county. Kern County has adopted an HCP for the Metropolitan Bakersfield Area and is in the process of developing the KCVFHCP for additional portions of the county in order to provide a long-term program designed to conserve federally protected species, state-protected species, and/or other species of concern. In addition, the TRVFHCP is being developed for the Tejon Ranch lands within the San Joaquin Valley, some of which are within the WRMWSD. There are no adopted NCCPs within Kern County.

At the time the 1998 NOP was prepared, WRMWSD contained approximately 146,620 acres. Land uses included the following: farmed area (94,500 acres, or 64 percent); fallow lands (17,650 acres, or 12 percent); miscellaneous and other lands, defined as developed but nonfarmed areas within cultivated lands, such as farm roads, farmsteads, reservoirs, airstrips, cotton gins, tank farms, utility yards, etc. (8,040 acres, or 5 percent); and native vegetation/non-developed lands (26,430 acres, or 18 percent) (WRMWSD 2001).

In 2000, the most recent year for which information is available, the district contained approximately 146,950 acres. Land uses included the following: farmed area (90,630 acres, or 62 percent); fallow lands (21,660 acres, or 15 percent); miscellaneous lands, defined as developed but nonfarmed areas within cultivated lands, such as farm roads, farmsteads, and reservoirs (6,865 acres, or 5 percent); other lands, consisting of airstrips, cotton gins, tank farms, utility yards, etc. (1,360 acres, or 1 percent) and native vegetation/non-developed lands (26,435 acres, or 18 percent) (WRMWSD 2001). Additional detail regarding changes in agricultural land uses between 1998 and 2000 is included in section 3.2.

3.8.1.3 *Castaic Lake Water Agency*

The CLWA service area is located primarily in the Santa Clarita Valley in northwestern Los Angeles County and also in eastern Ventura County. Plans and policies of local and regional agencies with planning authority in the CLWA service area include those adopted by the Southern California Association of Governments (SCAG), County of Los Angeles, County of Ventura (for the Piru Planning Area portion of the county), and the City of Santa Clarita. The relevant plans include SCAG's Regional Comprehensive Plan and Guide, the Santa Clarita Valley Area Plan of the County of Los Angeles General Plan, the County of Ventura General Plan, and the City of Santa Clarita General Plan. Consistency with adopted plans and policies is discussed in Chapter 5.0, Plans and Policies. Additionally, the City of Santa Clarita and Los Angeles County have initiated a joint planning effort to address future growth in the Santa Clarita Valley. Phase I of the Santa Clarita Valley Joint General Plan was completed in 2001, including securing Regional Planning Commission and City Council approval of the Guiding Principles and Vision.

CLWA makes decisions related to the wholesale and retail (within defined boundaries) provision of water and does not have the authority to approve land development within its service area. Rather, such approvals are the responsibility of the local planning agencies identified above. CLWA's role is limited to complying with laws that went into effect on January 2002 and require retail water purveyors to provide information regarding the availability of water supplies to land use planning agencies. Senate Bills 610 and 221 amended state law in an attempt to improve the link between information on water supply availability and certain land use decisions made by cities and counties. Both statutes require detailed information to be provided to city and county decision-makers prior to the approval of specified large development projects.

Land uses in the service area range from the urbanized environment of the City of Santa Clarita and other developed communities to the undeveloped environment of the eastern Santa Susana and western San Gabriel Mountains. As shown in Table 3.8-1, in 1998 when the first NOP was prepared for the Project, approximately 30,000 acres of land within the CLWA service area were improved, and approximately 88,000 acres were unimproved (CLWA 1998b). Of the 30,000 acres of improved land, almost half were classified in one of the six urban and non-urban residential categories. Another substantial portion of the service area is designated as Hillside Management. Lands with this designation are located in non-urban areas that typically exceed a 25 percent slope. Depending upon the degree of slope, maximum residential densities are specified, up to one unit per 2 acres. As shown on Table 3.2-5, the amount of Urban and Built-Up Land in the CLWA service area increased by 1,731 acres between 1998 and 2000[1], while the amount of agricultural and "other" land decreased by the same amount ("other land" refers to such land uses as low-density rural development, brush, timber, vacant and nonagricultural land larger than 40 acres in size and surrounded on all sides by urban development, and a variety of other rural land uses).

1 2000 is used instead of 2003 because 2000 was the most recent census. This census yielded the most available data.

3.8.2 Potential Impacts of the Project

3.8.2.1 *Significance Criteria*

The criteria used to determine the significance of impacts to land use and planning are based on Appendix G of the State CEQA Guidelines. The Project would result in a significant impact if it would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable HCP or NCCP.

Table 3.8-1. CLWA Service Area 1998 Land Use

Plan Code Designation/ Land Use Category		IMPROVED PARCELS		UNIMPROVED PARCELS		*Total*
		Acres	*Percent*	*Acres*	*Percent*	*Acres*
C	Commercial	1,564	1.3	1,558	1.3	3,122
HM	Hillside Management	6,057	5.1	33,614	28.4	39,671
M	Industrial	2,349	2.0	3,246	2.7	5,595
MU	Municipal	407	0.3	72	0.1	479
N1	Non-Urban Residential (0.5 DU/Ac)	2,812	2.4	4,810	4.1	7,622
N2	Non-Urban Residential (1.0 DU/Ac)	706	0.6	2,314	2.0	3,020
NF	National Forest	647	0.5	8,442	7.1	9,089
O	Open Space & Agriculture	880	0.7	12,069	10.2	12,949
P	Public Service Facilities	89	0.1	2,763	2.3	2,852
PF	Public Service Facilities	0	0.0	32	0.0	32
RR	Resort Recreation	518	0.4	74	0.1	592
TC	Transportation Corridor	0	0.0	49	0.0	49
U1	Urban Residential (1.1-3.3 DU/Ac)	8,682	7.3	8,389	7.1	17,071
U2	Urban Residential (3.4-6.6 DU/Ac)	1,064	0.9	1,692	1.4	2,756
U3	Urban Residential (6.7-15.0 DU/Ac)	68	0.1	405	0.3	473
U4	Urban Residential (15.1-40.0 DU/Ac)	252	0.2	186	0.2	438
VC	Floodway/Floodplain	2,365	2.0	6,121	5.2	8,486
W	Undefined	1,596	1.4	2,305	2.0	3,901
	TOTAL	30,056	25.3	88,141	74.5	118,197

Source: CLWA 1998b.
Note: DU/Ac = dwelling units per acre
Percentages total slightly less than 100 due to rounding.

3.8.2.2 *Environmental Impacts*

3.8.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities; nor would it change the operating criteria of these facilities or substantially change their operation. Since no construction would occur, the Project would not physically divide an established community. As discussed in the other sections of Chapter 3 and in Chapter 5, the Project would not result in significant environmental effects associated with SWP facilities and thus would not conflict with an applicable land use plan, policy, or regulation of any agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect, nor would it conflict with any applicable HCP or NCCP.

INDIRECT IMPACTS

No indirect impacts to land use and planning would occur.

3.8.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing facilities. Since no construction would occur, the Project would not physically divide an established community. As discussed in the other sections of Chapter 3 and in Chapter 5, the Project would not result in significant environmental effects in the district and thus would not conflict with an applicable land use plan, policy, or regulation of any agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect, nor would it conflict with any applicable HCP or NCCP.

INDIRECT IMPACTS

No indirect impacts to land use and planning would occur.

3.8.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing facilities. Since no construction would occur, the Project would not physically divide an established community. As discussed in the other sections of Chapter 3 and in Chapter 5, the Project would not result in significant environmental effects in the CLWA service area and thus would not conflict with an applicable land use plan, policy, or regulation of any agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect, nor would it conflict with any applicable HCP or NCCP.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.8.3 Mitigation Measures

3.8.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to land use and planning would occur; therefore no mitigation measures are required.

3.8.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to land use and planning would occur; therefore no mitigation measures are required.

3.8.3.3 Castaic Lake Water Agency

No direct significant impacts to land use and planning would occur; therefore no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.8.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

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3.9 NOISE

Sources of stationary or transient noise can be characterized as unwanted sound that could disrupt normal activities or diminish the quality of the environment. Stationary sources are generally localized, while transient or mobile sources can occur irregularly. The noise generated combines with the ambient sounds to produce the local acoustical environment. The response to noise can be quite varied depending on the noise source, the sensitivity of the receptor and the time of day in which it occurs.

Several noise measurement scales are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a ten-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. There are several methods of characterizing sound. The most common in California is the A-weighted sound level, or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

Since the sensitivity to noise increases during the evening and at night—because excessive noise interferes with the ability to sleep—24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 P.M. to 10:00 P.M.) and a 10 dB addition to nocturnal (10:00 P.M. to 7:00 A.M.) noise levels. The Day/Night Average Sound Level, L_{dn}, is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this 3-hour period are grouped into the daytime period.

Noise-sensitive receptors include residential areas, facilities such as schools and hospitals, and certain types of recreational uses where a quiet setting is considered to be an integral part of the recreational experience.

Representative outdoor and indoor noise levels in units of dBA are shown in Table 3.9-1.

1

Table 3.9-1. Typical Sound Levels Measured in the Environment and Industry

At a Given Distance From Noise Source	*dBA*	*Noise Environments*	*Subjective Impression*
	140		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110	Rock Music Concert	
Diesel Pile Driver (100')	100		Very Loud
	90	Boiler Room	
Freight Cars (50')		Printing Press Plant	
Pneumatic Drill (50')	80		
Freeway (100')		In Kitchen with Garbage Disposal Running	
Vacuum Cleaner (10')	70		Moderately Loud
		Data Processing Center	
	60		
		Department Store	
Light Traffic (100')	50		
Large Transformer (200')			
	40	Private Business Office	Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing
	0		

Source: U.S. Department of Housing and Urban Development. 1985

2 ## 3.9.1 Environmental Setting

3 ### *3.9.1.1 State Water Project and Associated Facilities*

4 No substantial changes in baseline conditions have occurred between the 1998 NOP and the
5 2003 NOP. Noise within the rural portions of the San Joaquin Valley, where many of the SWP
6 facilities affected by the Project are located, primarily results from agricultural activities (e.g.,
7 the operation of farming equipment and pumps) and vehicular traffic. In urban areas, noise

primarily results from vehicular traffic and activities commonly associated with residential, commercial, industrial, and recreational uses. Along the California Aqueduct, noise levels vary considerably, depending largely on its proximity to heavily traveled roadways such as Interstate 5. Pumps are the primary source of noise caused directly by operation of the SWP facilities. At San Luis Reservoir and Castaic Lake, noise results mainly from recreational activities. Noise standards are typically developed by local jurisdictions. The State of California has not adopted any quantitative noise regulations; however, the State Department of Health Services, Environmental Health Division has established noise compatibility guidelines for different land use types (California Department of Health Services [CA DHS] 1976). For example, an L_{dn} or CNEL of 50 to 75 dB is considered normally acceptable at areas used for water recreation; 70 to 80 dB is normally unacceptable and above 80 dB is clearly unacceptable.

3.9.1.2 *Wheeler Ridge-Maricopa Water Storage District*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. Noise within the WRMWSD is primarily related to agricultural activities and vehicular traffic, although noise also is generated by activities commonly associated with residential, commercial, industrial, and recreational uses.

The Noise Element of the Kern County General Plan (1989) contains standards for noise control in unincorporated portions of the county. Kern County also has adopted a noise control ordinance as a provision of its Health and Safety Code, Subsection 8.36 Noise Control; however, this ordinance has very limited provisions and primarily addresses noise from amplification. The Kern County Noise Element divides land uses into four categories according to noise sensitivity: insensitive land uses; moderately sensitive land uses; sensitive land uses; and highly sensitive land uses. Different numerical noise quality standards apply to each of the four sensitivity categories, and corrections are applied if a "noise operation" or activity would produce noise that is not smooth and continuous.

3.9.1.3 *Castaic Lake Water Agency*

The CLWA service area includes developed urban areas, primarily within the City of Santa Clarita and adjacent unincorporated portions of Los Angeles County, as well as lower density residential or rural/agricultural areas, including portions of eastern Ventura County. The Southern Pacific Railroad, Interstate 5, State Route 14 and Highway 126 traverse the Santa Clarita Valley and are major sources of noise. Noise also is generated by activities commonly associated with residential, commercial, industrial, and recreational uses. Ambient noise levels likely have increased in some portions of the service area since development has increased between 1998 and the present.

The Noise Element of the County of Los Angeles General Plan establishes noise-related goals and policies. In addition, the county has adopted a Noise Control Ordinance (County Code Title 12.08 Noise Control (Ord. 11778 Section 2 (Art. 1 Section 101), 1978: Ord. 11773 Section 2 (Art. 1 Section 101), 1978.) and Title 12.12 Building Construction Noise) that identifies exterior noise standards for various land use categories as identified in Table 3.9-2.

County of Los Angeles Noise Ordinance also restricts noise generated by construction activities at noise sensitive land uses. Additionally, all mobile and stationary internal-combustion

powered equipment and machinery is required to be equipped with suitable exhaust and air-intake silencers in proper working order. These regulations are summarized below in Table 3.9-3.

The Noise Element of the City of Santa Clarita's General Plan contains noise-related goals and policies, and the City's Noise Ordinance establishes noise thresholds for specific land uses. The allowable noise levels in residential areas are 65 dBA during the daytime and 55 dBA during the nighttime. In commercial and manufacturing areas, up to 80 dBA is allowed during the daytime and 70 dBA is allowed during the nighttime. Construction work is limited to the hours between 7 A.M. and 7 P.M. Monday through Friday and between 8 A.M. and 6 P.M. on Saturday. Construction is prohibited on Sundays and six holidays.

Table 3.9-2. County of Los Angeles Exterior Noise Standards for Stationary and Point Noise Sources

Noise Zone	*Land Use*	*Time Interval*	*Exterior Noise Level dBA L_{eq}[1]*
I	Noise Sensitive Area[2]	Anytime	45
II	Residential	10:00 P.M. to 7:00 A.M. 7:00 A.M. to 10:00 P.M.	45 50
III	Commercial	10:00 P.M. to 7:00 A.M. 7:00 A.M. to 10:00 P.M.	55 60
IV	Industrial	Anytime	70

Source: County of Los Angeles Ordinance No. 11743, Section 12.08.390.

1. ***Standard No. 1*** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No.1 shall be the applicable noise level; or, if the ambient L_{50} exceeds the foregoing level, then the ambient L_{50} becomes the exterior noise level Standard No. 1.

   Standard No. 2 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No.2 shall be the applicable noise level from Standard No. 1 plus 5.0 dB(A);or, if the ambient L_{25} exceeds the foregoing level, then the ambient L_{25} becomes the exterior noise level Standard No.2

   Standard No. 3 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 5 minutes in any hour. Standard No.3 shall be the applicable noise level from Standard No. 1 plus 10.0 dB(A);or, if the ambient $L_{8.3}$ exceeds the foregoing level, then the ambient $L_{8.3}$ becomes the exterior noise level Standard No. 3.

   Standard No. 4 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 1 minute in any hour. Standard No.3 shall be the applicable noise level from Standard No. 1 plus 15.0 dB(A);or, if the ambient $L_{1.7}$ exceeds the foregoing level, then the ambient $L_{1.7}$ becomes the exterior noise level Standard No. 4.

   Standard No. 5 shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 4 shall be the applicable noise level from Standard 1 plus 20 dB(A); or, if the ambient L_0 exceeds the forgoing level, then the ambient L_0 becomes the exterior noise level for Standard No. 4.

2. Not defined in the County Noise Ordinance; to be designated by the County Health Officer.

Both the Ventura County General Plan and the Area Plan for the Piru Area contain goals and policies relating to noise. The General Plan, which also applies to the Piru Area, states that noise generators proposed to be located near any noise sensitive receptor shall incorporate noise control measures so that the outdoor noise levels at the receptor do not exceed:

- An hourly Leq of 55 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 6:00 A.M. to 7:00 P.M.
- An hourly Leq of 50 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 7:00 P.M. to 10:00 P.M.
- An hourly Leq of 45 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 10 P.M. to 6 A.M.

Table 3.9-3. Mobile Construction Equipment Noise Limits

	Mobile Construction Equipment Maximum Noise Levels (Leq)		*Stationary Construction Equipment Maximum Noise Levels (Leq)*	
LAND USE	DAYTIME	NIGHTTIME	DAYTIME	NIGHTTIME
Residential	75 dBA	60 dBA	60 dBA	50 dBA
Multi-family residential	80 dBA	65 dBA	65 dBA	55 dBA
Residential / commercial	85 dBA	70 dBA	70 dBA	60 dBA

Note: Daytime: 7 A.M. to 8 P.M., excluding Sundays and holidays; nighttime: 8 P.M. to 7 A.M. daily and all day on Sundays and holidays.

3.9.2 Potential Impacts of the Project

3.9.2.1 Significance Criteria

The significance criteria are based on Appendix G of the State CEQA Guidelines. The Project would result in a significant impact if it would:

- expose persons to or generate noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies;
- expose persons to or generate excessive ground-borne vibration or ground-borne noise levels;
- cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- for a project located within an airport land use plan or, where such a plant has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

3.9.2.2 *Environmental Impacts*

3.9.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

The Project would not involve construction or significant operational changes that could generate noise or vibration or increase current noise levels associated with the SWP and related activities. While increased pumping could result from the Project, no new pumps would be required. The existing pumps are housed in concrete structures and generally are located in rural areas; thus, increased pumping would not expose persons to or generate noise levels in excess of established standards, generate or expose persons to excessive ground-borne vibration or ground-borne noise levels, cause a substantial permanent, temporary, or periodic increase in ambient noise levels in the Project vicinity, or expose people residing or working in the Project area to excessive noise levels.

INDIRECT IMPACTS

No indirect noise impacts would occur.

3.9.2.2.2 *Wheeler Ridge-Maricopa Water Storage District*

DIRECT IMPACTS

The Project would not involve construction or operational changes that could generate noise or vibration or increase current noise levels in the district. The Project would not expose persons to or generate noise levels in excess of established standards, generate or expose persons to excessive ground-borne vibration or ground-borne noise levels, cause a substantial permanent, temporary, or periodic increase in ambient noise levels in the Project vicinity, or expose people residing or working in the Project area to excessive noise levels.

INDIRECT IMPACTS

No indirect noise impacts would occur.

3.9.2.2.3 *Castaic Lake Water Agency*

DIRECT IMPACTS

The Project would not involve construction or operational changes that could generate noise or vibration or increase current noise levels. Thus, the Project would not expose persons to or generate noise levels in excess of established standards, generate or expose persons to excessive ground-borne vibration or ground-borne noise levels, cause a substantial permanent, temporary, or periodic increase in ambient noise levels in the Project vicinity, or expose people residing or working in the Project area to excessive noise levels.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.9.3 Mitigation Measures

3.9.3.1 State Water Project and Associated Facilities

No direct or indirect significant noise impacts would occur; therefore, no mitigation measures are required.

3.9.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant noise impacts would occur; therefore, no mitigation measures are required.

3.9.3.3 Castaic Lake Water Agency

No direct significant noise impacts would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.9.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

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3.10 POPULATION AND HOUSING

3.10.1 Environmental Setting

3.10.1.1 State Water Project and Associated Facilities

Population and housing are not directly associated with the SWP, although the SWP is a water storage and delivery system that serves a large portion of California's population.

3.10.1.2 Wheeler Ridge-Maricopa Water Storage District

Based on U.S. Census Bureau data[1], between 1990 and 2000, the population within the district increased from 2,480 to 2,854, or by approximately 15 percent. The number of households also increased during this period from 728 households in 1990 to 857 households in 2000, or by approximately 18 percent.

3.10.1.3 Castaic Lake Water Agency

Based on U.S. Census Bureau data, the population in the CLWA service area in 2000 was approximately 190,000[2]. (This is the most recent data available. The next census will not be taken until 2010.) About 80 percent of the CLWA service area population resides in the City of Santa Clarita, whose population increased by about 36 percent between 1990 and 2000, from 110,642 to 151,088. Within the City of Santa Clarita, the 2000 Census reported 50,787 occupied housing units, a 12,313-unit increase since 1990. Based on 2000 Census data, about three persons occupy each housing unit. Assuming the same persons per occupied housing unit, there would be about 63,300 occupied housing units in the CLWA service area.

3.10.2 Potential Impacts of the Project

3.10.2.1 Significance Criteria

The criteria used to determine the significance of impacts related to population and housing are based on Appendix G of the State CEQA Guidelines. The Project would result in significant impacts it if would:

- induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure);
- displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

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1. Using GIS, the census blocks and tracts that were fully or partially within the WRMWSD were determined. If a block was partially within the district, the percentage of the area within the district was multiplied by the block census counts. U.S. Census data is the most current information available for population and housing.
2. Using GIS, the census blocks and tracts that were fully or partially within the CLWA service area were determined. If a block was partially within the service area, the percent of the area within the service area was multiplied by the block census counts.

- displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.10.2.2 Environmental Impacts

3.10.2.2.1 State Water Project and Associated Facilities

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP facilities. The use of existing SWP facilities to transport water associated with the Project would not require the creation of new homes or businesses or otherwise directly induce population growth.

INDIRECT IMPACTS

The Project would not result in changes in employment or new business opportunities associated with the SWP, nor would it extend infrastructure. No indirect impacts to population and housing would occur.

3.10.2.2.2 Wheeler Ridge-Maricopa Water Storage District

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing WRMWSD water distribution facilities. The Project would not require the creation of new homes or businesses or otherwise directly induce population growth.

INDIRECT IMPACTS

The Project would not result in changes in employment or new business opportunities in WRMWSD, nor would it extend infrastructure. No indirect impacts to population and housing would occur.

3.10.2.2.3 Castaic Lake Water Agency

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing CLWA facilities. The Project would not require the creation of new homes or businesses or otherwise directly induce population growth.

INDIRECT IMPACTS

The Project would remove an obstacle to population growth by providing additional SWP water within the CLWA service area. Because it would remove such an obstacle, the Project may indirectly foster economic or population growth or the construction of additional housing within the CLWA service area. Assumptions regarding the population that could be served by the Project are described in section 3.0. Given an average year water supply, it is expected that

the Project would be able to serve a population of approximately 106,700 persons and could serve about 35,600 housing units (see Chapter 4, Growth-Inducing Effects and Growth-Related Impacts). Specific potential impacts from population and housing growth that could occur as an indirect impact of the Project are addressed for each resource in Chapter 4. With the exception of aesthetics, air quality, biological resources, transportation and circulation, and utilities and service systems, all indirect, growth-related impacts would be mitigable to less than significant.

3.10.3 Mitigation Measures

3.10.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to population and housing would occur; therefore, no mitigation measures are required.

3.10.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to population and housing would occur; therefore, no mitigation measures are required.

3.10.3.3 Castaic Lake Water Agency

No direct significant impacts to population and housing would occur; therefore, no mitigation measures are required for direct impacts. Mitigation measures for indirect impacts associated with Project-induced population and housing growth are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts (section 4.2.10, Population and Housing).

3.10.4 Significant Unavoidable Impacts

No significant unavoidable direct impacts would result from the Project. Significant and unavoidable indirect impacts to aesthetics, air quality, biological resources, transportation and circulation, and utilities and service systems may result from Project-induced population and housing growth.

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3.11 PUBLIC SERVICES

Public services addressed in this section include police protection, fire protection, schools, and libraries. Parks and other recreational facilities are discussed in section 3.12, Recreation Resources.

3.11.1 Environmental Setting

3.11.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. The SWP facilities traverse California between the Delta and southern California. Public services are provided by either by the State of California or local jurisdictions, depending on the location of individual facilities. The California Highway Patrol (CHP) has the primary authority for the major roadways accessing or adjacent to SWP facilities with support from individual county sheriff departments and local police departments. Fire protection is provided by the California Department of Forestry and by county, city, and special district fire departments. Since the SWP is a water storage and delivery system, it does not generate a demand for schools or library services.

3.11.1.2 Wheeler Ridge-Maricopa Water Storage District

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. Population increased modestly during this period (the entire increase between 1998 and 2000 was less than 400 persons); thus, the demand for public services likely increased as well.

Police Protection

The CHP provides services along the major highways of Kern County. Unit response stations for the CHP are located in Bakersfield, Taft, and Lebec. The Kern County Sheriff's Department provides police protection for the unincorporated areas of the county, including the district. The Kern County Sheriff's Department also is under contract to provide police protection to several cities within the county. Currently, the Sheriff's Department has one main station and 14 sub-stations throughout the county. These are staffed by approximately 1,050 employees, of which approximately 450 are sworn peace offices (Kern County Sheriff's Department 2002).

Fire Protection

Fire protection in the unincorporated portions of Kern County, including the district, is provided by the Kern County Fire Department, which operates 45 full time stations and one seasonal station throughout the county (Kern County Fire Department 2001).

Education

Kern County has 35 elementary school districts, four high school districts, and two community college districts (Kern County Superintendent of Schools 2002). No schools are present within the district.

Library Services

Kern County operates one main library and 24 branch libraries throughout the county. No libraries are present within the district.

3.11.1.3 Castaic Lake Water Agency

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP, except as noted below under Education and Library Services. Population increased during this period; thus, the demand for public services likely increased as well.

Police Protection

The Los Angeles County Sheriff's Department provides law enforcement services via contract to the unincorporated areas of Los Angeles County and the City of Santa Clarita. Over 140 deputy sheriffs currently staff the Santa Clarita Sheriff's Station. With a planning standard of one deputy per 1,000 residents, the current ratio is well within the planning range (Santa Clarita Valley Sheriff's Station 2002). The station includes a jail with beds for eight females and 31 males and also is equipped with a Helicopter, K-9 unit, Search and Rescue team, Mobile Command Post, and Detective Unit. The Sheriff's Department provides traffic services within the limits of the City of Santa Clarita, while the CHP provides service to the unincorporated portions of the CLWA service area.

The Ventura County Sheriff's Department is the law enforcement provider for Ventura County, including five of the county's ten incorporated cities (Thousand Oaks, Camarillo, Moorpark, Fillmore, and Ojai), plus the unincorporated areas of the county.

Fire Protection

The Consolidated Fire Protection District (Los Angeles County Fire Department, Battalion 6) provides fire protection services in the Santa Clarita Valley, both in the unincorporated portions of Los Angeles County and the City of Santa Clarita. Battalion 6 has a total of ten stations; eight are in the Santa Clarita Valley and two are in Gorman and Chatsworth (personal communication, L. Bagwell 2004). The eight stations located in the Santa Clarita Valley maintain nine engines, one truck, three paramedic squad cars, one water tender, and one helicopter with a paramedic team. Additional resources and staff are utilized for emergency back-up situations or as needed according to fire hazard levels throughout the year. The County Fire Department has planned for 11 more fire stations in the City of Santa Clarita by 2007 or 2008 (personal communication, L. Bagwell 2004), but the timing of these stations depends on the pace of development since developer fees fund new station construction (personal communication, D. Aguirre 2004. Angeles National Forest personnel provide wildland fire protection services to the Santa Clarita Valley and vicinity.

Fire protection services within the portion of the CLWA service area that is in Ventura County are provided by Ventura County Fire Department Station No. 28, which is located in Piru. Back-up fire protection is provided by both the Ventura County Fire Department, Los Angeles County Fire Department and in cases of wildland fire, Los Padres National Forest personnel.

Education

The Santa Clarita Valley has five school districts serving grades K-12. Based on conversations with school officials (as noted in Table 3.11-1), all school districts are at capacity or are experiencing overcrowding. Table 3.11-1 provides a list of school districts and enrollments within the area. No schools are located in the portion of the CLWA service area that is in Ventura County.

Table 3.11-1. School Districts in the CLWA Service Area

School District	1998[1]			2002[2]		
	Number of Schools	Grades Served	Enrollment	Number of Schools	Grades Served	Enrollment
Castaic Union School District	2 elementary 1 junior high	K-8	2,120	2 elementary 1 middle school	K-8	3,398[3]
Newhall School District	7 elementary	K-6	5,946	7 elementary	K-6	6,547
Saugus Union School District	11 elementary	K-6	8,300	14 elementary	K-6	10,046
Sulphur Springs School District	7 elementary	K-6	4,810	8 elementary	K-6	5,466
William S. Hart Union High School District	4 junior high 4 high school 1 continuation school 4 alternative sites	7-12	13,500	4 junior high 6 high school 1 continuation school 4 alternative sites	7-12	18,622

Notes:
1. Personal communications with Pam Wellcome, Castaic Union School; Dr. Herbert D. Bartelt Jr., Newhall School District; Sandy Kuhlman, Saugus School District; Carol Greenwood, Sulphur Springs School District; and Connie Ford, William S. Hart High School District, May 1998.
2. Personal communications with Kitty Belendez, Castaic Union School; Sue Malone, Newhall School District; Judy Fish, Saugus School District; Leslie Turner, Sulphur Springs School District; Rory Livingston, William S. Hart High School District, 2002.
3. A new elementary school within the district is expected to open September 2003 (Personal communication, Kitty Belendez).

Library Services

Three libraries operated by the County of Los Angeles Libraries Department serve the residents of the Santa Clarita Valley: the Canyon Country Library, the Newhall Library, and the Valencia Library (see Table 3.11-2). In 1998, the three libraries did not meet the planning standard of 1.7 square feet of library space per capita. The County Library currently uses a planning standard of two material items per capita and 0.389 gross square feet of space per capita. A recently completed service area analysis for the three Santa Clarita libraries (County of Los Angeles Public Library 2002), using 2000 population data, indicated that:

- The Valencia Library has an adequate materials collection and a facility space deficit of 13,737 square feet.

- The Newhall Library has an adequate materials collection and a facility space deficit of 7,776 square feet.
- The Canyon Country Library has a materials deficit of 62,229 and a facility space deficit of 15,419 square feet.

Table 3.11-2. Santa Clarita Valley Libraries

Library	1998[1]		2002[2]	
	Number of Books	*Size of Library (square feet)*	*Number of Books*	*Size of Library (square feet)*
Canyon Country Library	61,537	5,050	70,389	12,000
Newhall Library	54,401	4,842	63,126	4,842
Valencia Library	185,243	22,966	198,331	22,966

Notes: 1. Personal communications, S. Hampton and F. Hungerford, 1998.
2. Valencia Library, 2002; Newhall Library, 2002; Canyon Country Library, 2002.

Overall, there is currently a total deficit of 36,932 square feet in the combined service areas of these libraries.

With projected population growth for the Santa Clarita Valley by the year 2010 (Los Angeles County 1980), Santa Clarita libraries would need approximately 65,000 more square feet of space. Alternative funding sources for all libraries in the project area include Mello-Roos Community Facilities Districts, developer impact fees and agreements, and property taxes.

3.11.2 Potential Impacts of the Project

3.11.2.1 Significance Criteria

The significance criteria listed below are based on Appendix G of the State CEQA Guidelines. The Project would have a significant impact on public services if it would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; or
- result in the 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, and other public facilities.

3.11.3 Environmental Impacts

State Water Project and Associated Facilities

Direct Impacts

Since the Project would not require new construction or the modification of existing SWP facilities, it would not involve the provision of new or physically altered governmental facilities or result in the need for new or physically altered governmental facilities.

Indirect Impacts

No indirect impacts to public services would occur.

Wheeler Ridge-Maricopa Water Storage District

Direct Impacts

Transferring 41,000 AF of Table A Amount to CLWA would not require new construction or the modification of existing WRMWSD water distribution facilities, nor would it change the current operation of these facilities. Thus, the Project would not involve the provision of new or physically altered governmental facilities or result in the need for new or physically altered governmental facilities.

Indirect Impacts

No indirect impacts to public services would occur.

Castaic Lake Water Agency

Direct Impacts

The Project would not involve new construction, nor would it directly result in population growth. The use of existing facilities to transport an additional 41,000 AF of water would not require the provision of new or physically altered governmental facilities or result in the need for new or physically altered governmental facilities.

Indirect Impacts

Potential impacts to public services from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.11.4 Mitigation Measures

State Water Project and Associated Facilities

No direct or indirect significant impacts to public services would occur; therefore, no mitigation measures are required.

Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to public services would occur; therefore, no mitigation measures are required.

Castaic Lake Water Agency

No direct significant impacts to public services would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.11.5 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

3.12 RECREATION

Recreational resources consist of natural and manmade features or areas that are used, or could potentially be used, by the public for recreational purposes.

3.12.1 Environmental Setting

3.12.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP.

California Aqueduct

The California Aqueduct provides year-round recreational fishing opportunities, primarily for striped bass and catfish. The aqueduct contains eleven designated fishing areas within the San Joaquin Valley (DWR 2001c). Other recreational uses, such as boating and swimming, are not permitted.

San Luis Reservoir

The San Luis Reservoir complex includes the reservoir itself, the O'Neill Forebay and the Los Banos Detention Reservoir. The San Luis Reservoir is typically full in the spring and recedes throughout the summer and fall as water is used to meet the needs of both SWP and CVP contractors. San Luis Reservoir is surrounded by the San Luis Reservoir State Recreation Area, which is a popular recreation area used for boating, sailboarding, camping, picnicking, and fishing (DWR 2001b). The O'Neill Forebay receives the heaviest recreational use since it has a gentle shoreline and developed day use areas containing such amenities as lawns, beaches, and pit barbeques (DWR 2001b).

Castaic Lake

The Castaic Lake State Recreation Area, located at the northern end of the Santa Clarita Valley, is home to one of the largest SWP reservoirs in southern California. Castaic Lake's recreational facilities were built by DWR and the State Department of Parks and Recreation, but the 8,000-acre park is operated and maintained by the Los Angeles County Department of Parks and Recreation. The facility consists of two separate lakes—the main reservoir and the lagoon/afterbay. The main reservoir forms a V-shaped body of water with approximately 29 miles of shoreline. The east arm of the lake is open to boating, fishing and sailing, and a portion is open to water skiing and wakeboarding. The west arm is reserved for water-skiing and wakeboarding, with a special use area for all personal watercraft. Fishing in the west arm is allowed only in the coves. Ramps are provided on the east and west sides of the dam, and picnic facilities are located in both areas. The recreation area offers self-contained overnight camping on the lagoon/afterbay. Campgrounds containing 60 campsites are located on the east side and can accommodate travel trailers, campers, and RVs. Tent camping also is available on a limited basis. The campgrounds also include a picnic area and provide access to areas designated for boating, swimming (seasonal), and fishing.

3.12.1.2 *Wheeler Ridge-Maricopa Water Storage District*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. No recreational facilities are located within WRMWSD. Parks and/or recreational services within Kern County are under the jurisdiction of the county, eight recreation and park districts, other special districts, cities, school districts, the state and federal governments, and private organizations (Kern County 1994). Kern County provides both regional park facilities and local park facilities to serve unincorporated areas of the county not served by the recreation and park districts or special districts. Three state parks (Fort Tejon State Historical Park, Tule Elk State Reserve, and Red Rock Canyon State Park), two national forests (Los Padres National Forest and Sequoia National Forest), along with approximately 10,000 acres of USFWS land and over 500,000 acres of Bureau of Land Management land are located, in total or in part, within Kern County (Kern County 1994).

3.12.1.3 *Castaic Lake Water Agency*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP, although demand for recreational resources has increased as the population increased. Recreational resources in the CLWA service area consist of state, county/regional and local parks, and designated regional and local recreational trails. The Los Angeles County Department of Parks and Recreation provides local parks and recreation facilities for northwestern Los Angeles County residents and provides regional parks for all residents of the county. The Ventura County Parks Department provides this function for eastern Ventura County portions of the CLWA service area. The City of Santa Clarita provides local parks within the city boundaries. Los Angeles County has determined that there is a county-wide shortage of local parkland, including portions of the Santa Clarita Valley.

Regional recreation areas under the control of the federal government include the Angeles National Forest, the Los Padres National Forest, and the Santa Monica Mountains National Recreation Area. The Castaic Lake Recreation Area, described above, is also located within the CLWA service area.

3.12.2 Potential Impacts of the Project

3.12.2.1 *Significance Criteria*

The criteria used to determine the significance of impacts to recreation resources are based on Appendix G of the State CEQA Guidelines. The Project would have a significant environmental impact if it would:

- 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; or
- include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.12.2.2 *Environmental Impacts*

State Water Project and Associated Facilities

DIRECT IMPACTS

The Project would result in a slight increase in the amount of water transported in the California Aqueduct to Castaic Lake, which would not adversely impact fishing opportunities in the aqueduct. As described in section 3.0, minor seasonal changes in the average volume of water stored in San Luis Reservoir would result from Project implementation. The average volume of stored water would decrease slightly from December through June and would slightly increase the rest of the year. The amount of water stored in the reservoir already fluctuates, and the changes resulting from the Project would fall within the range of fluctuations present under both current and historic operations. Impacts to recreational resources at San Luis Reservoir would be less than significant. The volume of water stored at Castaic Lake would not change as a result of the Project, and recreational resources would not be affected. The use of existing SWP facilities to transport water to the CLWA service area would not increase the use of recreational facilities, nor does the Project include recreational facilities or require the construction or expansion of recreational facilities.

INDIRECT IMPACTS

No indirect impacts to recreational resources would occur.

Wheeler Ridge-Maricopa Water Storage District

DIRECT IMPACTS

The Project would not result in short-term or long-term population growth in the district (refer to section 3.10) and therefore would not increase the use of recreational facilities. The Project does not include or require the construction or expansion of recreational facilities.

INDIRECT IMPACTS

No indirect impacts to recreational resources would occur.

Castaic Lake Water Agency

DIRECT IMPACTS

The Project would not directly result in short-term or long-term population growth in the district (refer to section 3.10) and therefore would not directly increase the use of recreational facilities. The Project does not include or require the construction or expansion of recreational facilities.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.12.3 Mitigation Measures

3.12.3.1 *State Water Project and Associated Facilities*

No direct or indirect significant impacts to recreational resources would occur; therefore no mitigation measures are required.

3.12.3.2 *Wheeler Ridge-Maricopa Water Storage District*

No direct or indirect significant impacts to recreational resources would occur; therefore no mitigation measures are required.

3.12.3.3 *Castaic Lake Water Agency*

No direct significant impacts to recreational resources would occur; therefore no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.12.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project.

3.13 TRANSPORTATION AND CIRCULATION

3.13.1 Environmental Setting

3.13.1.1 State Water Project and Associated Facilities

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. The SWP and associated facilities are served by, lie adjacent to, or are traversed by, several major transportation routes, including Interstates 5 and 580, State Route 152, and Highways 33, 41, 46, 55, 119, 138, 166, and 198. Numerous general aviation airports exist within the regions traversed by the SWP and associated facilities, but none is immediately adjacent to the SWP facilities. Passenger bus and rail service are generally available in the urbanized areas traversed by the California Aqueduct.

3.13.1.2 Wheeler Ridge-Maricopa Water Storage District

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. The minor population increase in a rural area during this period would cause minor changes to transportation and traffic.

Planning, design, construction, and operation of regional transportation systems in the Kern County area are primarily the responsibility of the California Department of Transportation (CalTrans), District 6. The WRMWSD is served by several major transportation routes, including Interstate 5 and State Highways 99 and 166. Interstate 5 and State Highway 99 trend generally north to south through the district and serve as the major north/south routes through the San Joaquin Valley. State Highway 166 trends east to west through the district. Local roadways are under the jurisdiction of Kern County. The district does not contain any commercial or general aviation airport facilities, and the nearest commercial airport is Meadows Field, located northwest of Bakersfield. The area is not served by scheduled passenger rail or bus services.

3.13.1.3 Castaic Lake Water Agency

The primary agency responsible for the planning, design, construction, and operation of regional transportation systems in the Santa Clarita Valley is CalTrans District 7. Local roadways are under the jurisdiction of local cities and/or Los Angeles County. Two regional freeways serve the Santa Clarita Valley area. Interstate 5 traverses the area in a north-south direction on the west side of the City of Santa Clarita and continues south through the Los Angeles area. State Route 14 serves the eastern part of the area and beyond, connecting to the communities of Palmdale and Lancaster. State Route 126 traverses Ventura County in an east-west direction and continues to Los Angeles County intersecting with Interstate 5 near Santa Clarita.

The highway and roadway system in the Santa Clarita Valley is being modified in response to local and regional development projects, and Caltrans has developed long-range plans for state highways in this area based on projected travel demand over a 20-year period. Interstate 5, which has eight lanes from State Route 126 to State Route 14, is projected to need two additional

high occupancy vehicle (HOV) and two additional truck lanes to meet future traffic volumes (Caltrans 1991c). In general, traffic volumes increased between 1998 and the present since the population increased during this period.

The closest commercial airport to the CLWA service area is the Burbank Glendale Pasadena Airport, approximately 15 miles from Valencia. Passenger bus service is available to most of the service area, provided by Greyhound, Amtrak, and Santa Clarita Transit. Santa Clarita Transit provides transportation services connecting the communities of Castaic, Val Verde, Valencia, Saugus, Friendly Valley, Canyon Country, and Newhall and express service to downtown Los Angeles (Santa Clarita Transit 2002). In addition, three Metrolink rail stations are located within the CLWA service area.

3.13.2 Potential Impacts of the Project

3.13.2.1 Significance Criteria

The criteria used to determine the significance of an impact related to transportation are based on the initial study checklist in Appendix G of the State CEQA Guidelines. The Project would result in a significant impact if it would:

- cause an increase in traffic that 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;
- exceed either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- 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;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks).

3.13.2.2 Environmental Impacts

State Water Project and Associated Facilities

DIRECT IMPACTS

The Project would not involve construction or operational changes that could generate traffic or otherwise affect traffic conditions. Similarly, the Project would not produce a change in population or employment that would produce addition demands on the transportation system. Thus, the Project would not cause an increase in traffic, result in an exceedance of an established level of service standard, change air traffic patterns, substantially increase hazards,

result in inadequate emergency access, result in inadequate parking capacity, conflict with adopted policies supporting alternative transportation.

INDIRECT IMPACTS

No indirect impacts to transportation and circulation would occur.

Wheeler Ridge-Maricopa Water Storage District

DIRECT IMPACTS

The Project would not involve construction or operational changes that could generate traffic or otherwise adversely affect traffic conditions. Similarly, the Project would not produce a change in population or employment that would produce addition demands on the transportation system. Thus, the Project would not cause an increase in traffic, result in an exceedance of an established level of service standard, change air traffic patterns, substantially increase hazards, result in inadequate emergency access, result in inadequate parking capacity, conflict with adopted policies supporting alternative transportation.

INDIRECT IMPACTS

No indirect impacts to transportation and circulation would occur.

Castaic Lake Water Agency

DIRECT IMPACTS

The Project would not involve construction or operational changes that could generate traffic or otherwise affect traffic conditions. Similarly, the Project would not directly produce a change in population or employment that would produce addition demands on the transportation system. Thus, the Project would not cause an increase in traffic, result in an exceedance of an established level of service standard, change air traffic patterns, substantially increase hazards, result in inadequate emergency access, result in inadequate parking capacity, conflict with adopted policies supporting alternative transportation.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.13.3 Mitigation Measures

3.13.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to transportation and circulation would occur; therefore, no mitigation measures are required.

3.13.3.2 *Wheeler Ridge-Maricopa Water Storage District*

No direct or indirect significant impacts to transportation and circulation would occur; therefore, no mitigation measures are required.

3.13.3.3 *Castaic Lake Water Agency*

No direct significant impacts to transportation and circulation would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.13.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project, with the exception of potential indirect impacts within the CLWA service area. These are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.14 UTILITIES/SERVICE SYSTEMS

This section addresses potential impacts to utilities and service systems, including solid waste disposal and domestic and wastewater service. In addition, since the Project would require electrical power for pumping additional water through SWP facilities from the WRMWSD turnout to the CLWA turnout and for potable water treatment prior to use in the CLWA service areas, the sections describing the SWP and associated facilities and CLWA service area also include a discussion of energy consumption.

3.14.1 Environmental Setting

3.14.1.1 State Water Project and Associated Facilities

The SWP is a water storage and delivery system consisting of reservoirs, aqueducts, power plants, and pumping plants. Solid waste disposal services associated with SWP facilities are provided by municipalities as well as local disposal companies. Domestic water service is provided by municipalities and special districts. Wastewater service is provided by local municipalities as well as local treatment companies.

Electrical Power

The SWP is the single largest user of electrical power in California. The electricity needed to operate the SWP comes from a combination of SWP hydroelectric facilities, the Reid Gardner Coal-fired Generation Plant (approximately 68 percent of Unit 4 is owned by DWR), and through long-term and short-term contracts with other energy producers (DWR 2002).

In 1998, operating the 25 SWP pumping and generating plants required 3.445 billion kilowatt hours (kWh) (DWR 2001a) to deliver approximately 1.8 million AF of water overall and approximately 666,000 AF of water to southern California. During 1998, SWP facilities produced approximately 4.533 billion kWh of energy (not including the 1.382 million kWh of energy produced under DWR's share of the Reid Gardner coal-fired generation plant) (DWR 2001a). In 1998, DWR sold approximately 6.9 billion kWh to 36 utilities and 19 power marketers (DWR 2001a). DWR also purchased or exchanged 4.43 billion kWh of energy in 1998 (DWR 2001a).

In 2000, operating the 25 SWP pumping and generating plants required 9.19 billion kWh to deliver approximately 3.6 million AF overall and approximately 1.8 million AF to southern California (DWR 2002)[1]. In 2000, DWP sold approximately 2.92 billion kWh to 24 utilities and 16 power markets (DWR 2002). DWR also purchased 2.94 billion kWh of energy in 2000 (DWR 2002).

Water delivered to the WRMWSD turnouts passes though the Banks, Dos Amigos, and Buena Vista pumping plants on the California Aqueduct as it travels from the SWP south Delta facilities to the first of WRMWSD's turnouts. When water is stored in San Luis Reservoir, it also

1 These values are total water delivered and include deliveries associated with Table A, Article 21, flexible storage, and non-project water. See Table 9-1 in DWR 2002.

passes through the Gianelli Pumping-Generating Plant located adjacent to the reservoir. The SWP Teerink and Chrisman pumping plants, both located within the WRMWSD, lift water in the Aqueduct as it continues south. Water in the Aqueduct is then lifted over the Tehachapi Mountain Range by the Edmonston pumping plant, and lifted again at the Oso pumping plant. Water then flows through the Warne powerplant just north of Pyramid Lake. Water is delivered from Pyramid Lake to Castaic Lake by gravity. Some power is recovered at the Warne and Castaic powerplants (Castaic powerplant is owned and operated by the Los Angeles Department of Water and Power) when water flows down the Aqueduct from the south side of the Tehachapi Mountain Range to Castaic Lake.

Electrical energy demand varies in response to economic trends and population. As a result of these factors, peak electrical energy demand is expected to increase by approximately 10 MW per year for the foreseeable future (CEC 2002b). However, when one considers the West as a whole, more generation capacity is being built than is necessary to meet the anticipated demands of growth. Based on the evaluations of recent demand trends, population trends, fuel costs, power generation capability and construction, meteorological conditions, actions outside California, and other factors, CEC concluded that, for the foreseeable future, capacity additions will exceed the peak demand growth both within California and the Northwest, Southwest, and Rocky Mountain regions. While various factors may trigger calls for load curtailments, supply reserve margins should be adequate to meet the reasonably foreseeable demands.

3.14.1.2 Wheeler Ridge-Maricopa Water Storage District

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP. Population increased modestly during this period (the entire increase between 1998 and 2000 was less than 400 persons); thus, the demand for utilities and service systems likely increased as well.

Solid Waste

Kern County Waste Management Department operates seven landfills including Bena, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi; and six transfer stations including Buttonwillow, Glennville, Kern Valley, Lebec, Lost Hills, and McFarland-Delano. In addition, four bin sites serve Kern County and include Caliente, Keene, Lorraine-Twin Oaks, and Randsburg.

Wastewater

Wastewater treatment within Kern County is provided by public entities and individual wastewater treatment facilities such as septic tanks and leach fields. All residential and commercial buildings in WRMWSD use individual wastewater treatment facilities.

Storm Water

The Kern County Engineering & Survey Services Department (KCESSD) provides storm water services to WRMWSD. These services includes the design, maintenance, and monitoring of pollutant discharges from Kern County's storm water management infrastructure. The Engineering & Survey Services Department is also responsible for reviewing and inspecting

street, sewer, water, drainage, and grading plans for Kern County project and development permits, collecting floodplain mapping and hydrologic data, and implementing the National Flood Insurance Program (KCESSD 2002).

3.14.1.3 *Castaic Lake Water Agency*

No substantial changes in baseline conditions have occurred between the 1998 NOP and the 2003 NOP, except as noted. In general, population increased during this period; thus, the demand for utilities and service systems likely increased as well.

Solid Waste Disposal

Waste generated in the CLWA service area is generally hauled by private contractors to public landfills in Los Angeles County. The Chiquita Canyon Landfill and the Sunshine Canyon Sanitary Landfill handle the majority of waste from the Santa Clarita Valley, although numerous other landfills in Los Angeles County also provide service. Landfill capacity available to the CLWA service area is therefore not limited to those areas in the immediate vicinity. In 1998, Chiquita Canyon Landfill had a remaining capacity of approximately 1 million tons and had an expansion permit pending for an additional 23.0 million tons. The landfill had a daily limit of 5,000 tons per day or 30,000 tons per week. Since 1998, the 23.0 million ton expansion permit for the Chiquita Canyon Landfill was approved, and it has a remaining capacity of 20.1 million tons (LACSD 2002). The landfill's allowable daily tonnage is currently 6,000 tons per day; however, the weekly allowable amount is still 30,000 tons per week (California Integrated Waste Management Board [CIWMB] 2001a).

In 1998, the capacity of the Sunshine Landfill was 17 million tons, which was expected to last for another nine years (personal communication, S. Rohas 1998). The maximum daily tonnage rate in 1998 was 6,000 tons per day or 36,000 tons per week (personal communication, J. Aidukas 1998). This facility is developing plans for expansion to a 90 million ton capacity that would be expected to last 26 years after date of approval. Expansion would include an increase in the maximum tonnage rate from 6,000 to 11,000 tons per day. As of May 2001, the daily tonnage rate increased to 6,600 tons per day, and the landfill has a remaining capacity of 16 million cubic yards (CIWMB 2001b). The Sunshine Landfill currently has an estimated closure date of January 2004 (CIWMB 2001b).

Water Treatment

Surface water and groundwater are treated prior to the distribution for potable use. Treatment of groundwater within the CLWA service area is generally limited to disinfection and is completed at individual wellhead facilities. Surface water (such as from imported sources) is filtered and disinfected, in compliance with applicable regulations, at either the Earl Schmidt Filtration Plant (ESFP) or Rio Vista Water Treatment Plant (RVWTP). Construction is underway at the ESFP to upgrade the treatment process to meet anticipated water quality requirements and to expand the ESFP capacity from 33.6 million gallons per day (mgd) to 56 mgd (refer to section 4.2.14 regarding Growth-Related Impacts and Chapter 6.0, Cumulative Impacts, for additional details). The ESFP was originally constructed with a capacity of 12.5 mgd in 1980 and expanded to 25 mgd in 1987. In the 1990s, the California Department of Health Services re-rated the treatment plant to a capacity of 28 mgd and then in 2001 to a capacity of 33.6 mgd.

The ESFP is located in Castaic, near Castaic Lake. The ESFP obtains its raw water supply from SWP water stored in Castaic Lake. The RVWTP was constructed in the early 1990s with a rated capacity of 30 mgd. The RVWTP is located in Santa Clarita, near Bouquet Canyon Road.

Water treatment capacity is based on peak demand. Current and anticipated operations of the existing and proposed water production and treatment facilities have a great deal of flexibility to meet peak (summer) demands and non-peak ("baseload" or winter) demands by coordinated use of imported and local groundwater resources and associated treatment facilities. Based on the operations and peaking factors used by CLWA, the combined capacity of the existing facilities is sufficient to treat approximately 35,600 AFY for potable use. If these facilities were operated at peak capacity for a full year they would have the capacity to treat approximately 71,200 AF. The routine operation of the treatment plants at full rated capacity would not follow sound engineering or operational practices. When the ESFP expansion project is completed (expected in 2005), normal treatment capacity would be increased to approximately 48,200 AFY. If expanded peak operations were maintained for a full year, the treatment capacity would be approximately 96,300 AFY.

Wastewater

Santa Clarita Valley and Unincorporated Los Angeles County. Two wastewater treatment facilities managed by the County Sanitation Districts of Los Angeles County service the Santa Clarita Valley and vicinity: the Saugus Water Reclamation Plant and the Valencia Water Reclamation Plant. These facilities are operated by the County Sanitation Districts of Los Angeles County. These facilities work jointly to treat the wastewater of the Santa Clarita Valley. Any excess flows from the Saugus facility are treated by the Valencia facility. The Saugus facility has a maximum capacity of 6.5 mgd. The treatment processes used are primary, secondary, and tertiary treatment. Both the Saugus and Valencia facilities discharge treated effluent into the Santa Clara River. The Valencia Water Reclamation Plant is also a primary, secondary, and tertiary treatment facility with a capacity of 12.6 mgd. These two districts jointly operate a regional system known as the Santa Clarita Valley Joint Sewerage System (SCVJSS) for which the 2015 Joint Sewerage System Facilities System Plan has been completed (LACSD 1998). The SCVJSS has a current combined capacity (from the Saugus and Valencia treatment plants in 2003) of 19.1 mgd and plans to expand capacity to 28.1 mgd by 2004. The System Plan identifies further expansion to the practical site capacity of 34.1 mgd by 2010, which has been extended to 2020 (personal communication, S. Highter, 2003). To date, the efforts to expand capacity to 28.1 mgd are on schedule, and completion is expected in Spring 2004. All expansions are occurring at the Valencia plant. The ultimate expansion is intended to serve a population of 321,000. Nitrification and denitrification process upgrades have been completed at both facilities (final construction is ongoing but the processes have been underway since June of 2003) and the related required effluent standards have been met since June of 2003 (personal communication, R. Kettle 2004).

Unincorporated Ventura County. A package plant located on the north side of Highway 126 at its intersection with Hopper Creek provides wastewater treatment service to the residents of the nearby unincorporated areas of Ventura County (personal communication, R. Pakala 1998). This package plant, managed by Ventura County Public Works, Water and Sanitation Department, uses an activated sludge process to service 220,000 gallons of wastewater per day

(Ventura County Public Works Agency 2001). All treated effluent is discharged into several percolation ponds located on the south side of Highway 126.

Storm Water

Santa Clarita Valley and Unincorporated Los Angeles County. The Los Angeles County Department of Public Works provides storm water services for the Santa Clarita Valley and unincorporated Los Angeles County. The Department of Public Works is responsible for the design, construction, operation, maintenance, and repair of roads, bridges, airports, sewers, water supply, flood control and water conservation facilities; and for the design and construction of capital projects. Additional responsibilities include regulatory and ministerial programs for the County of Los Angeles, Los Angeles County Flood Control District, other special districts, and contract cities that request services. A 24-hour Emergency Operations Center is maintained to respond to problems reported by the public and other agencies as well as major emergencies, such as floods, windstorms, snowstorms, earthquakes, etc., and to monitor various Department facilities (Los Angeles County Department of Public Works 2002).

Unincorporated Ventura County. The Flood Control Department of the Ventura County Public Works Agency has the operational responsibilities for the Ventura County Flood Control District, which provides storm water services to the unincorporated regions of Ventura County.

Electrical Power

Southern California Edison (Edison) provides electricity to the CLWA service area. Edison generates electricity from a variety of energy resources, including solar, geothermal, hydroelectric, natural gas, and nuclear. Edison also purchases electricity from independent producers and is part of the Pacific Intertie and the western power supply grid.

The Edison transmission system includes transmission lines of approximately 50 miles in length or greater with a capacity of 220,000 volts, as well as sub-transmission systems with a 66,000 volt capacity, which transmit power from the larger capacity lines to 7 existing substations serving the Santa Clarita Valley. The Elizabeth Lake Substation, located in Castaic, serves the ESFP. Edison has a proprietary 10-year plan for the Santa Clarita Valley and has earmarked additional substations and power lines to be built, as needed, depending upon growth in the area (personal communication, M. Hughes 2002). Power consumption in the CLWA service area likely increased between 1998 and the present since the population increased during this period.

3.14.2 Potential Impacts of the Project

3.14.2.1 Significance Criteria

The significance criteria listed below are based on Appendix G of the State CEQA Guidelines. The Project would have a significant impact on utilities and service systems if it would:

- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

- require or result in the construction of new water, wastewater treatment, or electrical power generation facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- 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;
- exceed water supplies available to serve the project from existing entitlements and resources and require new or expanded entitlements;
- exceed existing wastewater treatment capacity;
- exceed existing landfill capacity; and/or
- not comply with federal, state, and local statutes and regulations related to solid waste.

3.14.2.2 *Environmental Impacts*

3.14.2.2.1 *State Water Project and Associated Facilities*

DIRECT IMPACTS

Implementation of the Project would not require new construction or the modification of existing SWP conveyance facilities. SWP conveyance facilities were constructed to meet the anticipated demands of the SWP Contractors; however, these delivery demands vary from year to year and many Contractors don't request delivery of their total Table A Amounts in every year, thereby resulting in the availability of additional conveyance capacity. The use of existing SWP facilities to transport water from the WRMWSD service area to the CLWA service area would not affect wastewater treatment, require or result in the construction of new or expanded water or wastewater treatment facilities or storm water drainage facilities, require a water supply to serve the Project, or require the disposal of additional solid waste.

The Project would require additional electricity to pump the transferred water to the CLWA turnouts. About 3,450 kWh per AF are required to pump water through the Teerink, Chrisman, Edmonston, and Oso pumping plants for delivery to the CLWA turnout (DWR 2001a). Although the average amount of water transferred would vary from year to year (refer to section 3.15), assuming the full Table A Amount of 41,000 AF were delivered to CLWA, about 0.14 billion kWh would be required to pump the additional water through these pumping plants for delivery to the CLWA turnout. This is approximately 3 percent of the total energy used by the 25 SWP pumping and generating plants in 1998, and approximately 1.5 percent of the power used in 2000. The difference in these values is a result of the differing amounts of water delivered by the SWP in these two years (approximately 1.76 million AF in 1998 and approximately 3.57 million AF in 2000; DWR 2002).

SWP pumping facilities are rated to meet the anticipated demands of the SWP Contractors, and this rated capacity would not be exceeded by implementation of the Project. The amount of additional power required would be within the limits of the planned power supply, and no expansion or construction of new facilities to generate power would be required. The impact to electrical power would be less than significant.

INDIRECT IMPACTS

No indirect impacts to utilities and service systems would occur.

3.14.2.2.2 Wheeler Ridge-Maricopa Water Storage District

DIRECT IMPACTS

The Project would not involve new construction or other changes that would result in increased demand for utilities and service systems. Therefore, the Project would not affect wastewater treatment, require or result in the construction of new or expanded water or wastewater treatment facilities or storm water drainage facilities, require a water supply to serve the Project, require the disposal of additional solid waste, or generate additional demand for electrical power.

INDIRECT IMPACTS

No indirect impacts to utilities and service systems would occur.

3.14.2.2.3 Castaic Lake Water Agency

DIRECT IMPACTS

The Project would not involve new construction or other changes that directly would result in increased demand for utilities and service systems. Therefore, the Project would not directly affect wastewater treatment, require or result in the construction of new or expanded water or wastewater treatment facilities or storm water drainage facilities, require a water supply to serve the Project, require the disposal of additional solid waste, or generate additional demand for electrical power.

The Project would generate additional demand for water treatment and electrical power to treat and distribute the transferred water within the CLWA service area. The pumping plants and treatment facilities have the existing or planned capacity to accommodate the additional amount of water provided by the Project; thus, the amount of additional power and water treatment required would be within the limits of the planned supplies, and no expansion or construction of new facilities to generate power or water treatment beyond that which is already being planned would be required. The impact to electrical power and water treatment would be less than significant.

INDIRECT IMPACTS

Potential impacts to utilities and service systems from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.14.3 Mitigation Measures

3.14.3.1 State Water Project and Associated Facilities

No direct or indirect significant impacts to utilities and service systems would occur; therefore, no mitigation measures are required.

3.14.3.2 Wheeler Ridge-Maricopa Water Storage District

No direct or indirect significant impacts to utilities and service systems would occur; therefore, no mitigation measures are required.

3.14.3.3 Castaic Lake Water Agency

No direct significant impacts to utilities and service systems would occur; therefore, no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.14.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable impacts would result from the Project, with the exception of potential indirect impacts to solid waste disposal within the CLWA service area. These are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.15 WATER RESOURCES

As discussed in section 3-0, this EIR's description of the Project's environmental setting includes information from the general timeframe when the January 2003 NOP was issued (referred to as current or present conditions), as well as information describing the environmental setting as it existed when the NOP for the 1999 Supplemental Water Project Final EIR was published (April 1998). Table 3.0-1 describes the key substantive changes in the environmental setting, if any, that occurred between 1998 and the present for each environmental resource analyzed in this EIR. The differences relevant to water resources are summarized below for the three geographic areas under consideration.

State Water Project

Total Table A deliveries fluctuated, ranging from a low of 1,546,740 AF in 2001 to a high of 3,714,230 AF in 2003. SWP Table A Amounts were transferred among SWP Contractors, including MWD to Coachella Valley Water Authority – 35,000 AF; Belridge Water Storage District to Zone 7 – 2,219 AF; and Tulare Lake Basin Water Storage District to Zone 7 – 400 AF. The PCL litigation challenging the Monterey Amendment was settled and essentially leaves these amendments in place (see sections 12.2 and 1.4.2 for a more complete description).

Wheeler Ridge-Maricopa Water Storage District

Water supplies are generally the same, although WRMWSD has increased participation in other, more cost effective, water management options. In 1998, such water management activities could have supplied WRMWSD with an additional 59,500 AFY, and 106,000 AFY in 2002. WRMWSD's contract with KCWA from SWP water was 197,088 AF in 2002. WRMWSD's contract with KCWA was 238,088 AF of "firm supply" in 1998.

Castaic Lake Water Agency

Water supply sources are generally the same, although CLWA's SWP Table A Amount was was increased by 41,000 AF due to the Project. In 1998, CLWA's average year SWP supply was estimated to be 46,500 AF based on available DWR model analysis. CLWA's average year SWP supply now is estimated to be 68,300 AF based on new DWR model results and Project implementation. In 1998, the total water demand in 2010 was projected to be approximately 106,300 AF. Future demand now is expected to be approximately 82,400 AF in 2010 and 102,500 AF by 2020.

3.15.1 Environmental Setting

3.15.1.1 State Water Project

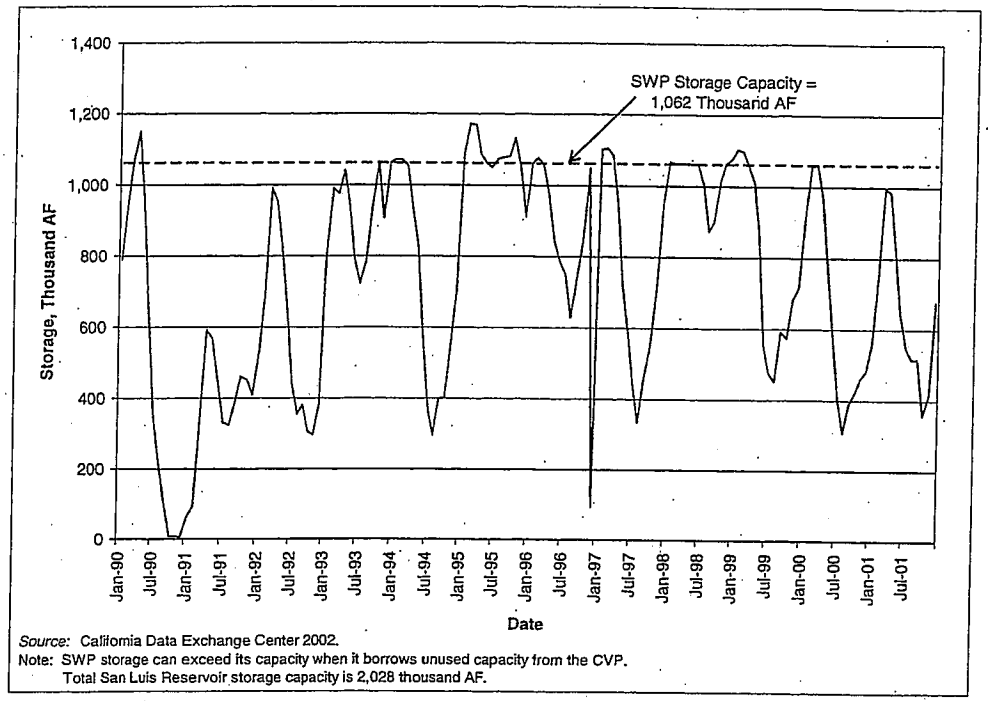
SWP Facilities

The SWP is a water supply, storage, and distribution system that includes 28 storage facilities, reservoirs, and lakes; 20 pumping plants; six pumping-generating plants and hydroelectric power plants; and about 660 miles of aqueducts and pipelines (DWR 2001a). Principal SWP facilities are shown on Figure 1.3-1.

The primary water source for the SWP is within the drainage of the Feather River, a tributary of the Sacramento River, where runoff is stored behind Oroville Dam. Water released from Oroville Dam flows down natural channels to the Delta. In the southern Delta, water is pumped into the 444-mile-long California Aqueduct at the Clifton Court Forebay by the Banks Pumping Plant (or by agreement with the U.S. Bureau of Reclamation [USBR], at the Central Valley Project's [CVP] Tracy Pumping Plant). SWP water exports for users south of the Banks and Tracy pumping plants are currently limited by a series of water quality and operational constraints, governed primarily by the SWRCB's Water Right Decision 1641, as amended. Decision 1641 was adopted by the SWRCB in 1999; prior to that time, SWP water exports from the Delta were limited by the SWRCB's Water Right Decision 1485 (adopted in 1978), Order Water Right (WR) 95-6 (adopted in 1995), and Order WR 98-09 (adopted in 1998).

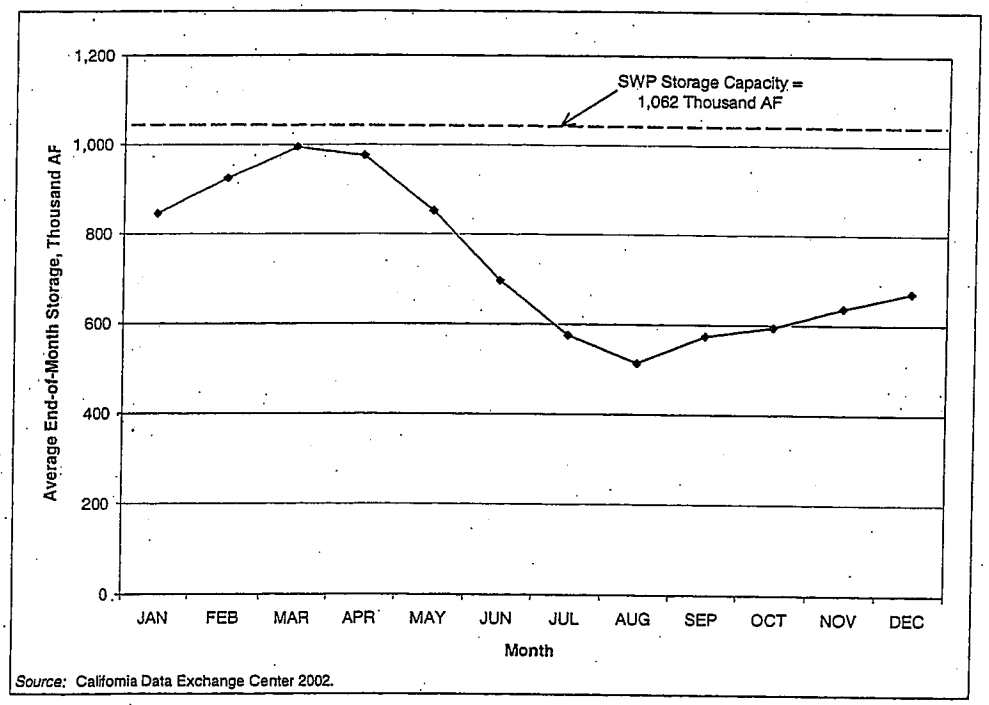
From the southern Delta facilities, water in the California Aqueduct travels along the west side of the San Joaquin Valley and is delivered directly to SWP Contractors or is stored in San Luis Reservoir, the SWP's main storage facility south of the Delta. San Luis Reservoir, located near Los Banos, is an off-stream storage reservoir with a total storage capacity of more than 2 million AF (of which approximately 1,062,000 AF are allocated to the SWP; the remainder is allocated to the CVP [DWR 2001a]).

In general, the SWP is operated to fill storage reservoirs during the high runoff months of the winter and early spring. Regulatory requirements for the Delta and associated operational constraints also affect the timing and ability to fill reservoirs south of the Delta. Under current operating conditions, including Decision 1641, SWP diversions from the Delta are substantially reduced as of April 15 of each year. As a result, the SWP is operated to store as much water as possible in San Luis Reservoir prior to April 15. The stored water is then released to meet Contractor demands during the high-demand summer and fall months to supplement the more limited pumping from the Delta during those months. Figure 3.15-1 shows the volume of SWP water stored in San Luis Reservoir for the period between 1990 and 2001. Figure 3.15-2 shows the average end-of-month SWP storage in San Luis Reservoir from 1990 to 2001. As is shown on these figures, San Luis Reservoir SWP storage levels vary considerably, both during the year and from year to year. From 1990 to 2001, SWP storage in the reservoir has ranged from approximately zero to more than 1.1 million AF.



Source: California Data Exchange Center 2002.
Note: SWP storage can exceed its capacity when it borrows unused capacity from the CVP. Total San Luis Reservoir storage capacity is 2,028 thousand AF.

Figure 3.15-1. SWP Storage in San Luis Reservoir, 1990 to 2001



Source: California Data Exchange Center 2002.

Figure 3.15-2. SWP Storage in San Luis Reservoir, 1990 to 2001 Average End-of-Month Storage

Water is conveyed southward from San Luis Reservoir via the California Aqueduct to the primarily agricultural users in the San Joaquin Valley and the primarily urban regions of the Central Coast and southern California. Water is diverted from the Aqueduct and delivered directly to SWP Contractors, including KCWA, in the central and southern San Joaquin Valley at various locations along the Aqueduct. The Aqueduct traverses the west side of the San Joaquin Valley, and water is pumped through a series of four pumping plants (Dos Amigos, Buena Vista, Teerink, and Chrisman) before reaching the Edmonston Pumping Plant. The capacity in these reaches of the Aqueduct ranges from 10,000 cubic feet per second (cfs) at the northern end to approximately 4,400 cfs at the Edmonston Pumping Plant. The Edmonston Pumping Plant pumps water over the Tehachapi Mountain Range, and the California Aqueduct then divides into the East Branch and the West Branch. Water intended for use by CLWA is conveyed through the West Branch through Quail and Pyramid lakes and then to Castaic Lake, the terminus for the West Branch.

Quail and Pyramid lakes are located between the KCWA turnouts for deliveries to WRMWSD and the CLWA turnout on the West Branch of the California Aqueduct. Because of Quail Lake's limited storage capacity (approximately 7,800 AF) the lake is primarily used for the re-regulation of Aqueduct flows. Pyramid Lake, which has a storage capacity of approximately 171,200 AF, is used to provide an emergency water supply to the SWP Contractors that receive deliveries from the West Branch in the case of a major supply system outage, and is used in the operation of the Castaic Power Plant, located between Pyramid and Castaic lakes.

Castaic Lake has a storage capacity of approximately 323,700 AF. As shown on Figure 3.15-3, from 1990 to 2001, storage has ranged from a minimum of approximately 150,000 AF to a maximum of approximately 320,000 AF. The average end-of-month storage from 1990 to 2001 in Castaic Lake is shown on Figure 3.15-4. The reservoir is operated to provide regulatory storage to meet peak deliveries during the summer months for the three SWP Contractors that receive water from Castaic Lake (CLWA, The Metropolitan Water District of Southern California [MWD], and the Ventura County Flood Control District [VCFCD]), and to provide an emergency water supply in the case of a major supply system outage. As part of the Monterey Amendment, these three SWP Contractors have access to 160,000 AF of the storage from Castaic Lake as "flexible storage," which they may withdraw in addition to their allocated SWP supplies and which they must replace within five years of any withdrawal. Local runoff captured in Castaic Lake is managed in compliance with an agreement between DWR and the holders of prior water rights. From 1990 to 2000, SWP deliveries to CLWA from Castaic Lake averaged approximately 19,200 AF, or approximately 6 percent of the total annual SWP deliveries from the lake (see Table 3.15-1). From 1990 to 2000, the majority of the SWP water delivered from the lake (approximately 93 percent) was delivered to MWD due to its relatively larger Table A Amount and storage rights in Castaic Lake.

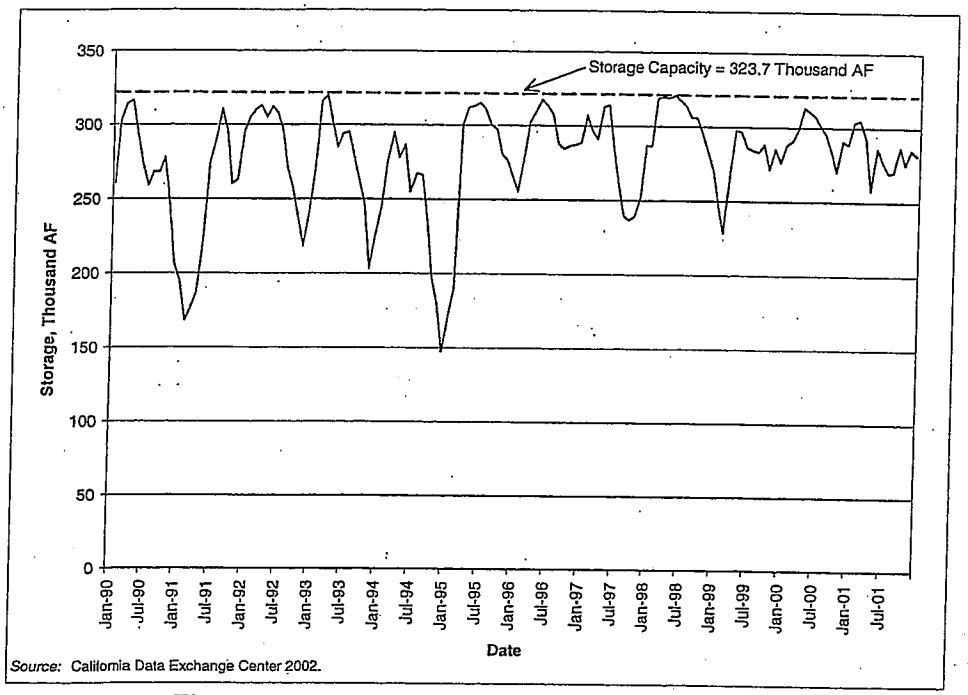


Figure 3.15-3. Castaic Lake Storage, 1990 to 2001

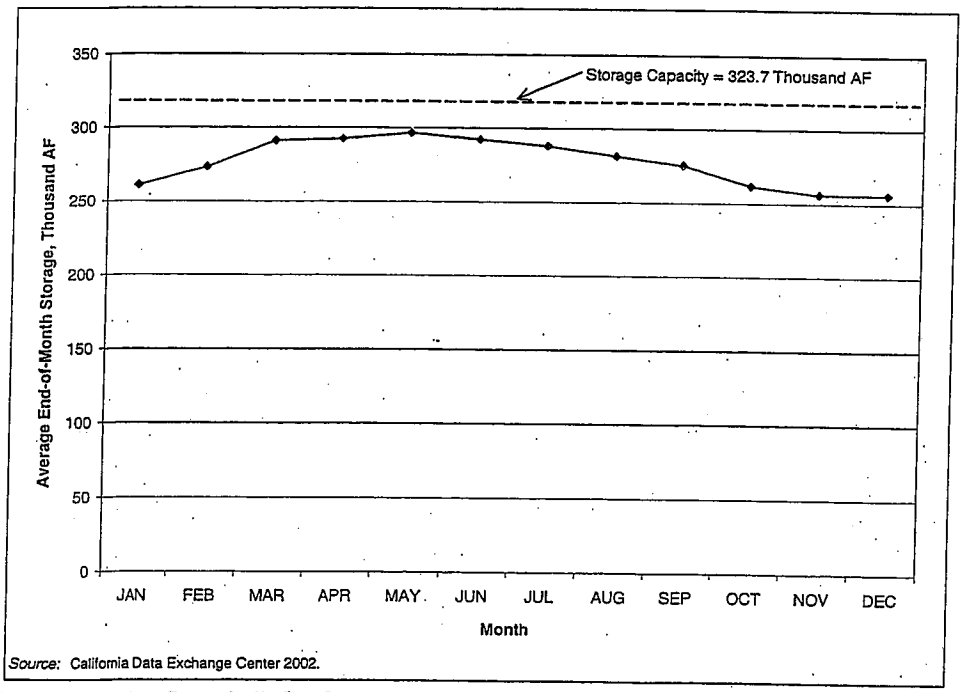


Figure 3.15-4. Castaic Lake Storage, 1990 to 2001 Average End-of-Month Storage

Table 3.15-1. Annual SWP Water Deliveries from Castaic Lake by Contractor, 1990 to 2000

	CLWA	MWD	VCFCD	Other[1]	Total	CLWA as a % of Total
1990	22,139	764,380	0	0	786,519	2.81
1991	3,846	257,835	0	1,240	262,921	1.46
1992	14,812	420,849	0	0	435,661	3.40
1993	13,787	437,470	0	0	451,257	3.06
1994	14,919	475,900	0	0	490,819	3.04
1995	17,747	139,882	0	0	157,629	11.26
1996	18,448	267,618	0	0	286,066	6.45
1997	22,842	271,379	1,850	27,130	323,201	7.07
1998	19,782	187,277	1,850	0	208,909	9.47
1999	28,813	327,001	1,850	0	357,664	8.06
2000	33,674	632,993	1,848	0	668,515	5.04
Average	19,164	380,235	673	2,579	402,651	5.56

Source: DWR 2002.

1. Includes deliveries from Castaic Lake via exchange. These deliveries were made by the Santa Barbara County Flood Control and Water Conservation District in 1991 via exchange with VCFCD, and by the Coachella Valley Water District and Desert Water Agency in 1997 via exchange with MWD.

Water Supply and Demands[1]

As described in section 1.4.2, in the early 1960s, DWR began entering into individual Water Supply Contracts with various urban and agricultural public water supply agencies, known as Contractors. The total planned annual delivery capability of the SWP and the sum of all Contractors' maximum Table A Amounts specified in the Water Supply Contracts were approximately 4.2 million AF. The initial SWP facilities were designed to meet Contractors' water demands in the early years of the project, with the construction of additional facilities planned as demands increased. Water deliveries to Contractors began as initial SWP facilities were completed in the late 1960s and early 1970s; essentially no additional SWP storage facilities have been constructed since that time.

As shown on Table 3.15-2, from 1990 to 2003, actual SWP annual deliveries of Table A supplies to Contractors have ranged from approximately 550,000 AF in 1991 to approximately 3.7 million AF in 2003. Many Contractors did not request delivery of their full Table A Amount during this period. Climatic conditions and other factors can significantly alter the availability of SWP water in any year. The annual allocations of water made by DWR are based on that year's hydrologic conditions, the amount of water in storage in the SWP system, and Contractors' requests for SWP supplies. Contractors' water needs vary from year to year, and many

1 Bulletin 132-01, *Management of the California State Water Project*, is the most recent published data by DWR for SWP operations, including SWP deliveries to Contractors. Because Bulletin 132-01 covers SWP activities through calendar year 2000, the baseline information presented in this EIR for SWP operations includes information through calendar year 2000.

Contractors did not request delivery of their full Table A Amount in a number of years during this 14-year period.

Table 3.15-2. SWP Annual Table A Deliveries, 1990 to 2003

	Agricultural Contract Holders		*M&I Contract Holders*		*Total Table A Deliveries (AF)*
	Table A Deliveries (AF)	*Allocation Percentage (%)*	*Table A Deliveries (AF)*	*Allocation Percentage (%)*	
1990	706,080	50	1,876,070	100	2,582,150
1991	12,440	0	536,670	30	549,110
1992	509,810	45	961,650	45	1,471,460
1993	1,250,370	100	1,064,870	100	2,315,240
1994	614,360	53	1,134,990	53	1,749,350
1995	1,165,520	100	801,570	100	1,967,090
1996	1,369,190	100	1,145,640	100	2,514,830
1997	1,067,320	100	1,258,460	100	2,325,780
1998	860,720	100	864,800	100	1,725,520
1999	1,333,590	100	1,405,300	100	2,738,890
2000	1,177,200	90	2,022,700	90	3,199,900
2001	383,840	39	1,162,900	39	1,546,740
2002	827,128	70	2,059,886	70	2,887,014
2003	1,064,267	90	2,649,966	90	3,714,230

Source: For 1990 to 2000, DWR 2002. For 2001, DWR 2004a. For 2002, DWR 2003c. For 2003, DWR 2004b.

Under conditions specified in the Water Supply Contracts, DWR can make water available to SWP Contractors above and beyond a Contractor's Table A supply. Table 3.15-3 provides an overview of the various types of SWP water supplies discussed throughout this EIR.

In 1998, DWR estimated that annual deliveries to SWP Contractors would average approximately 3.1 million AF (based on estimates of then-existing levels of Contractor demands and land and water use upstream of the Banks Pumping Plant[2], with existing facilities operated under the constraints of Order WR 95-6; DWR 1998). This estimate is generally consistent with DWR's recent SWP Delivery Reliability Report (DWR 2003b). In this report, DWR estimated that the SWP currently can be expected to deliver an average annual supply of approximately 2.96 million AF, based on a 2001 level of Contractor demand and upstream land and water use, with existing facilities operated under existing constraints (DWR 2003b).

2 Land and water use upstream of the Banks Pumping Plant affects the amount of water flowing into the Delta. In general, increases in the amount of water flowing into the Delta can increase SWP supplies, while decreases in the amount of water flowing into the Delta (due to increased water use upstream or a variety of other factors) can decrease SWP supplies.

Table 3.15-3. SWP Surplus and Other Water Types

Surplus Water	SWP water that can be made available to Contractors when water and capacity are available in excess of SWP storage needs and Table A supplies. See below for terminology for, and descriptions of, specific types of surplus water. Surplus water terminology changed with implementation of the Monterey Amendment.	
	Without Monterey Amendment (Including With Implementation of Article 18(b))	**With Monterey Amendment**
	Scheduled surplus water - Water that DWR determined to be available, in addition to Table A supplies, which was scheduled for delivery throughout the year (in the same manner as Table A supplies). This water was generally available only during the early years of the SWP (when Contractor demands were low).	Category deleted as part of the Monterey Amendment. Given increased Contractor demands, this water was physically no longer available.
	Unscheduled surplus water - Water that DWR made available when water and capacity were available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors demands are low, and only under specific conditions that do not occur on an annual basis.	**Article 21 water** - Same as unscheduled surplus water. Article 21 water was defined under the Monterey Amendment as "interruptible water" but is more commonly referred to as "Article 21 water."
Carryover Water	SWP Table A water that is allocated to, and paid for by, a Contractor in one year, but is stored in SWP supply reservoirs (when storage is available) for use by that Contractor in a following year.	
DWR Dry Year Purchase	Water from DWR's Dry Year Water Purchase Program, through which water is purchased by DWR in shortage years from willing sellers in areas that have available supplies, and is then sold by DWR to Contractors willing to purchase those supplies.	
Flexible Storage (Added as part of the Monterey Amendment)	Storage available to Contractors that share in repayment of the costs of terminal reservoirs (Castaic and Perris lakes). These Contractors may withdraw water from their share of flexible storage, in addition to any other SWP supplies available to the Contractor. The Contractor must replace any water it withdraws from flexible storage within five years. Flexible storage was added to the Water Supply Contracts as part of the Monterey Amendment. CLWA may withdraw up to 4,684 AF of water from Castaic Lake as flexible storage.	
Turnback Pool Water (Added as part of the Monterey Amendment)	Water sold or purchased through the SWP Turnback Pool. The Turnback Pool is a program in which Contractors with allocated Table A supplies that are in excess of their needs in a given year may turn back that excess supply for purchase by other Contractors that need additional supplies that year. The Turnback Pool can make water available in all types of hydrologic years, although there is generally less excess water turned back in dry years. The Turnback Pool was created as part of the Monterey Amendment.	

Water Quality

Water quality in the California Aqueduct is primarily a reflection of the quality of water diverted from the Delta. Wet hydrologic years have lower concentrations of total dissolved

solids (TDS[3]) and other constituents relative to drier hydrologic years due to higher Delta outflows pushing the Delta's seawater/fresh water interface further downstream. Water quality sampling data are available at various locations in the California Aqueduct from the California Data Exchange Center (CDEC) operated by DWR. Table 3.15-4 summarizes the water quality data at the Banks Pumping Plant, Check 29 on the California Aqueduct (the nearest upstream location to WRMWSD), and at Castaic Lake from 1990 to 2001.

Table 3.15-4. SWP Water Quality Summary based on Monthly Data for the Banks Pumping Plant, Check 29, and Castaic Lake, 1990 to 2001

Constituent[1]	*MCL*[1]	*Harvey Banks Delta Pumping Plant*		*Check 29*[2]		*Castaic Lake*[3]	
		AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
Chloride[4] (mg/L)	250	82.27	12 to 162	85.05	3 to 170	77.64	41 to 119
Nitrate + Nitrite, (mg/L)	10	3.33	0.13 to 13	2.909	0.1 to 8.9	1.18	0.044 to 3.1
TDS[4] (mg/L)	500	276.12	85 to 466	330.55	66 to 687	386.59	239 to 429
Arsenic[5] (mg/L)	0.010	0.002	0.001 to 0.01	0.002	0.001 to 0.017	0.002	0.002 to 0.008
Selenium (mg/L)	0.05	0.001	0.001 to 0.002	0.005	0.001 to 0.1	0.001	0.001 to 0.001

Source: Personal communication, C. Erickson 2003.

1. An MCL (Maximum Contaminant Level) is the maximum permissible level of a contaminant in drinking water that is delivered to any user of a public water system.
2. Check 29 is located near Highway 119, north of the Buena Vista Pumping Plant and south of the Coastal Aqueduct.
3. Castaic Lake data were taken from MWD's inlet pipe and the outlet tower.
4. The chloride and TDS standards are secondary standards, which are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards but does not require compliance. States may choose to adopt them as enforceable standards, however.
5. On January 22, 2001, EPA adopted a new standard for arsenic in drinking water at 0.010 milligrams per liter (mg/L), replacing the previous standard of 0.050 mg/L. The rule became effective on February 22, 2002. Systems must comply with the new 0.010 mg/L standard is January 23, 2006 (EPA 2002).

The beneficial uses[4] designated by the Central Valley Regional Water Quality Control Board (CVRWQCB) for the California Aqueduct include municipal, agricultural, industrial, recreational (except for canoeing and rafting), and wildlife habitat uses (CVRWQCB 1998). The San Luis Reservoir has the same beneficial uses designated for the Aqueduct except that the reservoir does not have an industrial processing use. San Luis Reservoir is also designated as a

3 TDS is a measure of the total amount of minerals, organic matter, and nutrients that are dissolved in water. The dissolved solids concentration commonly is called the water's salinity and is classified as follows: fresh, 0-1,000 mg/L; slightly saline, 1,000-3,000 mg/L; moderately saline, 3,000-10,000 mg/L; very saline, 10,000-35,000 mg/L; and briny, more than 35,000 mg/L.

4 The Porter-Cologne Water Quality Control Act gave the SWRCB authority over water quality within California and established nine regional water quality control boards. The regional boards prepare water quality plans (called basin plans) for their region that identify the beneficial uses of water to be protected, establish water quality objectives (limits or levels of water constituents based on both state and federal laws), and define a program to implement water quality objectives.

warm freshwater fishery. The beneficial uses designated by the Los Angeles Regional Water Quality Control Board (LARWQCB) for Castaic and Pyramid lakes include municipal, agricultural, industrial, groundwater recharge, freshwater replenishment of surface waters to maintain quality or flow, power, recreational activities, warm and cold water fisheries, wildlife habitat and fish spawning, and rare species habitat (LARWQCB 1994).

3.15.1.2 *Wheeler Ridge-Maricopa Water Storage District*

Facilities and District Areas

WRMWSD receives SWP water through 16 separate turnouts along the California Aqueduct via KCWA's Water Supply Contract with DWR. The WRMWSD distribution system consists of a series of pipelines, pumping plants, canals, and related facilities to deliver surface water from the California Aqueduct to approximately 72,000 acres of contract lands within the district. Contract lands are those lands within the district where landowners have executed long-term contracts with WRMWSD for the delivery of surface water, including SWP water, by the WRMWSD distribution system. These contract lands rely mainly on surface water to meet water demands, although many of the landowners use groundwater to supplement supplies when adequate surface water supplies are not available. Non-contract lands, those lands that do not hold long-term contracts for surface water, rely mainly on groundwater supplies to meet water demands. Surface water, including SWP water when available, can be delivered to certain non-contract lands within the district (generally those lands that historically have held contracts) via the existing WRMWSD distribution system.

Owners of contract lands pay an annual fixed cost based on the amount of land specified in the contract and annual variable costs based on the amount of water received by a particular contract land holder. Contract holders are required to pay the annual fixed cost regardless of the amount of water delivered to their land. Because contract holders can use local groundwater to irrigate their lands, the decision by individual landowners to enter into a contract (or likewise reduce a contract amount or cancel a contract), or to order surface water from WRMWSD instead of using local groundwater is predominantly an economic decision.

WRMWSD delivers untreated surface water predominantly for agricultural uses. Water delivered by WRMWSD is not intended for municipal or potable use without additional treatment.

Water Supply

WRMWSD obtains its water supplies from the SWP, other surface water sources, and groundwater sources, and delivers water to agricultural and industrial users within the district. WRMWSD also participates in a variety of other water management activities, including groundwater banking programs outside of the district and other in-lieu and direct groundwater recharge programs within the district.

LOCAL SURFACE WATER

WRMWSD is located along Wheeler Ridge and east of the Tejon Hills in southern Kern County. Sandy, Bitterwater, Santiago, Pleitito, Pleito, Salt, Tecuya, Grapevine, Pastoria, Tunis, El Paso,

Liveoak, and Caparell creeks flow from the south into the district; and Tejon Creek flows from the east into the district. Most of these creeks are intermittent and do not provide substantial water for irrigation or conveyance for irrigation water. Floods occur along the creeks and in areas where sheetflow may occur during high intensity rainfall (KCWA 1998).

The water quality of most of the streams entering the district is generally suitable for irrigation. Because these streams are ephemeral, however, they cannot be used as a reliable source of irrigation water supply for large-scale irrigation (KCWA 1998).

Groundwater

Deep groundwater wells in the district initially were drilled in the mid-1940s. Over the next 20 years, groundwater was the primary water supply in the southern Kern County area. As a result, the groundwater levels declined by 150 to 200 feet (Bookman-Edmonston Engineering, Inc. [BE] 1995). In the late 1960s, the annual groundwater overdraft was estimated to be about 112,000 AF (BE 1995). Use of SWP water has allowed groundwater levels to rise to levels equal to, or above, those observed prior to the availability of SWP water (BE 1995).

The San Joaquin Valley is underlain by a large aquifer system generally referred to as the San Joaquin Valley Groundwater Basin. DWR has divided the San Joaquin Valley Groundwater Basin into smaller groundwater basins based on hydrologic differences (such as water quality and rate of movement of water through the basin). The Kern County Groundwater Basin is the part of the San Joaquin Valley Groundwater Basin that underlies the district. The basin is bounded on the north by the Kern County line and the Tule Groundwater Basin, on the east and southeast by the granitic bedrock of the Sierra Nevada and Tehachapi Mountain ranges, and on the west and southwest by the marine sediments of the San Emigdio and Coast Mountain ranges (DWR 2003a). The surface area of the basin is approximately 1.945 million acres, or 3,040 square miles (DWR 2003a). Total water in storage within the basin is estimated to be 40 million AF, and the dewatered (available) aquifer storage is estimated to be 10 million AF (DWR 2003a). Recharge to the basin results from the seepage of surface water from local streams along the eastern extent of the basin and the Kern River, as well as seepage of surface water from agriculture-related land uses, which is the largest contributor to recharge (DWR 2003a).

The White Wolf Groundwater Basin, a sub-basin to the Kern County Groundwater Basin, underlies the eastern portion of the district. The White Wolf sub-basin is separated from the remainder of the Kern County Groundwater Basin to the north by the White Wolf Fault, and to the southwest by the Springs Fault. The White Wolf Fault historically has been considered a barrier to movement of groundwater from the White Wolf sub-basin to the rest of the Kern County basin (BE 1967; BE 1975). Recent studies have indicated that the White Wolf Fault may act as only a partial barrier to groundwater flow, and only when the aquifer is stressed by pumping (Hagan 2001). The surface area of the White Wolf basin is approximately 52,000 acres (BE 1975). The volume of groundwater in storage has been estimated to be 2.5 million AF (BE 1975). Recharge to the White Wolf basin results from seepage of surface water from local streams and seepage of surface water from agriculture-related land uses.

Imported Water

KCWA holds the Water Supply Contract through which WRMWSD receives SWP water. KCWA's SWP Table A Amount in 2003 was 1,000,949 AF, and was 1,087,730 AF in 1998. This reduction in Table A Amount was due to several Table A Amount transfers KCWA completed with SWP Contractors since early 1999 consistent with the terms of the Monterey Amendment, including the 41,000 AF transferred to CLWA that is the subject of this EIR. WRMWSD's contract with KCWA included 263,200 AF of SWP Table A Amount in 1971[5]. This quantity was reduced to 251,370 AF in 1988, to 238,088 AF in 1996, and to 197,088 AF in 2000, after the Project was implemented.

Table 3.15-5 summarizes SWP Table A deliveries from 1990 through 2001. From 1990 to 1999 (before the Project was implemented), the SWP deliveries by WRMWSD averaged about 137,360 AF, with a minimum of zero AF in 1991 to a maximum of about 198,100 AF in 1997.

Other Water Management Actions

WRMWSD participates in a variety of other water management actions, including groundwater banking both within and outside of the district. Through its groundwater banking program, WRMWSD stores water when available and draws on that water in dry years to reduce shortages. WRMWSD's other water management actions consist of the following: ongoing in-lieu groundwater recharge within the district through delivery of surface water, when available, to non-contract lands; groundwater wells available to WRMWSD starting in 1992 and additional wells developed or acquired by WRMWSD since 1992; participation in the Kern Water Bank beginning in 1995; participation in the Pioneer Groundwater Banking Project initiated in 1997; and participation in the Berrenda Mesa Project beginning in 1999. These water management actions provide water supplies above and beyond the additional supplies that may be obtained from purchases and exchanges. In 1998, these water management actions could have supplied WRMWSD with an additional 59,500 AF, and by 2001 the amount had increased to over 88,000 AF. In 2002, the amount available from these other water management actions was over 106,000 AF.

Table 3.15-5 summarizes deliveries of water from these other water management actions from 1990 to 2001.

Total Supply

Table 3.15-5 summarizes the annual amount of SWP supply and other water supplies (such as the User Input Program[6], other transfers and exchanges, and other water management actions) available to WRMWSD, and the amount of water delivered within the district from 1990 to 2001. As identified in this table, except for 1990 and 1991, both drought years, WRMWSD's

5 As discussed in Chapter 1, the term Table A Amount in connection to WRMWSD is used for brevity. The parallel term used in the KCWA—WRMWSD member unit contract is "Contract Entitlement," sometimes referred to as "Table 1 Entitlement."

6 The User Input Program allows water users within the district to deliver water into the WRMWSD distribution system. The water user is then credited with an equal amount of water, less any losses, to be delivered to the user by WRMWSD within the same calendar year.

Table 3.15-5. Summary of Annual SWP and Other Water Supply to WRMWSD and Delivered within the District, 1990 to 2001
(all values in AF except percentages)

Year	Water Supply					Water Delivered				Table A Water Delivered as a Percent of Table A Supply	Total Delivered as a Percent of Total Supply
	SWP Table A Amount (AF)	SWP Allocation Percent[1]	SWP Table A Water Supply[2] (a)	Other Water Supply[3] (b)	Total Supply (a + b)	SWP Table A Water Delivered (c)	Carryover Water Delivered (d)	Other Water Delivered[3] (e)	Total Delivered (c + d + e)		
1990	251,370	50%	126,535	60,888	187,423	126,544	40,884	20,004	187,432	100%	100%
1991	251,370	0%	0	66,656	66,656	0	0	66,656	66,656	N/A[4]	100%
1992	251,370	45%	113,117	18,431	131,548	107,504	1,382	17,048	125,934	95%	96%
1993	251,370	100%	251,370	22,774	274,144	133,600	10,370	2,555	146,525	53%	53%
1994	251,370	53%	133,226	50,544	183,770	132,316	0	28,248	160,564	99%	87%
1995	251,370	100%	251,370	49,614	300,984	161,024	0	1,114	162,138	64%	54%
1996	238,088	100%	238,088	60,244	298,332	191,279	11,319	425	203,023	80%	68%
1997	238,088	100%	238,088	59,740	297,828	198,065	0	240	198,305	83%	67%
1998	238,088	100%	238,088	63,111	301,199	145,605	949	2,738	149,292	61%	50%
1999	238,088	100%	238,088	66,162	304,250	177,702	0	4,868	182,570	75%	60%
2000	197,088	90%	177,379	77,013	254,392	165,090	2,579	16,260	183,929	93%	72%
2001	197,088	39%	76,864	114,025	190,889	73,247	3,441	61,640	138,508	96%	73%

1. SWP allocation (i.e., the percent of Table A Amount that each Contractor could have received based on that year's supply availability and Contractor requests), as determined by DWR for the year. Based on agricultural Table A allocations for years prior to implementation of the Monterey Amendment in 1996.
2. SWP Table A water available equals SWP Table A Amount multiplied by the SWP allocation percentage.
3. Other water includes the following: SWP surplus water (unscheduled surplus water/Article 21 water); SWP Carryover water (refer to Table 3.15-3); WRMWSD wells; Blanca Rosa Improvement District wells; User Input Program water; Kern Water Bank; Pioneer Groundwater Banking Project; Berrenda Mesa Project; and other miscellaneous water supplies such as water purchased from the Drought Water Bank, and other water transfers and purchases. Of these sources, Article 21 water, Carryover water, other miscellaneous water supplies, and to some extent User Input Program water is not available for use in future years.
4. SWP water (Table A or surplus) was not available to Agricultural Contractors in 1991; therefore, no SWP water was delivered in this year.

water supply (both SWP Table A supply and total supply) has been greater than the amount of water delivered within the district.

Water Demand

A variety of factors, including the cost and availability of different water sources, the anticipated crop market value, anticipated or existing crop subsidies, and other factors (such as labor cost, regulation of the use of certain chemicals, etc.) are considered by farmers in the determination to plant or fallow fields, and to plant certain crops. Therefore, water demands within the district can vary substantially from year to year depending on irrigated acreage and the types of crops grown. Refer to section 3.2, Agricultural Resources for further discussion of crop types and irrigated acres within the district. In addition, demands within the district can vary depending on local hydrologic and climatic conditions (e.g., amount and timing of rainfall and local temperatures).

WRMWSD has estimated that under favorable economic conditions, demands within the contract lands are approximately 180,000 to 190,000 AF (personal communication, W. Taube 2002). In only four years from 1990 to 1999 (prior to the Project), did WRMWSD deliver greater than 180,000 AF of SWP water, indicating that favorable economic conditions occurred approximately 40 percent of the time. Demands within the district vary from year to year depending on agricultural economic conditions and hydrologic conditions (amount and timing of local rainfall), but demands within the district are not anticipated to materially increase in the future because the suitable agricultural lands within the district are already in agricultural production, and because WRMWSD does not provide potable water.

Water Quality

WRMWSD is within the jurisdiction of the CVRWQCB, Region 5c. Within the district, there are no impaired water bodies or established Total Maximum Daily Load (TMDL) programs[7] (CVRWQCB 1995, SWRCB 1998). Local surface water is of generally good quality. Water quality of imported supplies is primarily dependent on the SWP water quality, which is discussed above.

Groundwater quality varies across the district, and there are portions of the district in which groundwater is not used due to poor quality. These areas are generally located in the most westerly portions of the district. Within the district, the Kern County Groundwater Basin has TDS concentrations that generally increase from east to west, with concentrations ranging from 300 to 2,600 milligrams per liter (mg/L) (BE 1995). TDS concentrations within the White Wolf

7 The federal Clean Water Act requires states to designate appropriate water uses to be protected and directs states to set water quality criteria based on these uses (United States Environmental Protection Agency [EPA] 2000a). Under section 303(d) of the Clean Water Act, states, territories, and authorized Indian tribes are required to submit lists to the EPA detailing water bodies for which existing pollution controls are insufficient to attain or maintain water quality standards. After submitting the list of "impaired waters" to the EPA, states must develop a TMDL plan to limit excess pollution. A TMDL is a number that represents the assimilative capacity of water for a particular pollutant, or the amount of a particular pollutant that the waterbody can receive without impacting its beneficial uses. TMDL plan implementation can be accomplished through revised permit requirements (for point source contaminants) and through implementation of Best Management Practices (EPA 1999).

Groundwater Basin range from 300 to 700 mg/L in the eastern two-thirds of the basin and 1,000 to 3,500 mg/L in the western one-third of the basin (BE 1995).

3.15.1.3 *Castaic Lake Water Agency*

CLWA is the wholesale water supplier for the Santa Clarita Valley. In addition, CLWA's Santa Clarita Water Division is one of four retail water purveyors within the Santa Clarita Valley. The other three retailers are Los Angeles County Waterworks District #36, Newhall County Water District and Valencia Water Company.

Facilities

CLWA receives SWP water through the terminus of the West Branch of the California Aqueduct at Castaic Lake. Surface water supplies (whether derived from local or imported water supplies) require treatment (filtration and disinfection) prior to distribution. SWP water from Castaic Lake is treated at the ESFP and RVWTP (both owned and operated by CLWA), and is distributed to the four water retailers through a system of pipelines.

The RVWTP is planned for future expansion from its current 30 mgd treatment capacity, to 60 mgd and eventually to 90 mgd as demands for treated water increase. This expansion was programmatically evaluated in CLWA's Capital Program Final EIR (CLWA 1988). In April 2003, CLWA approved an upgrade of treatment technology and a capacity expansion at the ESFP from 33.6 mgd to 56 mgd. The combined capacity of the two treatment plants currently is approximately 63.6 mgd. When the ESFP is expanded, the total treatment capacity will increase to about 86 mgd. Without the Project, CLWA's Water Supply Contract provides for a delivery maximum of 99 cfs for its 54,200 AF of Table A Amount. This delivery rate is approximately 65 mgd, or similar to the current treatment capacity, and would yield a maximum monthly delivery of approximately 6,000 AF. With the Project, CLWA's contractual delivery limit increases to 150 cfs (or approximately 98 mgd, yielding a maximum of approximately 9,000 AF per month) for the 95,200 AF of Table A Amount.

Water Supply

The current water supply for the Santa Clarita Valley is derived from both local and imported sources. The principal components of this supply are groundwater from the Alluvial Aquifer, groundwater from the Saugus Formation, and imported water from the SWP. A variety of future water sources (including local recycled[8] water, desalted ocean water, increased Saugus Formation production, conjunctive use of local or non-local groundwater basins, and other imported water sources) could be developed to supply future development planned for the CLWA service area.

CLWA completed an analysis of its water supply as part of the UWMP (CLWA 2000). Prior to that analysis, CLWA had determined that it could reliably depend on the SWP to deliver about half of its Table A Amount (about a 25,000 AF supply vs. 54,200 AF of Table A) in any year (CLWA 1996). The UWMP is scheduled to be updated in 2005.

8 Initial deliveries of recycled water commenced in 2003.

Table 3.15-6 summarizes water supplies available to meet demands in the CLWA service area in 1998, prior to the Project. SWP supplies identified in the table are based on results from DWR's SWP operations model, DWRSIM (discussed in section 3.15.2.2), with SWP water supplies allocated among Contractors under the Water Supply Contract provisions then in effect (i.e., based on the Monterey Amendment provisions). The table displays water supplies available under various hydrologic conditions.

Table 3.15-6. 1998 Water Supplies for the CLWA Service Area
(all values in AF)

Hydrologic Condition[1]	SWP Supplies		Existing Local Supplies		*Total*
	Table A[2]	*SWP Flexible Storage*[3]	*Alluvial Aquifer*	*Saugus Formation*	
Average Year	46,500	0	35,000	11,000	**92,500**
Single Dry Year	12,100	4,680	32,500	15,000	**64,280**
Multiple Dry Year Period	24,000	1,170	32,500	15,000	**72,670**

1. The average year supply is the average amount of water available based on DWRSIM model results over its entire period of hydrologic record. The single dry year supply is the supply available in the single year with the lowest total SWP deliveries based on DWRSIM model results (1977). Multiple dry year period supply is the average amount of water available over the four consecutive drought years of 1988 through 1991 based on DWRSIM model results. (See section 3.15.2.2).
2. Values based on CLWA's Table A Amount in 1998 (prior to the Project) of 54,200 AF, and percentages for Table A deliveries based on DWR's DWRSIM SWP operations model (discussed in section 3.15.2.2).
3. CLWA may withdraw up to about 4,680 AF of water from Castaic Lake as "flexible storage." It is assumed that CLWA would use this supply only in drier years, with the entire amount used in the one single dry year. For the multiple dry year, it is assumed that the entire amount would be used during the four-year period, or an annual average of 1,170 AF.

Table 3.15-7 summarizes existing (2002) water supplies available to meet demands in the CLWA service area, including the Project. SWP supplies are based on the data presented in DWR's SWP Delivery Reliability Report, with SWP water supplies allocated among Contractors under the Water Supply Contract provisions currently in effect (i.e., based on the Monterey Amendment provisions). The table displays water supplies available under various hydrologic conditions. In 2002, CLWA was able to store some of its allocated SWP Table A supply on a short-term basis (10 years or less) pursuant to a groundwater banking agreement with the Semitropic Water Storage District. CLWA may withdraw up to 21,600 AF within 10 years. Similar to 2002, in February 2004, CLWA was again able to store up to 35,000 AF of its allocated 2003 SWP Table A supply on a short-term basis (10 years or less) pursuant to a groundwater banking agreement with the Semitropic Water Storage District. CLWA may withdraw up to 31,500 AF within 10 years. In addition to the supplies identified in Tables 3.15-6 and 3.15-7, CLWA may obtain additional surface supplies on a limited basis when surplus water is available within the SWP system, along with various other SWP and non-SWP purchases and exchanges.

Local Surface Water

The primary drainage course in the CLWA service area is the Santa Clara River. Principal tributaries to the Santa Clara River include creeks flowing from Mint, Bouquet, San Francisquito, Castaic Creek, Oak Spring, Sand, and Potrero canyons. Water flow in the stream

Table 3.15-7. Existing Water Supplies for the CLWA Service Area

(all values in AF)

Hydrologic Condition[1]	SWP Supplies			Existing Local Supplies		Total
	Table A[2]	SWP Flexible Storage[3]	Semitropic Storage[4]	Alluvial Aquifer	Saugus Formation	
Average Year	68,300	0	0	35,000	11,000	114,300
Single Dry Year	18,600	4,680	7,200	32,500	15,000	77,980
Multiple Dry Year Period	34,300	1,170	5,400	32,500	15,000	88,370

1. The average year supply is the average amount of water available based on DWRSIM model results over its entire period of hydrologic record. The single dry year supply is the supply available in the single year with the lowest total SWP deliveries based on DWRSIM model results (1977). Multiple dry year period supply is the average amount of water available over the four consecutive drought years of 1988 through 1991 based on DWRSIM model results. (See section 3.15.2.2).
2. Values based on current Table A Amount of 95,200 AF (which includes the Project), and percentages for Table A deliveries from DWR's SWP Delivery Reliability Report (DWR 2003b).
3. CLWA may withdraw up to about 4,680 AF of water from Castaic Lake as "flexible storage." It is assumed that CLWA would use this supply only in drier years, with the entire amount used in the one single dry year. For the multiple dry year, it is assumed that the entire amount would be used during the four-year period, or an annual average of 1,170 AF.
4. In 2002, CLWA was able to store some if its allocated SWP Table A supply on a short-term basis (10 years or less) under a groundwater banking agreement with the Semitropic Water Storage District. Under this agreement, CLWA stored 24,000 AF of SWP water, and after consideration for losses, may withdraw up to 21,600 AF within 10 years. It is assumed that CLWA could expect to withdraw up to 1/3 of this amount in the single dry year, and the entire amount would be used during the four-year dry period. It is assumed that CLWA would only use this supply in drier years.

canyons and the upper Santa Clara River is ephemeral, and diminishes rapidly after most rainfall events. Surface water resources include the Santa Clara River and Castaic Lake.

Primary flood hazard areas occur in and along natural drainage channels, such as the Santa Clara River and its tributaries, and in areas where sheetflow may occur during high intensity rainfall (CLWA 1988, CLWA 1998a). CLWA does not utilize local surface water as a water supply, although landholders within the service area may use runoff from these natural drainages as a water supply.

Groundwater

The existing local water supply in the CLWA service area is groundwater extracted from the Alluvial Aquifer and from the underlying Saugus Formation. Historically, groundwater has been the primary source of water in the Santa Clarita Valley. Since 1980, local groundwater supplies have been supplemented with imported water from the SWP.

Although the Alluvial Aquifer is the smaller of the two-aquifer systems as measured by storage capacity, most water wells within the CLWA service area are drilled into this aquifer. In his original assessment of the Alluvial Aquifer, Slade (1986) estimated the practical perennial yield of the Alluvial Aquifer to be 31,600 AFY to 32,600 AFY. The total annual groundwater production from the Alluvial Aquifer over the last 10 years (urban and agricultural production) has averaged approximately 35,000 AFY, about 10 percent higher than the "practical perennial yield" without any evidence of undesirable conditions that might be an indication of aquifer

overdraft (Slade 2002). Slade (2002) suggested that the primary reason that the Alluvial Aquifer has been able to supply groundwater in volumes that are in excess of its previously estimated perennial yield is due to the increase in imports of SWP water by CLWA. For example, most of the historical period on which Slade's original work was based predated the importation of SWP water. Based on discharge records published by the LARWQCB (2002), approximately half of this additional water is returned to the Alluvial Aquifer in the form of discharge from the two wastewater reclamation plants located along the Santa Clara River. Additionally, percolation of SWP water from various municipal and industrial uses (such as landscape irrigation) also contributed to recharge of the Alluvial Aquifer.

In this recent updated report on the groundwater basin, Slade (2002) identified the operational yield of the Alluvial Aquifer to be about 30,000 to 40,000 AF in normal weather years, and 30,000 to 35,000 AF in dry years. In updating his original (1986) analysis of the yield of the Alluvium, Slade recognized that the analytical methodology employed in his original work was no longer applicable, primarily due to a combination of stable groundwater levels and storage, and the progressive changes in the hydrology of the basin as a result of the increasing importation of supplemental water (from the SWP). In his updated analysis, Slade proposed that the concept of operational yield of the basin was more applicable to current conditions in the basin since it allows fluctuations in year-to-year yield in response to fluctuating hydrologic conditions, yet protects the renewability of the groundwater by retaining longer-term pumping within the basin's perennial yield on an average basis. The normal and dry-year ranges of basin yield were based by Slade on that operational yield concept.

Recharge amounts are highly variable depending on annual precipitation, with documented annual water level recoveries of 70 feet or more during wet years that follow dry periods. Multi-year dry periods have in the past resulted in water level decreases of as much as 100 feet from the beginning to the end of the multi-year drought period, particularly in Soledad Canyon. However, groundwater levels have remained very stable over time (and near the ground surface) throughout the western part of the basin, generally west of Bouquet Canyon. This relative stability occurs because the regional discharge zone for the valley's groundwater resources is the alluvium west of Interstate 5. In this area, the Saugus Formation discharges to the alluvium, which in turn discharges to the Santa Clara River. The discharge zone is present in this area because of the east-west movement of groundwater and the bedrock materials that form the western margin of the basin aquifer systems at Blue Cut (just to the west of the Los Angeles County / Ventura County line). The shallow and stable nature of the groundwater levels in this area are further supported by a continual supply of recharge water from the treatment plant discharges described above.

From 1980 to 2002, groundwater extraction from the Alluvial Aquifer for urban uses ranged from approximately 8,700 to 27,200 AFY, while total extraction for all uses ranged between 20,300 and 43,400 AFY. Average extractions from the Alluvial Aquifer during this same period were approximately 17,500 AFY for urban uses and 30,400 AFY for all uses (SCVWP 2002). The latter remains well within all historical estimates of the yield of the Alluvial Aquifer. The use of one well in the Alluvial Aquifer has been suspended due to the detection of perchlorate. (Groundwater quality in the Alluvial Aquifer is discussed in more detail under the subheading Groundwater Quality.)

The Saugus Formation contains much greater quantities of groundwater than the Alluvial Aquifer. In his original assessment of the Saugus Formation, Slade (1988) estimated that approximately 1.41 million AF of potentially useable groundwater was present from depths of 500 to 2,500 feet in the Saugus Formation. More recent information on the thickness of the alluvium and the degree of potential drawdown interference between adjacent Saugus Formation and Alluvial Aquifer wells has supported a re-calculation of groundwater in storage in the Saugus Formation to approximately 1.65 million AF (Slade 2002).

The principal source of recharge to the Saugus Formation is precipitation on exposed outcrops and direct infiltration from the overlying alluvium. In his initial assessment of the Saugus Formation, Slade (1988) estimated the combined potential recharge to the Saugus Formation from these two sources to be from 20,000 to 22,000 AFY in wet periods, and from 11,00 to 13,000 AFY in dry periods. The Saugus Formation has supplied about 7,500 to 15,000 AF in normal weather years, and 11,000 to 15,000 AF in dry years (CLWA 2000). No long-term continuous or permanent decline in either water levels or the amount of groundwater in storage has occurred under this historical range of pumping (Slade, 2002). Based on the amount of water in storage and the historic aquifer performance, Slade (2002) identified that production from the Saugus Formation for dry period water supply could be increased from 15,000 to 20,000 AFY, and ultimately to 35,000 AFY if dry conditions continue. The increase to 35,000 AFY would be temporary and would need to return to, or be reduced below, the historical range of 7,500 to 15,000 AFY once rainfall patterns returned to normal in order to recharge, or replenish, storage and avoid long-term adverse effects to the aquifer.

From 1980 to 2002, groundwater extractions from the Saugus Formation for urban uses ranged between approximately 2,700 and 14,400 AFY, while total extraction for all uses ranged between about 3,700 and 14,900 AFY. Average extraction from the Saugus Formation during this same period has been approximately 6,200 AFY for urban uses and 6,800 AFY for all uses (SCVWP 2002); these values remain well within all historical estimates of the yield or recharge potential of the Saugus Formation. The use of four wells in the Saugus Formation has been suspended due to the detection of perchlorate. (Groundwater quality in the Saugus Formation is discussed in more detail under the subheading Groundwater Quality.)

There are numerous wells in the Saugus Formation, other than the wells that were voluntarily shut down due to perchlorate contamination. Additionally, other Saugus wells are planned for construction, including those included in CLWA's Capital Improvements Program. If operated continuously during the year, the wells not subject to perchlorate contamination have the capability to produce approximately 21,000 AFY (personal communication, L. Takaichi 2004). However, a more realistic production capability is 15,000 AFY due to periodic shutdown for maintenance, monitoring, or storage limitations (personal communication, L. Takaichi 2004). The current groundwater production capability from the Saugus Formation is estimated to be 5,000 AFY during normal years but could reach 15,000 AFY during dry periods or other periods of need (personal communication, L. Takaichi 2004). These capabilities will increase as additional production wells in the Saugus Formation are completed and a response action to perchlorate contamination is implemented.

With regard to the impacts of perchlorate on the water supply capacity of several wells as noted above, field studies and groundwater modeling activities are in progress to evaluate how best

to hydraulically contain the portion of the aquifer system where production wells have been shut down, while simultaneously preventing perchlorate movement to currently unimpacted areas. The field studies have included the installation and sampling of monitoring wells at multiple depths and locations on and around the Whittaker-Bermite site, the most likely source of perchlorate; water level monitoring in these wells; aquifer testing of two unimpacted water supply wells; and groundwater velocity testing in alluvial monitoring wells located between the site and the Santa Clara River. These studies have helped the Purveyors and the Whittaker Corporation further refine the current understanding of groundwater flow patterns in specific areas on and near the site (such as along the Holser Fault). This information has been incorporated into a regional groundwater flow model that has been developed by the Purveyors and whose calibration and construction was recently reviewed and approved by the DTSC. The model is being used to identify a pumping scheme that would meet the objectives of restoring the lost water supply from the impacted wells (with wellhead treatment) while simultaneously containing perchlorate and hydraulically limiting its movement downgradient to unimpacted wells and other portions of the aquifer system where new water supply wells might be constructed. The modeling analysis accounts not only for the pumping of impacted wells, but also (a) the UWMP's pumping plan for unimpacted wells throughout the Santa Clarita Valley and (b) the significant year-to-year variation in local hydrology (especially groundwater recharge) that occurs in the Valley (CH2MHill 2004). The modeling simulations will be used to guide selection of a final pumping plan for the impacted Alluvial Aquifer well and the impacted Saugus Formation wells. The selection of a final pumping plan will be made jointly by the Purveyors and the Whittaker Corporation, with regulatory oversight and permitting performed by CA DHS with technical support from DTSC. (Groundwater quality and perchlorate are discussed in more detail under the subheading Groundwater Quality.)

Imported Water

CLWA provides imported water supplies via the SWP to the CLWA service area. CLWA facilities and supplies of SWP water are described above.

SWP deliveries to CLWA from 1990 through 2002 are provided in Table 3.15-8. SWP supplies supplement local water sources and are used to meet the municipal and industrial demand of the region. From 1990 to 1999 (prior to implementation of the Project), CLWA's use of its SWP supply averaged approximately 18,000 AF. This low level of SWP delivery (relative to CLWA's Table A Amount) is a reflection of generally low demand in the CLWA service area for this water during this period and is not due to limited SWP supplies. With the exception of 1991, during 1990 to 1999 CLWA received adequate SWP supplies to meet its demands. As is shown on Table 3.15-8, SWP deliveries to CLWA generally have increased over the past decade because demands within the service area have risen during this time.

Total Supply

Table 3.15-8 shows total water deliveries in the CLWA service area from 1990 through 2002. These include deliveries by the four municipal water purveyors, along with groundwater pumped by agriculture and miscellaneous uses. Agriculture and miscellaneous uses include irrigated agriculture, landscape irrigation, golf course irrigation, and other miscellaneous uses within the service area.

Table 3.15-8. Summary of Annual SWP and Local Groundwater Use within the CLWA Service Area, 1990 to 2002

Year	SWP Table A Amount (AF)	SWP Allocation[1] (Percent)	SWP Deliveries (AF)	Local Groundwater Deliveries[2] (AF)	Agriculture and Miscellaneous Uses[3] (AF)	Total (AF)
1990	41,500	100	21,600	21,500	11,280	54,380
1991	54,200	30	7,970	31,800	10,280	50,050
1992	54,200	45	14,900	27,300	12,150	54,350
1993	54,200	100	13,840	30,000	11,220	55,060
1994	54,200	53	14,700	31,600	13,870	60,170
1995	54,200	100	17,000	28,700	14,350	60,050
1996	54,200	100	18,870	32,100	15,350	66,320
1997	54,200	100	23,220	32,000	16,390	71,610
1998	54,200	100	20,270	28,600	13,610	62,480
1999	54,200	100	27,300	30,000	17,140	74,440
2000	95,200	100	32,580	28,400	15,320	76,300
2001	95,200	39	35,370	25,320	16,090	76,780
2002	95,200	70	41,770	26,460	16,810	85,040

Source: SCVWP 2003.

1. SWP allocation (i.e. the percent of Table A Amount that each Contractor could have received based on that year's supply availability and Contractor requests), as determined by DWR for the year. The values shown are M&I Table A allocation percentages. In 1991, the Devil's Den Water District permanently transferred 12,700 AF of agricultural Table A Amount to CLWA. For years prior to implementation of the Monterey Amendment in 1996, agricultural Table A allocations were as follows: 0 percent in 1991; 45 percent in 1992; 100 percent in 1993; 53 percent in 1994; and 100 percent in 1995.
2. Groundwater deliveries by municipal water purveyors within the CLWA service area.
3. Includes groundwater pumped by, and SWP water delivered to, agricultural and miscellaneous uses within the CLWA service area. SWP deliveries to agricultural and miscellaneous uses within the CLWA service area occurred from 1992 to 2000, with a maximum of approximately 1,070 AF delivered in 1997.

Water Demand

In 1998, the total water demand within the CLWA service area in 2010 was projected to be approximately 106,300 AF. Table 3.15-9 provides CLWA's projected total future water demands in years of average local precipitation based on the UWMP, the most recent future water demand projections by CLWA. CLWA's demands vary from year-to-year depending on local hydrologic and meteorologic conditions, with demands generally increasing in years of below average local precipitation and decreasing in years of above average local precipitation. Based on various planning factors, CLWA's average year demand is expected to increase to approximately 75,100 AF in 2005 and 102,500 AF by 2020, or approximately 1,370 AFY (CLWA 2000). This is consistent with the annual average increase in CLWA's SWP deliveries from 1990 to 2001 of approximately 1,150 AFY (SCVWP 2002).

Table 3.15-9. CLWA's Projected Total Water Demand in Average Hydrologic Years
(AFY; reductions in parenthesis)

	2005	2010	2015	2020
M&I	66,600	77,700	90,900	106,000
Other Demand[1]	15,100	12,400	9,800	7,100
Subtotal	*81,700*	*90,100*	*100,700*	*113,100*
Projected Conservation	(6,600)	(7,700)	(9,100)	(10,600)
Total	**75,100**	**82,400**	**91,600**	**102,500**

Source: CLWA 2000.
1. Includes irrigated agriculture and miscellaneous uses.

Because growth has exceeded that projected when the UWMP was prepared in 2000, actual demand exceeds projected demand. The UWMP is scheduled to be updated in 2005. This EIR uses the best available data. New UWMP data is not available at this time.

In 2001, CLWA signed the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) on behalf of the CLWA service area, as recommended in the UWMP. By signing the MOU, CLWA became a member of the California Urban Water Conservation Council (CUWCC) and pledged to implement all cost-effective Best Management Practices (BMPs) for water conservation. CLWA has implemented 11 of the 14 BMPs recommended by CUWCC. CLWA has estimated that conservation measures within the service area can reduce total water demands by 6,600 AF in 2005 and up to 10,600 AF in 2020, or about 10 percent of demand.

Water Quality

With regard to water quality, the main regulatory driver for CLWA is the Safe Drinking Water Act[9], because CLWA, as a wholesale water purveyor, must deliver water that meets the applicable drinking water standards.

EXISTING WATER QUALITY

Existing water quality conditions for urban water uses in the CLWA service area are documented in the Santa Clarita Valley 2002 Water Quality Report (CLWA 2002). That report provides the cumulative results of thousands of water quality tests performed in the Santa Clarita Valley area on CLWA's and the local purveyors' water supplies. Table 3.15-10 provides basic water quality data for CLWA's drinking water supplies, which includes test results from both SWP water and groundwater.

9 The Safe Drinking Water Act is intended to protect public health by regulating the nation's public drinking water supply, and requires a variety of actions to protect drinking water and its sources. The Act authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water.

Table 3.15-10. CLWA Drinking Water Quality Summary

Constituent[1]	*MCL*[2]	*Typical Value*	*Range*
Turbidity, nephelometric turbidity Unit (NTU)	5	0.08	0.05-0.40
Chloride[3], mg/L	250	86	65-112
Nitrate (as NO3), mg/L	45	2-2.8	2.0-2.8
Fluoride, mg/L	2	0.15	0.12-0.18
Trihalomethanes (THMs)	100	86	65-112
Haloacetic Acids (HAA5)	60	34	16-81
Coliform, percent positive samples	5	0	0-2
Sulfates, mg/L	250	52	38-64
TDS, mg/L	500	314	--
pH	None	7.86	7.5-8.2

Source: CLWA 2002b.

1. Unless stated otherwise, all tests were run in 2001.
2. A MCL (Maximum Contaminant Level) is the maximum permissible level of a contaminant in drinking water that is delivered to any user of a public water system.
3. The chloride standard is a Secondary Standard. Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. States may choose to adopt them as enforceable standards, however.

Local Surface Water Quality

In accordance with the Porter-Cologne Act and the Clean Water Act, the LARWQCB developed the Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), as amended (LARWQCB 1994). The Basin Plan addresses five constituents of concern that are relevant for inland surface water and groundwater (TDS, sulfate, chloride, boron, and nitrogen) and considers local hydrology, land use, population, sensitive environmental resources, and established water quality objectives for each of the watersheds, including the Santa Clara River. New and proposed water quality objectives for the Santa Clara River watershed have either been established or are currently undergoing discussion for future approval and/or consideration. Within the Santa Clara River watershed, chlorides have been prioritized for further study, with higher priority given to nutrients. Other constituents are currently (2003) not prioritized.

On February 4, 2003, the SWRCB adopted the 2002 Clean Water Act Section 303(d) List of Water Quality Limited Segments for Surface Waters in California (referred to herein as "Section 303(d) List") (SWRCB 2003b). This list identifies water quality-limited water bodies and pollutants of concern for which a TMDL must be developed. Reach 3[10] of the Santa Clara River (Freeman Diversion to A Street) was listed as impaired for ammonia, chloride, and TDS. Reach 7 (Blue Cut near the Los Angeles/Ventura County line to West Pier Hwy 99 Bridge) was listed as

10 The Santa Clara River is divided into nine reaches for management purposes. Reach 1 begins at the Santa Clara River Estuary at the Pacific Ocean. Reach numbers increase upstream.

impaired for chloride, high coliform count, nitrite and nitrate, and delisted for ammonia. Reach 8 (West Pier Hwy 99 to Bouquet Canyon Road) was listed as impaired for chloride and for high coliform count. Lastly, Reach 9 (Bouquet Canyon Road to above Lang Gaging Station) was listed as impaired for high coliform count.

Chlorides – In recent years, high concentrations of chloride have been measured in waters of the Santa Clara River watershed. These concentrations are primarily due to various types of loading during beneficial water uses, including agricultural uses (irrigation and leaching); commercial uses; domestic uses; and water treatment (e.g., water softeners) (LACSD 2002a). In addition to loading from urban runoff, imported water in certain year types, and the discharge of treated wastewater, naturally occurring chloride concentrations contribute to excessive chloride concentrations in Santa Clarita Valley groundwater (LARWQCB 1999b). The identification of excessive chloride concentrations resulted in the addition of several reaches of the Santa Clara River in the Section 303(d) List, as identified above. Table 3.15-11 provides a timeline summary of the regulatory actions taken to regulate chloride loading within the Santa Clara River.

Table 3.15-11. Regulatory Timeline for Chloride

Time	*Action*
January 1997	LARWQCB adopts a Chloride Policy, which consists of Resolution No. 97-02: Amendment to the California Regional Water Quality Control Plan for the Los Angeles Region, to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters.
Fiscal Year 1997/1998	Santa Clara River Reaches 3, 7 and 8 are added to the Section 303(d) List for chloride impairment, and TMDL monitoring commences.
October 2002	LARWQCB amended the 1994 Basin Plan to incorporate a TMDL for chloride for the upper Santa Clara River, establishing the 100 mg/L surface water quality objective for Reaches 7 and 8 (SWRCB 2002).
February 2003	SWRCB remanded the chloride TMDL back to the LARWQCB to consider sequentially phasing TMDL implementation tasks, extending the interim limits, and reevaluation of the chloride objective itself (SWRCB 2003a).
March 2003	LACSD adopts an ordinance that prohibits the installation and use of new self-regenerating water softeners in the Santa Clarita Valley to help lessen the chloride loading in the region (LACSD 2002a).
May 2003	EPA is developing chloride TMDLs for Reaches 3, 7 and 8 of the Santa Clara River, in the event that the LARWQCB does not adopt it's chloride TMDL by June 2003 (EPA 2003).
July 2003	The LARWQCB adopted the chloride TMDL in light of the Remand Resolution, and revised the Basin Plan to incorporate the chloride TMDL.

In October 2002, the LARWQCB amended the 1994 Basin Plan to incorporate a TMDL for chloride for the upper Santa Clara River, establishing a 100 mg/L surface water quality objective for Reaches 7 and 8 to protect the agricultural beneficial use of the river (SWRCB 2002). The TMDL is intended to reduce the sources in the upper Santa Clara River by reducing the sources of chloride discharged from households and industries and, if necessary, by constructing a chloride removal system to treat water reclamation plant effluent before discharge to the Santa Clara River. On February 19, 2003, the SWRCB remanded the chloride TMDL back to the LARWQCB to consider sequentially phasing TMDL implementation tasks,

extending the interim limits, and reevaluation of the chloride objective itself (SWRCB 2003a). The LARWQCB adopted the 100 mg/L chloride TMDL, and incorporated it into the Basin Plan on July 10, 2003 (LARWQCB 2003a). Because the State was not able to complete adoption of a chloride TMDL for Reach 3 (80 mg/L) of the Santa Clara River by the June 22, 2003 deadline, EPA is establishing the TMDL for Reach 3 to fulfill its legal obligations (EPA 2003). The EPA is also establishing chloride TMDLs for Reaches 5 and 6[11] (100 mg/L) at this time, at the request of the LARWQCB.

The Los Angeles County Sanitation Districts (LACSD) have compiled the Santa Clarita Valley Joint Sewerage System Chloride Source Report, a detailed and comprehensive study of the sources of chloride loading in the Santa Clarita Valley (LACSD 2002a). That study identified that residential water use, primarily from self-regenerating water softeners, greatly contributes to the chloride loading. Based on the results of that study, the LACSD adopted an ordinance that prohibits the installation and use of new self-regenerating water softeners in the Santa Clarita Valley. This ordinance took effect in March 2003.

Nitrogen –The LARWQCB adopted a nutrient TMDL in late 2003 for the upper Santa Clara River that addresses the Section 303(d) List for nitrate plus nitrite impairment (LARWQCB 2003b). The TMDL limits nitrate (NO_3), nitrite (NO_2), ammonia (NH_3), and total nitrogen (N). Principal sources of nitrogen to a watershed typically include discharges from water reclamation plants and runoff from agricultural activities. Elevated nitrogen concentrations (ammonia, nitrate, and nitrite) can cause impairments in warm water fish and wildlife habitat, along with contributing to eutrophic effects such as algae growth and low dissolved oxygen.

Other Impairments – Reaches 7, 8, and 9 of the Santa Clara River are listed as impaired on the Section 303(d) List for fecal coliform. Sources of coliform can include discharges from water reclamation plants, urban stormwater runoff, and septic tanks. A coliform TMDL for the upper Santa Clara River is scheduled for completion in 2006.

Typical data ranges for the Santa Clara River and Basin Plan objectives are provided in Table 3.15-12. Water quality in the Santa Clara River is considered generally impaired due to high concentrations of chlorides (LARWQCB 1999b). Much of the water present in the Santa Clara River west of Bouquet Canyon Road is a result of discharges from current wastewater treatment and reclamation plants. Beneficial uses for Pyramid and Castaic lakes as designated by the LARWQCB were presented in the discussion of the SWP facilities.

Imported Water Quality

Raw water from Castaic Lake delivered to the ESFP and RVWTP is generally of high quality. CLWA produces water that meets drinking water standards set by the EPA and the California Department of Health Services (CA DHS) (SCVWP 2003). A summary of the water quality data for 1990 to 2001 for Castaic Lake can be found in Table 3.15-4, in the discussion of SWP water quality.

11 The 303 (d) list identifies the impaired Reaches as 3, 7, and 8. Reaches 7 and 8, however, correspond to those identified as Reaches 5 and 6 in the Basin Plan and in the chloride TMDL. EPA is using the designations of Reaches 5 and 6 in the TMDL to correspond to the Basin Plan (EPA 2003).

Table 3.15-12. Water Quality Summary for the Santa Clara River

Constituent	*Applicable Objective/Criteria*	*Typical Data Ranges Resulting in Impairment*	*303(d) Listed Waters/ Santa Clara River Reaches*
Ammonia[1]	0.53-2.7 mg/L	ND-4.9 mg/L (mean of 1.4 ± 1.3)	Reaches 3, 7, and 8
Chloride	80-100 mg/L	10-138 mg/L (mean of 105 ± 21)	Reaches 3, 7, 8, and 9
Nitrate + Nitrite	≤ 10 mg/L	0.3-15.4 mg/L (mean of 5.7 ± 2.4)	Reach 8
Organic enrichment/low Dissolved Oxygen	5.0-7.0 mg/L[2]	0.8-11.0 mg/L (mean of 7.7 ± 2.5)	Reaches 8 and 9
Coliform	100-400 MPN/100ml[3]	20-24000 MPN/100ml	Estuary and Reach 8
Sulfate	150 mg/L	ND	Reach 9

Source: LARWQCB 2001.

Abbreviations: mg/L = milligrams per liter; MPN = most probable number; ND = none detected; ml = milliliter.

1. Basin Plan numeric objective varies depending on pH and temperature. The general range is 0.53-2.7 mg/L of total ammonia (at average pH and temp.) in waters designated as warm to protect against chronic toxicity and 2.3-28.0 mg/L to protect against acute toxicity.
2. Annual Basin Plan numeric objective mean greater than 7.0 mg/L and no single sample less than 5.0 mg/L.
3. Inland objective: fecal coliform not to exceed log mean of 200 most probable number (MPN)/100 milliliters (ml) in 30-day period and not more than 10 percent of samples exceed 400 MPS/100ml. Beach objective: total coliform not to exceed 1,000 MPN/100 ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100 ml at any time.

GROUNDWATER QUALITY

Groundwater monitoring in Alluvial Aquifer wells has shown chloride concentrations to be below the Basin Plan groundwater chloride objective of 150 mg/L, and nitrate concentrations to be below the 10 mg/L Basin Plan groundwater objective (LADRP 2003). The 1994 Basin Plan includes water quality objectives for bacteria, chemical constituents and radioactivity, mineral quality, nitrogen (nitrate, nitrite), taste and odor, TDS, sulfate, chloride and boron objectives for groundwater. All Basin Plan groundwater objectives are designed to protect groundwater for municipal drinking water purposes.

The groundwater quality of the Alluvial Aquifer is generally acceptable quality for domestic use without treatment, although Alluvial Aquifer water produced for domestic use is disinfected by the domestic water purveyors prior to delivery. The groundwater is generally of calcium bicarbonate, calcium sulfate or calcium-bicarbonate sulfate character, depending on location within the aquifer. TDS concentrations in the Alluvial Aquifer generally increase in concentration from approximately 550 to 610 mg/L in the eastern portion of the aquifer to approximately 660 to 710

mg/L in the western portion of the aquifer (Slade 2002). Other inorganic constituents follow similar trends.

The groundwater quality of the Saugus Formation is generally acceptable for domestic use without treatment, although Saugus Formation water produced for domestic use is disinfected by the domestic water purveyors prior to delivery. The groundwater is generally of calcium bicarbonate or calcium-magnesium sulfate character. Water quality generally deteriorates near the perimeter or base of the aquifer (e.g., near the geologic contact between the Saugus Formation and the underlying Pico Formation). Calculations of TDS concentrations in the Saugus Formation indicate levels greater than 800 ppm for both shallow (500 to 1,000 feet) and deep (2,000 to 2,500 feet) aquifers within the Saugus Formation (Slade 1988).

Groundwater produced by the water purveyors in the CLWA service area consistently meets drinking water standards set by the EPA and the CA DHS. In 2002, the local purveyors conducted additional water quality monitoring for constituents that lack drinking water standards in compliance with the federal and state Unregulated Contaminant Monitoring Rule (UCMR) regulations (SCVWP 2003).

Perchlorate – As of April 2003, according to the CA DHS, over 173 surface water and groundwater sampling points within the Los Angeles Region have detected perchlorate, ranging from 4 micrograms per liter (µg/L) to 159 µg/L (LARWQCB 2003). Within the CLWA service area, perchlorate has been a concern with respect to the groundwater quality since it was detected in four production wells in the eastern part of the Saugus Formation in 1997. Perchlorate is a chemical associated with many industrial applications, but primarily as a component of rocket fuel. Although there are neither Federal nor State limits/standards for perchlorate in drinking water, it was placed on the EPA's Drinking Water Contaminant Candidate List in 1998. In a further step to establish standards, the EPA required drinking water monitoring for perchlorate under the UCMR in 1999.

On December 6, 2002, the California Office of Environmental Health Hazard Assessment (OEHHA) proposed a public health goal, in the range of 2 to 6 parts per billion (ppb), for the amount of perchlorate present in drinking water (LADRP 2003a). Both the federal and state governments require monitoring for perchlorate and have recommendations for potable water uses of water sources exceeding 18 µg/L. The CA DHS has lowered the action level for perchlorate in drinking water from 18 ppb to 4 ppb (CA DHS 2002). In addition to the OEHHA's proposed public health goal, the CA DHS is required to adopt a primary drinking water standard for perchlorate by January 1, 2004 (LADRP 2003a). A Maximum Contaminant Level (MCL)[12] for perchlorate is not expected until 2004 (SCVWP 2003).

In 1997, perchlorate was detected in two production wells in the Saugus Formation, both of which are near the Whittaker-Bermite property, a former weapons manufacturing and testing site. These two wells had perchlorate levels above the 18 µg/L recommendation level and the use of these wells has been suspended. Two other production wells in the Saugus Formation

12 A MCL is the maximum permissible level of a contaminant in drinking water which is delivered to any user of a public water system. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are specified by the EPA, as authorized by the Safe Drinking Water Act.

have shown detectable levels of perchlorate below 18 µg/L and the use of these wells has been suspended. Due to the number and distribution of wells in the Santa Clarita Valley, the need to suspend use of these wells (the combined capacity of the four wells is 8,000 gallons/minute) has not had a substantial effect on overall water supply. In 2002, perchlorate was detected in one Alluvial Aquifer production well located near the Whittaker-Bermite property. That well tested positive for perchlorate at a level of 5.9 µg/L (SCVWP 2003). All five perchlorate-impacted wells have been removed from active water supply service (SCVWP 2003). The local purveyors are continuing to test for perchlorate in all of their active wells, and are developing a plan for a water treatment process to return the impacted wells to service.

The development and implementation of a cleanup plan for the Whittaker-Bermite site and the impacted groundwater is being coordinated among CLWA, the local purveyors, the City of Santa Clarita, DTSC, and the U.S. Army Corps of Engineers. In February 2003, the DTSC and the impacted local purveyors entered into an agreement in which DTSC will provide review and oversight of the response activities being undertaken by the impacted local purveyors related to the detection of perchlorate in the five impacted wells (SCVWP 2003). Under the scope of work of that agreement, the local purveyors will prepare: (a) well characterization reports; (b) a health-based risk assessment; (c) a regional groundwater flow model; and (d) a treatment technology evaluation report (SCVWP 2003). Several treatment technologies for the removal of perchlorate from water are currently available. As discussed above under the sub-heading of Water Supply, these various studies are underway.

In 2002, the EPA implemented the new Disinfectants and Disinfection Byproducts Rule, which in part, establishes a new MCL of 80 µg/L for total trihalomethanes (TTHM). TTHMs are a byproduct that is created when free chlorine is used as a means for disinfection. CLWA and the local purveyors are investigating alternative methods of disinfection to be able to maintain compliance with the new rule and future regulations relating to disinfection byproducts (SCVWP 2003).

Similarly, the EPA has revised the MCL for arsenic from 50 µg/L to 10 µg/L. Compliance with the federal standard is not required until 2006. However, in March of 2003, the OEHHA proposed a draft Public Health Goal for arsenic at 4 parts per trillion (ppt) (SCVWP 2003). CA DHS is required to establish a new MCL for arsenic by June 30, 2004. Historically, naturally occurring arsenic concentrations less than 5 µg/L have been detected in a few local groundwater supplies and less than 3 µg/L in SWP water supplies. Most groundwater wells in the Santa Clarita Valley have non-detectable concentrations of arsenic.

3.15.2 Impacts of the Project

3.15.2.1 Significance Criteria

The criteria listed below are based on Appendix G of the State CEQA Guidelines. The Project would have a significant impact on water resources if it would:

- violate (or cause the violation of) any water quality standards or waste discharge requirement;

- substantially deplete groundwater supplies or interfere substantially with naturally occurring groundwater recharge;
- substantially alter the existing drainage pattern of the site or area, including 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;
- 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;
- 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;
- otherwise substantially degrade water quality;
- 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;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or,
- cause inundation by seiche, tsunami, or mudflow.

3.15.2.2 *Environmental Impacts*

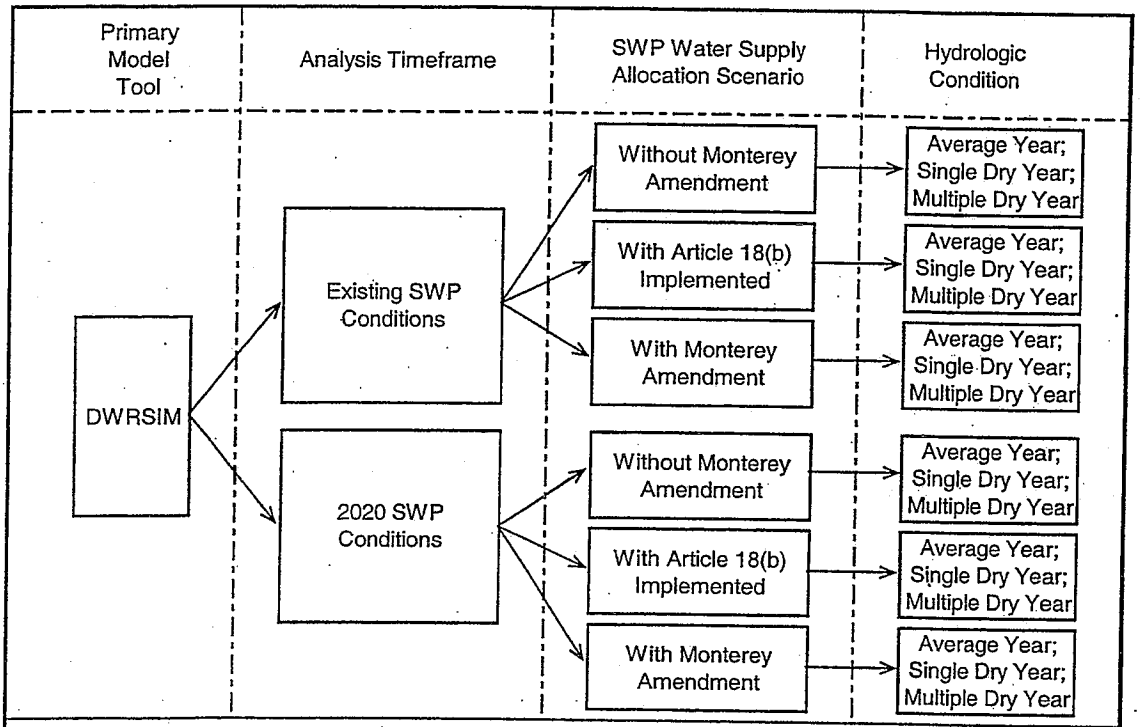
Analysis Methodology

The analysis of direct impacts focuses on the Project's potential to affect water quality, groundwater supplies, and surface water supplies associated with the SWP, WRMWSD, and CLWA. Alterations in elevation, depth, and surface area of water bodies, while not necessarily an impact to hydrology, can affect other resources such as aesthetics, biological resources, cultural resources, and geology and soils. These potential effects are considered within the impact discussions for the specific resources affected.

Figure 3.15-5 provides an overview of the SWP water supply analysis. The components shown in this figure, including the Primary Model Tool, Analysis Timeframe, SWP Water Supply Allocation Scenarios, and Hydrologic Conditions are described directly below. Following these discussions is a description of the general methodology followed in the analyses. Appendix D provides additional detail on the water supply analysis methodology and results.

PRIMARY MODEL TOOL AND ANALYSIS TIMEFRAME

The amount of SWP water supply that would be available for use by CLWA given the transfer of the Project's 41,000 AF of Table A Amount was assessed using results from DWR's planning



Definitions:

DWRSIM - DWR's SWP operations model. DWRSIM calculates the amount of water the SWP could deliver to Contractors in each month over a 73-year period of hydrologic record, based on a given set of facilities and operating constraints and for a given level of Contractor demand. (DWRSIM studies used were conducted by DWR in 1998 for CALFED Bay-Delta Program EIS/EIR [CALFED 2000].)

Existing SWP Conditions - A timeframe for anlaysis in the DWRSIM study. The existing condition study assumes the use of then-existing (1998) SWP facilities and operating constraints, along with then-current estimates of Contractor demands and upstream land and water use. (DWRSIM study 1995D06E-CALFED-771)

2020 SWP Conditions - A timeframe for analysis in the DWRSIM study. The 2020 condition study assumes the use of then-existing (1998) SWP facilities and operating constrains, along with estimated future (2020) Contractor demands upstream land and water use. (DWRSIM study 2020D09C-CALFED-786)

Without Monterey Amendment (Initial agricultural reduction in allocations) - Allocation of available SWP supplies based on the original terms of the Water Supply Contracts.

With Article 18(b) Implemented (Proportionate reduction in Table A Amounts) - Proportionate reduction in Contractor's Table A Amounts and allocation of available SWP supplies based on the original terms of the Water Supply Contracts, assuming DWR implemented Article 18(b) (i.e., the permanent shortage provision).

With Monterey Amendment (Proportionate reduction in allocations) - Allocation of available SWP supplies based on the terms of the Monterey Amendment to the Water Supply Contracts.

Average Year - The average quantity of supply available, based on the 73 years of DWRSIM model results.

Single Dry Year - Supply available in the single year with the lowest total SWP deliveries, based on the DWRSIM model results (1977). The single dry year supply is considered to be the worst-case scenario, with a probability of occurrence of once in 73 years, or about 1.4 percent of the time.

Multiple Dry Year - Average supply available over the four consecutive drought years of 1988 through 1991, based on the DWRSIM model results.

Figure 3.15-5. Water Supply Analysis Overview

model, DWRSIM. The two model studies used in this analysis simulate SWP and CVP operations and were conducted by DWR in 1998 for the CALFED Bay-Delta Program EIS/EIR (CALFED 2000). One of the model's inputs is a time series of monthly runoff based on historic hydrologic data from 1922 through 1994 (73 years), with that hydrologic data adjusted to reflect a current or future level of upstream land and water use. DWRSIM estimates the amount of water the SWP could deliver to Contractors in each month over the 73 years of operation, for a given set of facilities and operating constraints and for a given level of Contractor demand. The results are interpreted as the capability of the SWP to meet the assumed SWP demand, over a range of hydrologic conditions, for that assumed set of physical facilities and operating constraints.

The two DWRSIM studies both assume the use of SWP facilities and operating constraints that were present in 1998. One study uses 1998 estimates of existing Contractor demands and upstream land and water use, and the other uses 2020 projections for both Contractor demands and upstream land and water use.

These model runs provide the best estimates of SWP supply reliability that were available in 1998, and are consistent with the 1998 environmental setting used in this EIR. Since these studies were conducted, the modeling tool DWR uses to simulate operations has evolved (first to CALSIM I, and more recently to CALSIM II). However, while the modeling tool itself has changed, the criteria used in the models to simulate SWP operations have not significantly changed. While DWR has completed a more recent assessment of SWP reliability in its SWP Delivery Reliability Report using CALSIM II, the results of these new studies are comparable to the results of the DWRSIM studies (see Appendix D for a comparison of these model study results).

Although this EIR uses results from the two DWRSIM studies for determining SWP water supplies for both the pre-project 1998 environmental baseline and the project environmental impact analyses, it uses results from the CALSIM II studies from DWR's SWP Delivery Reliability Report (2003b) for determining estimates of SWP water supplies for the current environmental setting.

The estimates of SWP supplies associated with the 41,000 AF of Table A Amount based on DWR's SWP Delivery Reliability Report are slightly lower than the amounts under the DWRSIM studies for the comparable allocation scenario, particularly under "existing" conditions. The difference between SWP supply estimates in this EIR compared to estimates based on DWR's SWP Delivery Reliability Report is due to several reasons, including: (1) the use of two different models (DWRSIM in this EIR and CALSIM II in DWR's report), which show slightly different supply results in some years; (2) the results in this EIR account for the variable demand used by DWR in its model studies (consistent with the way DWR actually allocated water), while the results as presented in DWR's report do not (i.e., in DWR's report deliveries are presented as a percentage of Table A, regardless of the lower demands used in some years of the study); and, (3) the "existing" case in this EIR is based on 1998 SWP demand conditions, while the "existing" case in DWR's report is based on higher 2001 SWP demand conditions. The 2001 total SWP demand is higher than the 1998 demand due to increased M&I Contractor demands. A lower total demand can result in some years in more water being

allocated to the same Table A Amount, so the lower 1998 demand results in a slightly higher quantity of water associated with the 41,000 AF of Table A Amount.

SWP Water Supply Allocation Scenarios

The Project could be authorized under Article 41 of CLWA's original Water Supply Contract with DWR or under terms added to CLWA's contract as part of the Monterey Amendment (Article 53). Both contract terms allow for the transfer of Table A Amount between SWP Contractors. As described in section 1.3.2 under the Monterey Amendment, Agricultural Contractors committed, on a willing buyer-willing seller basis, to make available 130,000 AF of Table A Amount for permanent transfer to M&I Contractors (Article 53). The transfer of Table A Amount that is the subject of this EIR was implemented under this permanent transfer provision of the Monterey Amendment, although the transfer could be implemented under Article 41 of CLWA's original Water Supply Contract.

As was discussed in Chapter 1, DWR is in the process of preparing a new EIR for the Monterey Amendment. Since the Monterey Amendment changes the way SWP supplies are allocated among Contractors, this EIR provides three separate analyses of the Project's impacts to water supply available to WRMWSD and CLWA. The three analyses represent three possible scenarios for allocating available SWP supplies among Contractors, and provide an evaluation of the amount of SWP supply that would be associated with the 41,000 AF of Table A Amount under each of the allocation scenarios. The three analyses are governed by specific terms in the Water Supply Contracts, and are referred to in this EIR as: "SWP Allocation without the Monterey Amendment" (Without Monterey Amendment); "SWP Allocation without the Monterey Amendment and with Implementation of Article 18(b) Permanent Shortage Provision" (With Article 18(b) Implemented); and, "SWP Allocation with the Monterey Amendment" (With Monterey Amendment). The SWP allocation scenarios that form the basis of the three analyses are described below and summarized in Table 3.15-13. DWR is currently allocating SWP supplies in accordance with the Water Supply Contract as amended by the Monterey Amendment ("With Monterey Amendment").

It is important to note that the total amount of SWP supply is independent of the allocation scenario. The total amount of SWP supply available in a given year is a result of that year's hydrology, the amount of storage in SWP reservoirs at the beginning of the year, and the operational constraints that govern operations in the Delta (in 1998, Order WR 95-6 and currently, SWRCB Decision 1641).

SWP Allocation without the Monterey Amendment (i.e., Initial agricultural reduction in allocations), (Without Monterey Amendment) – Under the original terms of the Water Supply Contracts, water supply shortages, as well as any surplus water that might be available, were allocated differently among Contractors depending on whether Contractors' Table A Amounts were classified as agricultural or M&I. Under the original SWP contract terms, in a year with a water supply shortage (i.e., a year when total available SWP supplies were less than Contractor requests), available water supplies were allocated such that Agricultural Contractors received certain initial reductions in deliveries, and any remaining shortages were then allocated proportionately among all Contractors.

Conversely, when surplus water was available, Agricultural Contractors were given priority to this water. This priority to surplus water was given to both scheduled surplus water and unscheduled surplus water (refer to Table 3.15-3 for a definition of scheduled surplus water and unscheduled surplus water). Scheduled surplus water was generally available only during the early years of the SWP, when total Contractor demands were low. Due primarily to increasing Contractor demands for Table A supplies, scheduled surplus water has not been available since the mid-1980s.

Since WRMWSD's Table A Amount is classified as agricultural, the Table A Amount transferred to CLWA would be considered agricultural. Therefore, in this allocation scenario, under shortage conditions the 41,000 AF of Table A Amount would be subject to the initial agricultural reductions. Similarly, under surplus water conditions the 41,000 AF of Table A Amount would have the agricultural priority to surplus water.

SWP Allocation without the Monterey Amendment and with Implementation of Article 18(b) Permanent Shortage Provision (i.e., Proportionate Reduction in Table A Amounts), (With Article 18(b) Implemented) – Under the original terms of the Water Supply Contracts, DWR could invoke Article 18(b) of the Water Supply Contracts if DWR determined that the SWP was in a "permanent shortage" situation. With implementation of Article 18(b), DWR would determine a new "minimum project yield" for the SWP, and reduce Contractors' Table A Amounts proportionately[13] until they equaled the reduced minimum project yield.

There is a great deal of controversy and uncertainty regarding this allocation scenario and how it might have been implemented by DWR. More specifically, there are several different legal and contractual interpretations, particularly between Agricultural and M&I Contractors, primarily regarding whether DWR could have validly invoked Article 18(b), and assuming that it could have done so, how it could have allocated water under Article 18(b). In general, the water allocation rules that would apply under this allocation scenario are similar to the allocation rules described for the Without Monterey Amendment scenario described above, with Agricultural Contractors receiving initial reductions in shortage years and priority to surplus water when it was available. However, with all Contractor Table A Amounts reduced, shortages (i.e., supplies insufficient to meet Contractor requests for Table A water) would occur much less frequently (because the SWP could deliver the smaller Table A Amounts more regularly), and the initial agricultural reduction would be applied to a smaller Table A Amount (i.e., the reductions would be smaller). And with Table A Amounts reduced, SWP supplies in excess of the reduced minimum project yield would be available for scheduled delivery in most years. Unscheduled surplus water would be available under the same conditions, in the same amounts, and allocated in the same way as in the Without Monterey Amendment scenario.

13 Without the Monterey Amendment, Article 18(b) of the Water Supply Contracts stated "In the event that the State is unable to construct sufficient additional conservation facilities to prevent a reduction in the minimum project yield, or if for any other reason there is a reduction in the minimum project yield, which, notwithstanding preventive or remedial measures taken or to be taken by the State, threatens a permanent shortage in the supply of project water to be made available to the contactors: (1) The annual entitlements and the maximum annual entitlements of all Contractors, except to the extent such entitlements may reflect established rights under the area of origin statutes, shall, by amendment of Table A of this contract, be reduced proportionately by the State to the extent necessary so that the sum of the revised maximum annual entitlements of all Contractors will then equal such reduced minimum project yield...."

Table 3.15-13. Summary of SWP Water Supply Contract Without Monterey Amendment, With Article 18(b) Implemented and With Monterey Amendment Allocation Scenarios

	Without Monterey Amendment	*With Article 18(b) Implemented*	*With Monterey Amendment*
SWP Supplies Allocated Based on:	Original terms of Water Supply Contracts.	Original terms of Water Supply Contracts, assuming DWR implemented Article 18(b), (i.e., if it determined SWP was in "permanent shortage" situation). All Contractors' Table A Amounts proportionately reduced until they total new "minimum project yield," as determined by DWR.	Terms of Monterey Amendment to Water Supply Contracts.
Table A Water Shortage Allocation	Agricultural Contractors receive initial supply reduction (up to 50% of Table A Amount in one year, and up to 100% in any consecutive seven years). Any remaining shortage allocated proportionately among all Contractors.	Same as Without Monterey Amendment[1].	Shortages allocated in proportion to Contractors' Table A Amounts; no agricultural and M&I allocation differential.
Surplus Water Allocation	First priority given to Agricultural Contractors. Two categories of surplus water: • Scheduled surplus. • Unscheduled surplus.	Same as Without Monterey Amendment[2].	Surplus allocated in proportion to Contractors' Table A Amounts. Scheduled surplus water eliminated. Unscheduled surplus water renamed; referred to as Article 21 water.
Results for Contractors	Agricultural Contractors have: • Less reliable Table A supply than M&I Contractors (due to initial agricultural reductions), but, • More access to surplus water.	Supplies shift from M&I Contractors to Agricultural Contractors, due to: • Smaller and less frequent initial agricultural reductions, and, • More of available supply classified as surplus water (with agricultural priority).	Reliability of both Table A supply and surplus supply is same for Agricultural Contractors and M&I Contractors.

1. Same allocation rules apply, but because Table A Amounts are reduced, initial agricultural reductions are smaller and less frequent.
2. Same allocation rules apply, but because Table A Amounts are reduced, surplus supplies are available more frequently.

There are two primary uncertainties under this allocation scenario. This first unknown is what value of minimum project yield DWR would have used in reducing Table A Amounts. A specific value for minimum project yield had not been calculated in the several years leading up to the Monterey Amendment, but was commonly thought at the time to be in the range of 2.0 to 2.5 million AF (Cal. App. 3d PCL vs. DWR September 15, 2000). The second uncertainty is how any water supply in excess of minimum project yield would have been allocated. This is an area of controversy, with some Contractors contending it should be allocated as surplus water with Agricultural Contractors receiving a priority, and others contending it should be allocated in proportion to Table A Amounts.

Given these uncertainties, two Article 18(b) allocation scenarios that bound the various assumptions and interpretations described above were analyzed for this EIR. The first scenario assumes minimum project yield is reduced to 2.0 million AF, and scheduled surplus water is allocated with priority given to Agricultural Contractors. The second scenario assumes minimum project yield is reduced to 2.5 million AF, and deliveries above this amount are allocated in proportion to Table A Amounts. The first of these scenarios would result in more water being allocated to Agricultural Contractors than the second, and therefore would result in more water being associated with the Project's 41,000 AF of Agricultural Table A Amount. Because this first scenario would result in the worst case for purposes of analysis of potential growth impacts, only the results of the first scenario are presented in this EIR (for the water supply results of both scenarios, refer to Appendix D).

SWP Allocation with the Monterey Amendment (i.e., Proportionate reduction in allocations), (With Monterey Amendment) – Under the terms of the Water Supply Contracts as amended by the Monterey Amendment, all SWP water supplies are shared among all Contractors in proportion to their Table A Amounts. Therefore, the 41,000 AF of Table A Amount transferred to CLWA from WRMWSD would be subject to the same shortages as all other Table A Amounts (i.e., it would not be subject to an initial agricultural reduction and would not have the priority to certain surplus deliveries), and would have access to the same proportionate share of any available surplus water as all other Table A Amounts. As part of the Monterey Amendment, the category of scheduled surplus water was eliminated because it was no longer available, the category of unscheduled surplus water was retained but is now referred to as Article 21 water, and Article 18(b) was deleted.

Hydrologic Conditions

Because SWP water supplies vary from year to year depending on a variety of factors, this EIR presents water supply results for three different hydrologic conditions. A Contractor's "average year" supply is the average quantity of water available to the Contractor, based on the 73 years of DWRSIM model results. A Contractor's "single dry year" supply is the amount of water available to the Contractor in the single year with the lowest total SWP deliveries, based on the DWRSIM model results, which was 1977. The single dry year supply is considered to be a worst-case scenario, with a probability of occurrence of once in 73 years, or about 1.4 percent of the time. A Contractor's "multiple dry year period" supply is the average amount of water available over the four consecutive years drought years of 1988 to 1991, based on the DWRSIM model results.

GENERAL METHODOLOGY

The potential impacts of the Project to WRMWSD and CLWA SWP water supplies and to SWP facilities were evaluated using the general methodology described below. Appendix D provides additional detail on the water supply analysis methodology.

First, the amount of SWP water supply available to WRMWSD and CLWA, including the amount associated with the 41,000 AF of Table A Amount, was analyzed. Data from the DWRSIM model studies discussed above (including the M&I and Agricultural Contractor demands used as input to the studies, and the total annual SWP deliveries to all Contractors from the model study results) were used as a starting point for the analysis. For this analysis, these total annual deliveries were allocated among Contractors in accordance with the three SWP water allocation scenarios described above (Without Monterey Amendment, With Article 18(b) Implemented, and With Monterey Amendment), for each year over the model's period of record. The results of these analyses were used to determine the SWP deliveries that could be expected by WRMWSD and CLWA under each water allocation scenario, for each hydrologic condition considered.

Next, impacts to SWP facilities were analyzed. This analysis also used data from these same DWRSIM model studies as a starting point for the analysis, using model study results related to San Luis Reservoir operations (i.e., reservoir storage, diversions to and releases from storage, and Aqueduct flows upstream and downstream of the reservoir). The change in reservoir storage and Aqueduct flow due to the Project was then estimated based on the difference between WRMWSD and CLWA in the timing of monthly deliveries (i.e., the difference in timing between agricultural use and M&I use), given the allocated supplies determined in the supply analysis.

In the supply analyses conducted for this EIR, the classifications of Table A Amounts as agricultural or as M&I were maintained. The 41,000 AF of Table A Amount transferred from WRMWSD (through KCWA) is agricultural. Although CLWA serves M&I users, the agricultural classification of the 41,000 AF Table A Amount would remain because the classification is determined by the original Water Supply Contract terms according to anticipated use (i.e., KCWA's original Water Supply Contract) and has not changed. Agricultural Table A Amount can be used for M&I uses and, conversely, M&I Table A Amount can be used for agricultural uses. Of CLWA's 54,200 AF of SWP Table A Amount without the Project, 41,500 AF is classified as M&I, and 12,700 AF as agricultural.

In addition to Table A supplies, CLWA and WRMWSD can also receive deliveries of surplus water (see Table 3.15-3 for descriptions of types of surplus water). Unscheduled surplus water/Article 21 water is not included in the water supply analysis for any of the three water allocation scenarios. This is because it is not available on a routine or predictable basis, and is generally only available for short periods of time during low demand months when most Contractors have a limited ability to use it. It is noted, however, that unscheduled surplus water/Article 21 water could provide additional water supplies that could be used by WRMWSD and CLWA. Scheduled surplus water is only included in the With Article 18(b) Implemented allocation scenario, because with the reduced Table A Amounts under that scenario scheduled surplus water would have been available on a scheduled or more

dependable basis similar to Table A supplies (i.e., Contractors could schedule in advance, in a manner similar to their annual Table A requests, deliveries of scheduled surplus water). Scheduled surplus water is assumed to not be available under the Without Monterey Amendment and With Monterey Amendment allocation scenarios because (1) for the Without Monterey Amendment allocation scenario, scheduled surplus water was generally available only during the early years of the SWP, when total Contractor demands were low, and has not been available since the mid-1980s due primarily to increasing Contractor demands for Table A supplies, and (2) for the With Monterey Amendment allocation scenario, the category of scheduled surplus water was eliminated as part of the Monterey Amendment because it was no longer available (refer to Table 3.15-3).

For the purposes of estimating the impacts of the Project, the impact analyses assume that CLWA will take delivery of the entire amount of water made available from the 41,000 AF Table A Amount transferred. This assumption conservatively provides the largest effect on SWP operations, even though CLWA may not currently have the local demand for this entire amount of water in average and wetter hydrologic years.

State Water Project and Associated Facilities

DIRECT IMPACTS

The Project would not result in a change in the total amount of SWP supply available for delivery to SWP Contractors. The total amount of SWP supply available in a given year is a result of that year's hydrology, the amount of storage in SWP reservoirs at the beginning of the year, and the operational constraints that govern operations in the Delta (in 1998, SWRCB Order WR 95-6 and currently, SWRCB Decision 1641). The total available SWP supply is then allocated among the SWP Contractors and is independent of the location of use south of the Delta. Impacts described below and summarized in Table 3.15-14 for the SWP and associated facilities are primarily due to two changes as a result of the Project, which are:

- *Change in end use of water associated with the 41,000 AF Table A Amount* – The project would result in a change from agricultural end use to M&I end use of water associated with the 41,000 AF Table A Amount. Typically, agricultural water users use proportionately more of their annual water supply during the heavy irrigation months of the late spring and summer than do urban water users, and proportionately less of their supply than urban users during the remainder of the year. In the case of WRMWSD and CLWA, this difference in delivery during the year would result in a net reduction in deliveries of water associated with the 41,000 AF Table A Amount in May through September, and a net increase in deliveries during the remaining months of the year (October through April). In addition, deliveries to WRMWSD historically have peaked in July, while CLWA's deliveries historically have peaked in August.

- *Changes in the amount of water transported to the CLWA turnouts* – The Project would result in the delivery of water to the CLWA turnout that could have otherwise been delivered to the WRMWSD turnouts. Because the CLWA turnout is located further

down the Aqueduct than the WRMWSD turnout (see Figure 1.3-1), water associated with the Table A transfer would need to be transported this additional distance.

Table 3.15-14. Summary of Impacts to the SWP and Associated Facilities

The Delta	The Project would not change the total amount of SWP supply available for delivery to Contractors, so there would be no change in the total amount of water diverted from the Delta. The difference in timing of water used for urban purposes rather than agricultural purposes would result in a slight change in timing of deliveries of the 41,000 AF of Table A Amount. This change in timing could also result in a slight change in the timing of the filling of San Luis Reservoir, which could result in minor changes in the timing of Delta diversions. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta. Any change in Delta diversions that did occur would result in an imperceptible or minor change in Delta water quality (slight salinity decreases withy lower diversions, and slight salinity increase with higher diversions). All changes would be within applicable water quality standards and agreements. Impacts would be less than significant.
California Aqueduct from the Delta to San Luis Reservoir	If the changes in Delta diversions described above occurred, there would be a corresponding change in the timing of water transported in the California Aqueduct from the Delta facilities to San Luis Reservoir. This would not result in an environmental impact to water resources.
San Luis Reservoir	The difference in timing of water used for urban purposes rather than agricultural purposes would result in a slight increase in storage at San Luis Reservoir from July through November, and a slight decrease in storage during the remainder of the year. The change in storage at San Luis Reservoir resulting from the Project would represent a small portion of the total average storage in the SWP share of San Luis Reservoir, reflecting storage changes of less than 0.5 percent of average monthly storage in most months and not more than two percent in any month. This would not result in an environmental impact to water resources.
California Aqueduct downstream of San Luis Reservoir	The Project would result in a minor change in the timing of water transported in the Aqueduct between San Luis Reservoir and the WRMWSD turnouts, with a slight increase in the amount of water transported from October to April, and a slight decrease during the remainder of the year (May to September). This would not result in an environmental impact to water resources. The Project would result an annual increase of up to 41,000 AF transported in the California Aqueduct from the WRMWSD turnouts to the CLWA turnout. This increase would slightly increase the flow (velocity) in the California Aqueduct and may result in a minor change in the water level within the non-pipeline portions of the Aqueduct. This would not result in an environmental impact to water resources.
Castaic Lake	The Project would increase SWP water delivered to CLWA resulting in additional water being conveyed to, and delivered from, Castaic Lake, but would have little effect on the overall storage volume in the lake at any given time. This would not result in an environmental impact to water resources.
Other SWP Reservoirs (Quail and Pyramid lakes)	The Project would not result in changes to the overall volume of water stored in either Quail or Pyramid lakes, but would increase the amount of water that is conveyed to and released from the lakes. This would not result in an environmental impact to water resources.

Unless otherwise noted, the impacts of the Project to the SWP and associated facilities would be similar regardless of the SWP water allocation scenario (Without Monterey Amendment, With Article 18(b) Implemented, and With Monterey Amendment), and under both SWP demand conditions (existing and 2020).

The Delta – As discussed above, the Project would not change the total amount of SWP supply available for delivery to the Contractors. Therefore, there would be no change in the total amount of water diverted from the Delta. The difference in the timing of water used for urban purposes by CLWA rather than for agricultural purposes by WRMWSD would result in a slight change in the timing of deliveries of the 41,000 Table A Amount south of the Delta. This slight change in the timing of deliveries would require a slight change in operations (i.e., either in diversions from the Delta or in San Luis Reservoir operations). Generally, the SWP operates to divert as much water from the Delta as is available under prevailing hydrologic conditions, within the water quality standards and operational constraints that govern Delta operations (i.e., currently, SWRCB Decision 1641 and in 1998, Order WR 95-6). This is true regardless of the timing of deliveries south of the Delta because when Delta diversions exceed downstream deliveries, that excess is stored in San Luis Reservoir for delivery later in the year.

Because Delta diversions are limited by either water availability or operational/regulatory constraints, the change in the timing of deliveries of the 41,000 AF of Table A due to the Project would primarily result in changes in San Luis Reservoir storage (as is discussed in more detail below). These changes in storage could in some years result in the reservoir reaching full capacity at a slightly different time than if the Project were not implemented, which in turn could result in a slight change in Delta diversions (because diversions would generally be reduced when storage becomes full). Given the small magnitude of the change in the timing of deliveries, any change in the timing of Delta diversions that did occur would be minor, and would likely be on the order of hours or days (i.e., with the Project, certain changes in Delta diversions that would have occurred without the Project would still occur, but might shift by a few hours or days).

Delta diversions and their effect on Delta water quality vary from year to year. Any minor change in Delta diversions that did occur as a result of the Project would be small relative to total SWP diversions and would fall well within the range of historical and future anticipated SWP diversions from the Delta. Any minor change in the timing of Delta diversions due to the Project would result in an imperceptible or minor change in Delta water quality (slight salinity decrease with lower diversions, and slight salinity increase with higher diversions). Because (1) the Project would not change the operating criteria for diversions from the Delta, (2) the Project would very infrequently result in minor changes to Delta diversions within the applicable environmental and regulatory constraints, and (3) under those conditions that diversions could change, the changes would be minor, the Project would result in less than significant impacts to water resources, including water quality, within the Delta.

California Aqueduct from the Delta to San Luis Reservoir – As described above, the change in the timing of deliveries for WRMWSD and CLWA could result in some years in minor changes to Delta diversions. However, these changes would fall well within the range of historical and future anticipated SWP diversions from the Delta. If these timing changes in Delta diversions occurred, there would be a corresponding change in the timing of water transported in the

California Aqueduct from the Delta facilities to San Luis Reservoir. These changes in water transported in the Aqueduct would be minor. Water associated with the 41,000 AF of Table A Amount has historically been transported through this reach, and the amount of water transported would not exceed the capacity of the Aqueduct. Changing the timing of water transported in the Aqueduct would not result in an environmental impact to water resources.

San Luis Reservoir – As discussed in section 3.15.1.1, the general operation at San Luis Reservoir is to try to fill the reservoir during the high runoff months of the winter and early spring, and then release the stored water to supplement the more limited diversions from the Delta during the higher-demand summer and fall months to meet Contractor demands. The Project, in combination with the net change in the timing of deliveries during the year between WRMWSD and CLWA, would result in a slight increase in storage at San Luis Reservoir from July through November, and a slight decrease in storage during the remainder of the year. The magnitude of the storage increase would be greatest in August and September, averaging approximately 4,500 AF at existing SWP demand conditions and approximately 4,200 AF at 2020 SWP demand conditions. The magnitude of the reduction in storage would be greatest in March and April, averaging approximately 3,000 AF at existing SWP demand conditions and approximately 2,700 AF at 2020 SWP demand conditions. As shown on Figure 3.15-6, the change in storage at San Luis Reservoir resulting from the Project would represent a small portion of the total average storage in the SWP share of San Luis Reservoir (SWP capacity is over 1 million AF), reflecting storage changes of less than 0.5 percent of average storage in most months and not more than 2 percent in any month. The information provided above and in Figure 3.15-6 is based on implementation of the Project under the terms of the With Monterey Amendment scenario. These storage changes would be similar under the Without Monterey Amendment and With Article 18(b) Implemented scenarios because the amount and timing of deliveries under each of the allocation scenarios is quite similar.

These changes in storage are well within the substantial differences in San Luis Reservoir storage that occur in normal SWP operations over the course of the year and from year to year, and would not result in an environmental impact to water resources at San Luis Reservoir.

California Aqueduct downstream of San Luis Reservoir – The Project would result in a minor change in the timing of water transported in the Aqueduct between San Luis Reservoir and the WRMWSD turnouts. Within this reach of the Aqueduct, a slight increase in the amount of water transported would occur from October to April, and a slight decrease would occur during the remainder of the year (May to September). These changes in the amount of water transported from the Delta to the WRMWSD turnouts would result from the change in end use of the water (urban rather than agricultural use) and the associated shift in the timing of delivery. These changes in water transported in the Aqueduct would be minor. Water associated with the 41,000 AF of Table A Amount has historically been transported through this reach, and the amount of water transported would not exceed the capacity of the Aqueduct. Changing the timing of water transported in the Aqueduct would not result in an environmental impact to water resources.

The Project would result in an annual increase of up to 41,000 AF transported in the California Aqueduct from the WRMWSD turnouts to the CLWA turnout. This increase would slightly increase the flow (velocity) in the California Aqueduct and may result in a minor change in the water level within the non-pipeline portions of the Aqueduct. Because these changes in the

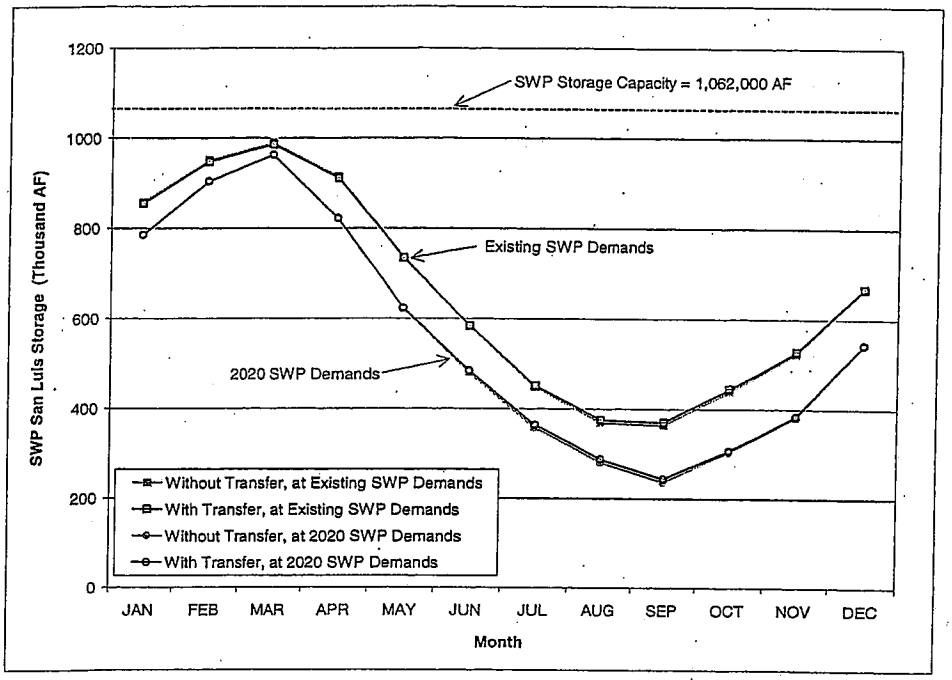


Figure 3.15-6. Average Monthly SWP San Luis Reservoir Storage With and Without the Project, under With Monterey Amendment SWP Allocations

amount of water transported in the Aqueduct would be minor, and because the Project would not result in changes to the operating criteria of the Aqueduct (i.e. the additional amount of water would not be allowed to exceed the capacity of the Aqueduct), these changes in timing of flows in the Aqueduct would not result in an environmental impact to water resources.

The Project would require the transport of water associated with the 41,000 AF Table A Amount through the Teerink, Chrisman, Edmonston, and Oso pumping plants (transport to WRMWSD also requires pumping a portion of the water through the Teerink and Chrisman pumping plants) and the Warne and Castaic power plants located within and between WRMWSD and Castaic Lake (refer to Figure 1.1-1). This would not result in an environmental impact to water resources.

The Project would not change the source of water in the California Aqueduct or otherwise affect water quality in the Aqueduct.

Castaic Lake – The amount of water stored at Castaic Lake would not be expected to change as a result of the Project. As discussed in section 3.15.1.2, Castaic Lake is the terminal reservoir on the West Branch of the California Aqueduct and is operated to help meet peak deliveries during the summer months for those SWP Contractors that receive deliveries from Castaic Lake and to provide an emergency water supply in case of a major supply system outage. Castaic Lake is also used for year-round recreational purposes. Under normal operations, the amount of storage that is withdrawn from Castaic Lake to make deliveries to Contractors over the summer (the amount withdrawn that exceeds the amount delivered to the lake) is typically about 30,000 AF (or about 10 percent of the lake's volume). The amount of this storage withdrawal is small

relative to total deliveries from the West Branch, which averaged about 403,000 AF from 1990 through 2000. In other words, most deliveries from the West Branch are conveyed through the California Aqueduct and Castaic Lake in about the same month the water is delivered to Contractors from the lake. In the future, DWR is expected to maintain this same general operation at Castaic Lake regardless of whether deliveries from the West Branch increase, and regardless of whether increased deliveries are due to increasing Contractor demands or due to Table A Amount transfers such as the Project.

Over the past decade, CLWA's Table A water deliveries from Castaic Lake have averaged only about 6 percent of the total SWP water delivered from the lake. Over this same period, the majority of the SWP water delivered from the lake (approximately 93 percent) was delivered to MWD due to its relatively larger Table A Amount and storage rights in Castaic Lake. The increase in water delivery to CLWA from the Project would result in additional water being conveyed to, and delivered from, Castaic Lake, but would have little effect on the overall storage volume in the lake at any given time. Because CLWA's deliveries from Castaic Lake with the Project would be minor compared to the total amount of water delivered from the lake, most of the SWP water is conveyed to the lake in the same month it is delivered to CLWA, and the Project would not change DWR's operating criteria for the lake, the Project would not result in an environmental impact to water resources at Castaic Lake. Because the Project would not change the source of water delivered to Castaic Lake and would result in minor, if any changes in the lake's volume, water quality would not be affected.

Although not an impact of the Project, it is noted that flexible storage is a component of the Monterey Amendment. CLWA would only have the ability to access water stored in Castaic Lake under the "flexible storage" provision of the Monterey Amendment in the With Monterey Amendment scenario. The amount of flexible storage available to CLWA would not change as a result of the Project.

Other SWP Reservoirs – Quail Lake and Pyramid Lake are located between the WRMWSD turnouts and the CLWA turnout on the West Branch of the California Aqueduct. DWR operates Quail Lake to re-regulate Aqueduct flows. Pyramid Lake is used in the operation of the Castaic Power Plant located between Pyramid and Castaic lakes, as well as to provide an emergency water supply for the West Branch Contractors. The Project would be implemented in accordance with DWR's existing operation of these lakes. As with Castaic Lake, most of the SWP water delivered to both Quail and Pyramid lakes is conveyed to, and released from, the lakes within the same month. Therefore, the Project would not result in changes to the overall volume of water stored in either Quail or Pyramid lakes, but would increase the amount of water that is conveyed to and released from the lakes. Because water is conveyed to and released from these lakes in approximately the same month, and because the project would not result in changes to DWR's operations of these facilities, the Project would not result in an environmental impact to water resources.

INDIRECT IMPACTS

Because the Project would be implemented in accordance with DWR's operation of the SWP and associated facilities, no indirect impacts to water resources would occur.

Wheeler Ridge-Maricopa Water Storage District

DIRECT IMPACTS

The Project reduces WRMWSD's Water Supply Contract Table A Amount by 41,000 AF (from 238,088 AF to 197,088 AF, a reduction of 17.2 percent). Because SWP water supplies are allocated among Contractors on the basis of Table A Amounts, this reduction in WRMWSD's Table A Amount would result in a reduction in the total amount of SWP water that WRMWSD could obtain (including both Table A and any available surplus supplies) from the SWP. Under all SWP allocation scenarios and hydrologic conditions, the Project would result in a maximum reduction in the SWP Table A water available to WRMWSD of approximately 17.2 percent.

As discussed in section 3.15.2.2, the supplies presented below are Table A supplies only (or in the case of the allocation scenario With Article 18(b) Implemented, Table A supplies and scheduled surplus water), and do not include unscheduled surplus water/Article 21 water.

Water Supply

All SWP Allocation Scenarios under Existing SWP Demand Conditions – Table 3.15-15 presents the results of the analysis of WRMWSD's SWP Table A supply under the existing (1998) SWP demand conditions used in the DWRSIM study, and under the various hydrologic conditions (average year, single dry year, and multiple dry year period) and water allocation scenarios considered (With Monterey Amendment, Without Monterey Amendment, and With Article 18(b) Implemented). Under current SWP allocation rules (With Monterey Amendment), implementation of the Project would result in a reduction in the Table A supply available to WRMWSD of 34,400 AF, 9,200 AF, and 18,100 AF under the average year, single dry year, and multiple dry year period conditions, respectively. Considering all allocation scenarios, the largest reduction in supplies available to WRMWSD with implementation of the Project would be 35,300 AF under average year conditions With Article 18(b) Implemented; 9,200 AF under a single dry year With Monterey Amendment; and 18,100 AF under a multiple dry year period With Monterey Amendment.

With the Project, WRMWSD would have sufficient SWP supplies at least 57 percent of the time to deliver Table A water in an amount that would independently meet its minimum demands under favorable economic conditions (180,000 AF). In addition, the average amount of Table A water WRMWSD could expect to receive with the Project under all allocation scenarios (157,000 to 169,500 AF) is greater than the average amount of historic SWP water deliveries to WRMWSD from 1990 to 1999 (137,360 AF) by approximately 14 and 23 percent, respectively. With the Project, sufficient SWP Table A water would be available within the district in years of average or greater than average SWP supplies. In years of less than average SWP supplies, and depending on that year's specific demand, WRMWSD may not have sufficient SWP Table A water to meet demands. In these years, WRMWSD would need to rely on other water management actions, such as previously banked water, and/or individual farmers within the district would use additional local groundwater.

As previously discussed, the decision to use local groundwater (i.e., groundwater pumped from wells owned and operated by farmers) or previously banked water supplies on lands within the district is predominately an economic decision made by farmers. In years when SWP deliveries

Table 3.15-15. WRMWSD's SWP Table A Supply at Existing SWP Demand Conditions, under all SWP Allocation Scenarios[1]

(all values in AF, rounded to the nearest 100 AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year Period[2]*
With Monterey Amendment	Without the Project	238,100	199,900	53,300	105,300
	With the Project	197,100	165,500	44,100	87,100
	Difference[3]	***41,000***	***34,400***	***9,200***	***18,100***
Without Monterey Amendment	Without the Project	238,100	189,700	0	79,700
	With the Project	197,100	157,000	0	65,900
	Difference[3]	***41,000***	***32,700***	***0***	***13,700***
With Article 18(b) Implemented[4]	Without the Project	113,800	204,800	11,500	100,600
	With the Project	94,200	169,500	9,500	83,200
	Difference[3]	***19,600***	***35,300***	***2,000***	***17,300***

Note: Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771. This study used 1998 DWR estimates of then-existing SWP Contractor demands.
2. Multiple dry year period supplies shown are average annual supplies over a four-year period.
3. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.
4. Under the SWP allocation scenario With Article 18(b) Implemented, the Table A Amounts shown are estimates of WRMWSD's reduced Table A Amount, based on its proportionate share of a reduced SWP minimum project yield of 2.0 million AF. The supplies shown include both Table A supplies and scheduled surplus supplies estimated to be available, with surplus supplies allocated based on priority for agricultural use.

are less than crop demands, individual farmers may choose to use local groundwater to meet demands. Because WRMWSD has substantially diversified its water sources through other water management actions, resulting in sufficient water available to the district to meet demands in most years at a lower fixed cost (when total costs are considered) than SWP water, increased reliance on groundwater would likely be a result of independent actions by the individual farmers (refer to Appendix C). However, it is reasonable to assume that some farmers may use local groundwater when SWP deliveries are not sufficient to meet demands, and, therefore, the Project may result in additional groundwater pumping in these years. Due to the complexity of factors that may be considered by individual farmers when deciding to use local groundwater in lieu of using imported water, the exact amount of additional reliance on groundwater that may occur in dry years cannot be determined. Because the Project could result in a reduction of up to 9,200 AF of Table A water in a single dry year and up to 18,100 AF of Table A water in a multiple dry year period, this is assumed to be the amount of additional groundwater use that could result from implementation of the Project in these year types. These amounts are small relative to the total amount of water in storage in the Kern County Groundwater Basin (total storage is 40 million AF; DWR 2003a) and the White Wolf sub-basin (total storage is about 2.5 million AF; BE 1975). Because groundwater levels in the portions of these basins underlying WRMWSD generally have been increasing over time (BE 1995), indicating that the basins could sustain an increase in use under these limited conditions

without resulting in a net deficit in aquifer volume or a lowering of the local groundwater table, impacts to groundwater would be less than significant.

As was discussed previously, the supplies presented above do not include unscheduled surplus water/Article 21 water. Generally, when this type of water is available, there is enough to meet all Contractor requests for it. It is only when total Contractor requests for this water exceed the amount available that DWR would need to allocate that limited supply among Contractors. If this situation occurred, the Project could result in a reduction in the amount of unscheduled surplus water/Article 21 water that WRMWSD could obtain (because it is allocated based on Contractor Table A Amounts). Because this reduction is minor, and would only occur infrequently, the reduction in the amount of unscheduled surplus water/Article 21 water that WRMWSD could obtain would not materially affect WRMWSD's surplus water supply and the impact would be less than significant.

All SWP Allocation Scenarios under 2020 SWP Demand Conditions – Table 3.15-16 presents the results of the analysis of WRMWSD's SWP Table A supply under the 2020 SWP demand conditions used in the DWRSIM study, and under the various hydrologic conditions considered (average year, single dry year, and multiple dry year period) and water allocation scenarios (With Monterey Amendment, Without Monterey Amendment, and With Article 18(b) Implemented). Under current SWP allocation rules (With Monterey Amendment), implementation of the Project would result in a reduction in the Table A supply available to WRMWSD of 32,000 AF, 9,200 AF, and 17,600 AF under the average year, single dry year, and multiple dry year period conditions, respectively. Considering all allocation scenarios, the largest reduction in supplies available to WRMWSD with implementation of the Project would be: 34,900 AF under average year conditions With Article 18(b) Implemented; 9,200 AF under a single dry year With Monterey Amendment; and 17,600 AF under a multiple dry year period With Monterey Amendment.

The amount of SWP supply available for a given Table A Amount is somewhat less under 2020 SWP demand conditions than under the existing SWP demand conditions discussed previously. This SWP supply reduction is primarily due to two factors: an increase in future water use upstream of the Delta, which reduces the amount of water flowing into the Delta and therefore the amount available for SWP supplies; and, an increase in SWP Contractor demands, which in certain years when supplies are limited, can result in less SWP supply being allocated to a given Table A Amount. This supply reduction is independent of the Project, and can be seen by comparing the supplies between Table 3.15-15 (existing SWP demands) and Table 3.15-16 (2020 SWP demands). Assuming that future WRMWSD water demand remains at current levels, it is likely that WRMWSD would need to rely more on other water management actions and/or individual farmers within the district would use additional local groundwater (i.e., groundwater pumped from wells owned and operated by farmers) to meet demands within the district (refer to Appendix C). This would occur with or without the Project, although the Project would exacerbate this condition.

Under current SWP allocation rules (With Monterey Amendment) and with implementation of the Project, WRMWSD could expect to receive at least 180,000 AF (their minimum demands under favorable economic conditions) approximately 31 percent of the time, and at least 190,000 AF approximately 20 percent of the time. In addition, WRMWSD could expect to receive an

Table 3.15-16. WRMWSD's SWP Table A Supply at 2020 SWP Demand Conditions, Under all SWP Allocation Scenarios[1]
(all values in AF, rounded to the nearest 100 AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year Period[2]*
With Monterey Amendment	Without the Project	238,100	185,700	53,500	102,200
	With the Project	197,100	153,800	44,300	84,600
	Difference[3]	***41,000***	***32,000***	***9,200***	***17,600***
Without Monterey Amendment	Without the Project	238,100	165,300	42,200	98,100
	With the Project	197,100	136,900	35,000	81,200
	Difference[3]	***41,000***	***28,500***	***7,300***	***16,900***
With Article 18(b) Implemented[4]	Without the Project	113,800	202,900	12,300	99,300
	With the Project	94,200	168,000	10,200	82,200
	Difference[3]	***19,600***	***34,900***	***2,100***	***17,100***

Note: Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
2. Multiple dry year period supplies shown are average annual supplies over the four-year period.
3. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.
4. Under the SWP allocation scenario With Article 18(b) Implemented, the Table A Amounts shown are estimates of WRMWSD's reduced Table A Amount, based on its proportionate share of a reduced SWP minimum project yield of 2.0 million AF. The supplies shown include both Table A supplies and scheduled surplus supplies estimated to be available, with surplus supplies allocated based on priority for agricultural use.

average SWP Table A supply approximately 11 percent greater than historic SWP deliveries to WRMWSD from 1990 to 1999 (137,360 AF). Considering all allocation scenarios, with implementation of the Project WRMWSD could expect to receive average SWP Table A supplies ranging from approximately 136,900 AF to 168,000 AF, which is approximately 0.3 percent less to 22 percent more than the amount of historic SWP deliveries to WRMWSD from 1990 to 1999.

As previously discussed, the decision to use local groundwater (i.e., groundwater pumped from wells owned and operated by farmers) or other previously banked water supplies on lands within WRMWSD is predominately an economic decision made by farmers. Due to the complexity of factors that may be considered by individual farmers when deciding to use local groundwater in-lieu of using imported water, the exact amount of additional reliance on groundwater that may occur in dry years cannot be determined (refer to Appendix C). Because the Project could result in a reduction in average year SWP supplies below historic average deliveries to WRMWSD from 1990 to 1999 (only in the Without Monterey Amendment scenario) of up to 9,200 AF of Table A water in a single dry year, and up to 17,600 AF of Table A water in a multiple dry year period, this is assumed to be the amount of additional use of local groundwater that could be contributed by the Project in these year types. These amounts are small relative to the total amount of water in storage in the Kern County Groundwater Basin (total storage is 40 million AF; DWR 2003a) and the White Wolf sub-basin (total storage is about 2.5 million AF; BE 1975). Because groundwater levels in the portions of these basins underlying

WRMWSD have been generally increasing over time (BE 1995), indicating that the basins could sustain an increase in use under these limited conditions without resulting in a net deficit in aquifer volume or a lowering of the local groundwater table, impacts to groundwater would be less than significant.

For reasons similar to those identified above, the Project would result in a minor reduction in the amount of unscheduled surplus water/Article 21 water that WRMWSD could obtain, although this reduction would not materially affect WRMWSD's surplus water supply.

Comparison of WRMWSD Supplies Presented to Supplies based on DWR's Recent SWP Delivery Reliability Report – As discussed in section 3.15.2.2, DWR recently completed an analysis of the delivery reliability of the SWP in its SWP Delivery Reliability Report. This DWR report presents the results of CALSIM II model studies run using current allocation rules (i.e., With Monterey Amendment). Starting with these same DWR results and applying the same methodology suggested by DWR in its report, the Project would result in a decrease in WRMWSD's SWP supplies: under "existing" (2001 in DWR's SWP Delivery Reliability Report) conditions of 29,400 AF, 8,000 AF, and 14,800 AF under the average year, single dry year, and multiple dry year period conditions, respectively; and under 2020 conditions of 30,600 AF, 8,200 AF, and 15,000 AF under the average year, single dry year, and multiple dry year period conditions, respectively.

Water Quality

All SWP Allocation Scenarios under Existing SWP Demand Conditions – Overall, within the WRMWSD the Project may result in a minor increase in the use of previously banked water and local groundwater in the drier hydrologic years. Water banked outside of the WRMWSD would be delivered to the district as a SWP water exchange, and would be the same quality as SWP supplies. Water banked within the WRMWSD would be the same quality as the groundwater quality, which has slightly higher TDS than SWP water. The Project may result in a minor increase in the use of water banked with the district and groundwater in the drier hydrologic years, and these sources generally have higher TDS concentrations. Because this water is of sufficient quality for agricultural operations, impacts to surface water quality would be less than significant. Because the increased use of water banked within the district and local groundwater would be minor and would occur infrequently (in drier hydrologic years), the minor use of these supplies and the additional increase in TDS from irrigation related uses would result in less than significant impacts to groundwater quality.

All SWP Allocation Scenarios under 2020 SWP Demand Conditions - The decrease in SWP delivery reliability due to an increase in future levels of demand by M&I Contractors would result, with the transfer, in the use of more groundwater and banked water to meet agricultural needs within the WRMWSD. For the reasons noted above, impacts to surface and groundwater quality would be less than significant.

INDIRECT IMPACTS

No indirect impacts to water resources would occur.

Castaic Lake Water Agency

DIRECT IMPACTS

Potential direct impacts from implementation of the Project to water supply, including groundwater resources and water quality are addressed below. Because the Project would be implemented using existing CLWA facilities and new facilities would not be required, construction and land disturbance related impacts would not occur.

The Project increases CLWA's Water Supply Contract Table A Amount by 41,000 AF (from 54,200 AF to 95,200 AF, an increase of 75.6 percent). Because SWP water supplies are allocated among Contractors on the basis of Table A Amounts, this increase in Table A would result in an increase in the total amount of SWP water that CLWA could obtain (including both Table A and any available surplus water supplies). Under all SWP allocation and hydrologic scenarios, the Project would result in a maximum increase in the SWP Table A water available to CLWA of approximately 75.6 percent.

As discussed in section 3.15.2.2, the supplies presented below are Table A supplies only (or in the case of the allocation scenario With Article 18(b) Implemented, Table A supplies and scheduled surplus water), and do not include unscheduled surplus water or Article 21 water.

Water Supply

All SWP Allocation Scenarios under Existing SWP Demand Conditions – Table 3.15-17 presents the results of the analysis of CLWA's SWP Table A supply under the existing (1998) SWP demand conditions used in the DWRSIM study, and under the various hydrologic conditions (average year, single dry year, and multiple dry year period) and water allocation scenarios (With Monterey Amendment, Without Monterey Amendment, and With Article 18(b) Implemented) considered. Under current SWP allocation rules (With Monterey Amendment), implementation of the Project would result in an increase in the Table A supply available to CLWA of 34,400 AF, 9,200 AF, and 18,100 AF under the average year, single dry year, and multiple dry year period conditions, respectively. Considering all allocation scenarios, the largest increase in supplies available to CLWA with implementation of the Project would be 35,300 AF under average year conditions With Article 18(b) Implemented; 9,200 AF under a single dry year With Monterey Amendment; and 18,100 AF under a multiple dry year period With Monterey Amendment. The Project would increase CLWA's SWP Table A Amount and increase the amount of SWP water that could be delivered to CLWA. This increased water supply would serve the needs of both existing water users and a portion of future water demand from anticipated growth within the CLWA service area.

Because CLWA could obtain up to an additional 41,000 AF of Table A water (depending on hydrologic conditions) to meet water demands of existing users and a portion of future water demand from anticipated growth within the service area, the Project would have a beneficial impact to water supplies in the CLWA service area. Because the Project would increase the amount of SWP water delivered to the CLWA service area, replacing water that could have otherwise been pumped from groundwater, the Project would have a beneficial impact to groundwater resources via indirect recharge (or percolation) through irrigation with SWP water.

Table 3.15-17. CLWA's Total SWP Table A Supply at Existing SWP Demand Conditions, under all SWP Allocation Scenarios[1]
(all values in AF, rounded to the nearest 100 AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year Period*
With Monterey Amendment	Without the Project	54,200	46,500	12,100	24,000
	With the Project	95,200	80,900	21,300	42,100
	Difference[3]	***41,000***	***34,400***	***9,200***	***18,100***
Without Monterey Amendment	Without the Project	54,200	47,400	13,100	25,200
	With the Project	95,200	80,100	13,100	38,900
	Difference[3]	***41,000***	***32,700***	***0***	***13,700***
With Article 18(b) Implemented[4]	Without the Project	25,900	46,400	12,900	24,400
	With the Project	45,500	81,700	14,900	41,700
	Difference[3]	***19,600***	***35,300***	***2,000***	***17,300***

Note: Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771. This study used 1998 DWR estimates of then-existing SWP Contractor demands.
2. Multiple dry year period supplies shown are average annual supplies over the four-year period.
3. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.
4. Under the SWP allocation scenario With Article 18(b) Implemented, the Table A Amounts shown are estimates of CLWA's reduced Table A Amount, based on its proportionate share of a reduced SWP minimum project yield of 2.0 million AF. The supplies shown include both Table A supplies and scheduled surplus supplies estimated to be available, with surplus supplies allocated based on priority for agricultural use.

As was discussed previously, the supplies presented above do not include unscheduled surplus water/Article 21 water. Generally, when this type of water is available, there is enough to meet all Contractor requests for it. It is only when total Contractor requests for this water exceed the amount available that DWR would need to allocate that limited supply among Contractors. If this situation occurred, the Project could result in an increase in the amount of unscheduled surplus water/Article 21 water that CLWA could obtain (because it is allocated based on Contractor Table A Amounts). Since this increase would only occur infrequently, the increase in the amount of unscheduled surplus water/Article 21 water that CLWA could obtain would not materially affect CLWA's surplus water supply.

All SWP Allocation Scenarios under 2020 SWP Demand Conditions – Table 3.15-18 presents the results of the analysis of CLWA's SWP Table A supply under the 2020 SWP demand conditions used in the DWRSIM study, and under the various hydrologic conditions (average year, single dry year, and multiple dry year period) and water allocation scenarios (With Monterey Amendment, Without Monterey Amendment, and With Article 18(b) Implemented) considered. Under current SWP allocation rules (With Monterey Amendment), implementation of the Project would result in an increase the Table A supply available to CLWA of 32,000 AF, 9,200 AF, and 17,600 AF under the average year, single dry year, and multiple dry year period conditions, respectively. Considering all allocation scenarios, the largest increase in supplies available to CLWA with implementation of the Project would be: 34,900 AF under the average year With Article 18(b) Implemented; 9,200 AF under a single dry year With Monterey Amendment; and 17,600 AF under a multiple dry year period With Monterey Amendment.

The Project would increase CLWA's SWP Table A Amount and increase the amount of SWP water that could be delivered to CLWA. This increased water supply would serve the needs of both existing water users and a portion of future water demand from anticipated growth within

the CLWA service area. Because CLWA could obtain up to an additional 41,000 AF of Table A water (depending on hydrologic conditions) to meet water demands of existing users and a portion of future water demand from anticipated growth within the service area, the Project would have a beneficial impact to water supplies in the CLWA service area. Because the Project would increase the amount of SWP water delivered to the CLWA service area, replacing water that could have otherwise been pumped from groundwater, the Project would have a beneficial impact to groundwater resources via indirect recharge (or percolation) through irrigation with SWP water.

For reasons similar to those identified above, the Project would result in an increase in the amount of unscheduled surplus water/Article 21 water that CLWA could obtain, although this increase would not materially affect CLWA's surplus water supply.

Table 3.15-18. CLWA's Total SWP Table A Supply at 2020 SWP Demand Conditions, under all SWP Allocation Scenarios[1]
(all values in AF, rounded to the nearest 100 AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year Period[2]*
With Monterey Amendment	Without the Project	54,200	42,900	12,200	23,300
	With the Project	95,200	74,900	21,400	40,900
	Difference[3]	***41,000***	***32,000***	***9,200***	***17,600***
Without Monterey Amendment	Without the Project	54,200	43,500	12,400	23,300
	With the Project	95,200	72,000	19,600	40,200
	Difference[3]	***41,000***	***28,500***	***7,300***	***16,900***
With Article 18(b) Implemented[4]	Without the Project	25,900	43,000	12,800	23,300
	With the Project	45,500	78,000	15,000	40,400
	Difference[3]	***19,600***	***34,900***	***2,100***	***17,100***

Note: Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
2. Multiple dry year period supplies shown are average annual supplies over the four-year period.
3. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.
4. Under the SWP allocation scenario With Article 18(b) Implemented, the Table A Amounts shown are estimates of CLWA's reduced Table A Amount, based on its proportionate share of a reduced SWP minimum project yield of 2.0 million AF. The supplies shown include both Table A supplies and scheduled surplus supplies estimated to be available, with surplus supplies allocated based on priority for agricultural use.

Comparison of CLWA Supplies Presented to Supplies based on DWR's Recent SWP Delivery Reliability Report – The existing SWP water supplies included in Table 3.15-7 are based on results from DWR's recent SWP Delivery Reliability Report, which presents the results of CALSIM II model studies run using current allocation rules (i.e., With Monterey Amendment). Starting with these same DWR results and applying the same methodology suggested by DWR in its report, the Project would result in an increase in CLWA's SWP supplies: under "existing" (2001 in DWR's SWP Delivery Reliability Report) conditions of 29,400 AF, 8,000 AF, and 14,800 AF under the average year, single dry year, and multiple dry year period conditions,

respectively; and under 2020 conditions of 30,600 AF, 8,200 AF, and 15,000 AF under the average year, single dry year, and multiple dry year period conditions, respectively.

Water Quality

The Project would result in the delivery of additional SWP water to the CLWA service area when demands are sufficient to make such deliveries feasible. Although SWP water quality varies from year to year depending on hydrologic conditions, regardless of the SWP allocation scenario (With Monterey Amendment, Without Monterey Amendment, and With Article 18(b) Implemented) and the SWP demand conditions (existing or 2020), the Project would not result in a direct impact to water quality within the CLWA service area. CLWA and the local purveyors would continue to meet all applicable drinking water standards and water quality criteria.

The Project would not result in direct surface water quality impacts. CLWA has no discharge permits regulating water quality and is only regulated with regard to the drinking water quality of distributed potable water. It is the actual use of the imported water and discharge after use (i.e., as wastewater) that has the potential to affect water quality of surface waters. This potential impact was considered in the Basin Plan and is considered in the discussion of indirect growth-related impacts in Chapter 4. The Project would not affect the frequency and magnitude of flood flow releases or spills from Castaic Lake. These events are related to rights of downstream users and not related to CLWA or the Project.

INDIRECT IMPACTS

Potential impacts from population growth that could occur as an indirect impact of the Project are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.15.3 Mitigation Measures

3.15.3.1 State Water Project and Associated Facilities

No significant direct or indirect impacts to water resources were identified; therefore no mitigation measures are required.

3.15.3.2 Wheeler Ridge-Maricopa Water Storage District

No significant direct or indirect impacts to water resources were identified; therefore no mitigation measures are required.

3.15.3.3 Castaic Lake Water Agency

No significant direct impacts to water resources were identified; therefore no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

3.15.4 Significant Unavoidable Impacts

No direct or indirect significant unavoidable adverse impacts have been identified within the SWP and associated facilities or within WRMWSD. No direct significant unavoidable adverse impacts have been identified within the CLWA service area. Indirect impacts within the CLWA service area, including significant unavoidable adverse impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts.

4.0 GROWTH-INDUCING EFFECTS AND GROWTH-RELATED IMPACTS

4.1 GROWTH-INDUCING EFFECTS

CEQA Requirements

CEQA Guidelines Section 15126.2(d) states that an EIR must discuss the ways in which a Project could:

- foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment;
- remove obstacles to population growth;
- require the construction of new community facilities that could cause significant environmental effects;
- encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The Guidelines further state that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. The analysis below discusses whether the Project is growth inducing using the CEQA definition. Consistency with growth projections included in local and regional planning documents is addressed in Chapter 5.

General Factors Affecting Population Growth

Growth does not necessarily result from only one project or factor in a community. Rather, several factors affect the location, size, direction, timing, type and rate of population growth, depending on the region where the community is located. These factors include local government planning, public services, natural resources, economic climate, and political and environmental concerns. City and county planning agencies adopt and administer general and specific plans, zoning maps and ordinances, and other planning documents that contain policies and maps to identify the intensity and type of development that would be allowed in specific locations. As part of the local government development approval process, wholesale and retail water purveyors provide information on their ability to serve additional water users; however, local jurisdictions other than wholesale or retail water purveyors ultimately control development approval decisions.

Although local governments play a role in growth management, the location and timing of growth also depends on economic factors such as the availability and cost of developable land, recessions in local and national economies, interest rates, and demand for housing. Political factors include state and local laws that mandate businesses to comply with certain rules, regulations, and permitting requirements that address environmental and community concerns. Other political decisions also impact growth, such as alleviation of property taxes as an incentive to lure businesses to certain communities. Quality of life issues such as crime, climate, air quality, traffic and commuting distances, as well as the availability, cost and quality

of community services such as schools, transportation facilities, recreation facilities, and police and fire protection, may also be important factors influencing the timing and location of growth.

Growth Inducement Associated with the State Water Project and Associated Facilities

The Project does not include construction or modification of existing SWP facilities, nor would it change the current operating criteria or materially change the operation of the SWP and its associated facilities. As described in Chapter 3, implementation of the Project would result in no impacts or minor impacts to environmental resources associated with the SWP, none of which would trigger any of the four CEQA criteria listed above. The Project would not be growth inducing in the areas that comprise the SWP and its associated facilities.

Growth Inducement in WRMWSD

The Project does not include construction of new facilities or the modification of existing facilities within WRMWSD; nor would it change their existing operation. As described in Chapter 3, implementation of the Project would result in no impacts or minor impacts to environmental resources within the WRMWSD, none of which would trigger any of the four CEQA criteria listed above. The Project would not be growth inducing in the areas that comprise the SWP and its associated facilities.

Growth Inducement in the CLWA Service Area

The Project is an action by CLWA to maintain the water supply needed to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. As described in section 3.0, however, in order to provide a "worst-case" analysis, it is assumed that all of the Project water would be used to serve new population. Thus, it is assumed that the Project could serve 106,700 new persons and 35,600 new housing units given an average year water supply. The Project would remove an obstacle to population growth by providing additional SWP water within the CLWA service area. Because it would remove such an obstacle, the Project may indirectly foster economic or population growth or the construction of additional housing within the CLWA service area. CEQA Guidelines Section 15126.2 (d) states that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. Potential environmental impacts from growth that could result from the Project are addressed in section 4.2 below.

4.2 GROWTH-RELATED IMPACTS

Introduction

CEQA Guidelines Section 15064(d) requires that an EIR evaluate the indirect impacts of a project. Indirect impacts are those that are caused by a project and are reasonably foreseeable, but that may occur later in time or at some distance from the project site(s). Growth-related impacts are the indirect impacts of population growth or development, such as the conversion of open land to developed land, added traffic, and increased demand for public services.

CLWA has the responsibility to provide wholesale water to retail purveyors within the CLWA service area, but does not approve the locations of new development. City and county

planning agencies are responsible for creating land use plans that direct where development should occur and for enforcing those plans. The Project would provide water that could be used by new development in the CLWA service area, but it would not affect the specific locations of planned development.

This EIR generally discusses growth-related impacts in a qualitative manner based on the likely changes that could occur as a result of future land use changes and/or specific development projects within the CLWA service area. It references impacts identified in the Final EIR for the City of Santa Clarita General Plan (City of Santa Clarita 1991) since this document provides the most current and comprehensive overview of environmental impacts resulting from projected growth in the Santa Clarita Valley.

4.2.1 Aesthetic/Visual Resources

Significant growth-related impacts to aesthetic/visual resources may include changes to the visual characteristics and resources of the area through the development of open space and further urbanization of hillside and natural areas. Development could result in substantial adverse effects on scenic vistas, substantially damage scenic resources, or substantially degrade the existing visual character or quality of individual sites and their surroundings. Further, potential development within the CLWA service area could also result in an increase in the amount of night lighting and unwanted glare in presently undeveloped areas. Haphazard development could obstruct scenic views of, and from, the project area and contribute to a "confused urban image."

Mitigation Measures

Impacts to aesthetic/visual resources would be reduced by local governments implementing existing policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans (see Table 4.2-1 for a listing of applicable policies). Impacts may not be fully mitigable to less than significant, however, depending on the magnitude of future development and its specific location. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.2 Agricultural Resources

The amount of land designated for agriculture within the Santa Clarita Valley planning area is small (roughly 1 square mile [City of Santa Clarita 1991]). Most of the land designated for agricultural purposes is present in the Ventura County portion of the CLWA service area. This land is located on the Santa Clara River floodplain, primarily along the Highway 126 corridor. A substantial portion of the agricultural land in the Los Angeles County portion of the service area has been recently re-designated by the County of Los Angeles to other land uses defined in the Newhall Ranch Specific Plan. The State of California Farmland Mapping and Monitoring Program has designated approximately 3 percent of the mapped area within the CLWA service area as either Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Impacts to agricultural resources could be significant because there is a potential for these lands to be

Table 4.2-1. Summary of Mitigation Measures from Plans and Policies

Environmental Resources	Applicable Plans and Policies					
	County of Los Angeles –General Plan	*County of Los Angeles - Santa Clarita Area Plan*	*City of Santa Clarita – General Plan*	*County of Ventura – General Plan*	*County of Ventura – Piru Area Plan*	*Other Plans*
Aesthetic/Visual Resources	Scenic Highways Element Circulation policies 9 through 14. Conservation and Open Space Element policies 18, 19, and 24	Circulation Element contains policies 4.1 - 4.3 Community Design Element policies (1.1, 2.1, 3.1, 3.2 through 3.7)	Community Design Element policies 1.1 through 1.3, 2.1 through 2.6, 3.1 through 3.6, 4.1 through 4.4, 5.1 through 5.3, 6.1 through 6.8, 7.1 through 7.4, 8.1 through 8.5, 9.1 through 9.10, 10.1 through 10.5, and 11.1 through 11.9	Scenic Resources policies 1 through 5	Scenic Resources policies (1 through 5)	None
Agricultural Resources	Land Use policy 7, 20 and 21. Conservation and Open Space Element policy 7	None	None	Farmland Resources policies 1 through 6	Agricultural Soils policies 1 and 2	None
Air Quality	Conservation and Open Space Element policy 1	Environmental Resources Management Element policy 1.8	Air Quality Element 1.1, 1.2, 7.1, 8.1 through 8.3, 9.1, 14.1, 15.1, and 15.2. Mobile emissions are controlled by policies 1.1, 1.2, 12.1 through 12.3, 2.1 through 2.5, 3.1, 4.1, 5.1, 6.1, 10.1, 10.2, 11.1, and 11.2	Air quality policies 1 through 6	Air quality policies 1 through 5	SCAQMD *1997 Air Quality Management Plan* and the *1999 Revised Ozone Plan* SCAQMD proposed comprehensive plan update, *Proposed 2003 Air Quality Management Plan*
Biological Resources	Conservation and Open Space Element policy 8 and 13	Land Use Element policy 5.3 and 5.4. Environmental Resources Management Element policies 1.1through 1.4, 1.9, and 2.1 through 2.3	Land Use Element policy 1.10. Open Space and Conservation Element policies 1.1, 1.5, 1.6, 1.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 5.5, and 7.7	Biological Resources policies 1 through 5	Biological Resources policies 1, 2 and 3	Section 404 of the Clean Water Act, Section 10 of the Endangered Species Act, and Section 1600 of the Fish and Game Code

Table 4.2-1. Summary of Mitigation Measures from Plans and Policies

Environmental Resources	Applicable Plans and Policies					
	County of Los Angeles –General Plan	*County of Los Angeles - Santa Clarita Area Plan*	*City of Santa Clarita – General Plan*	*County of Ventura – General Plan*	*County of Ventura – Piru Area Plan*	*Other Plans*
Cultural Resources	Conservation and Open Space Element policies 20 through 23	Environmental Resources Management Element policy 1.6 and 1.7	Open Space and Conservation Element policies 10.1 through 10.6	Paleontological and Cultural Resources policies 1 through 6	Cultural Resources policies 1 through 3	None
Geology, Soils, and Minerals	Land Use Element policies 7, 25, 26, and 28. Safety Element policies 1 through 7, 8, and 10. Conservation and Open Space Element policy 17	Land Use Element policies 4.1, 4.2. Safety Element policy 3.3, and 4.2. Environmental Resources Management Element policy 3.3	Open Space and Conservation Element policies 2.2, and 5.1. Safety Element policies 1.3 through 1.6, 1.8, 1.12, 1.13	Hazards policies 1 through 3. Fault Rupture policies 1 through 6. Ground Shaking policy 1. Seiche policies 1 and 2. Liquefaction policy 2, Subsidence policies 1 through 3, Expansive Soils policies 1 through 3, and Landslides/Mudslides policies 1 through 3. Water Resources policy 3. Mineral Resources policy 6 and 8	This plan contains goals for protecting sand, gravel, oil, and gas resources, and avoiding land uses that would preclude or hamper access to or extraction of such resources	State of California Uniform Building Code.
Hazards and Hazardous Materials	Conservation and Open Space Element policy 29. Safety Element's Wildland and Urban Fire Hazards policies 15 through 19. Hazardous Materials policies 20 through 24. Emergency Response, Preparedness and Recovery policies 25 through 35. Research and Safety Information Systems policies 36 through 38	Land Use Element policy 4.1. Environmental Resources Management Element policy 4.3. Safety Element policy 2.1	Safety Element policies 2.1, 3.1 through 3.10, and 4.1 through 4.5	Hazardous Materials and Waste policies 1 through 5. Fire Hazards policies 1 through 4	Fire Hazards policies 1 through 3.	None
Land Use and Planning	Land Use Element policies	Land Use Element policies	Land Use Element policies	Land Use Element policies 1 through 11	General land use policies 1 through 8	None
Noise	Noise Element policies 1 though 16	Noise Element policies 1.2 and 1.3	Noise Element policies 1.2 and 1.4, 2.1 through 2.8, 3.1 through 4.3	Noise policies 1 through 3	Noise policies 1 through 3	None

Table 4.2-1. Summary of Mitigation Measures from Plans and Policies

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Environmental Resources	Applicable Plans and Policies					
	County of Los Angeles –General Plan	*County of Los Angeles - Santa Clarita Area Plan*	*City of Santa Clarita – General Plan*	*County of Ventura – General Plan*	*County of Ventura – Piru Area Plan*	*Other Plans*
Population and Housing	Population projections	Population projections and Land Use Element policies	Population projections and Land Use Element policies	Population projections	Land use policy and associated building intensity/population density standards	None
Public Services	None	Land Use Element policy 7.1	Land Use Element policies 1.2 through 1.5. Public Services, Facilities, and Utilities Element 1.2 through 1.5, 1.14, 1.16 through 1.18, 2.1, and 2.2	Public Facilities and Services policies 1 through 3. Law Enforcement and Emergency Services policies 1 through 5. Fire Protection policies 1 through 2. Fire Hazards policies 1 through 4	Education policies 1 through 3. Law Enforcement policies 1 through 3. Fire Protection policy 1	Leroy F. Green School Facilities Act of 1998 (SB 50) provides a statewide financing program for school facilities
Recreation	Conservation and Open Space Element policies 30 through 33	Environmental Resources Management Element policies 5.1 through 5.7. Trails policies 6.1 through 6.6. Bikeways policies 7.1 through 7.6	Parks and Recreation Element policy 4.1	Parks and Recreation policies 1 through 3 and 6	Recreation policies 2 and 3	Los Angeles County Ordinance 21.24.340 *et seq.*, the Parkland Dedication Ordinance, requires that the subdivider of a residential subdivision "shall provide local park space to serve the subdivision, pay a fee in lieu of provision of such park land . . provide local park space containing less than the required obligation but developed with amenities equal in value to the park fee, or do a combination of the above.
Transportation and Circulation	Transportation Element Circulation policies 1 through 41. Plan of Bikeways policy 2	Circulation Element policies 1.1 through 1.7, and 2.1 through 2.3	Land Use Element policies 1.1, 1.8,and 1.9	Transportation/Circulation policies 1 through 6	Transportation and Circulation policies 1 through 6	Southern California Association of Governments – 2001 Regional Transportation Plan

Table 4.2-1. Summary of Mitigation Measures from Plans and Policies

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Environmental Resources	Applicable Plans and Policies					
	County of Los Angeles –General Plan	*County of Los Angeles - Santa Clarita Area Plan*	*City of Santa Clarita – General Plan*	*County of Ventura – General Plan*	*County of Ventura – Piru Area Plan*	*Other Plans*
Utilities/Service Systems	Public Facilities policies 1 through 10, 12 through 15, 17 through 20, and 25	Public Services and Facilities Element policies 2.1 and 2.2. Land Use Element policy 7.1	Public Services, Facilities, and Utilities Element policies 1.2 through 1.5, 1.14, 1.16 through 1.18, 2.3, 2.6, 2.7, 5.1, and 5.6	Waste Treatment and Disposal Facilities policies 1 through 6. Flood Control and Drainage Facilities policies 1 and 2	Sanitation Services policies 1 and 3	None
Water Resources	Conservation and Open Space Element policies 4 through 6, and 26. Safety Element policies 11 through 14	Public Services and Facilities Element policies 1.1, 1.2, 3.3, and 4.1	Open Space and Conservation Element policies 5.1 through 5.3, 5.6, and 7.1 through 7.15, and 7.3. Public Services, Facilities, and Utilities Element policies 1.2, 1.3 through 1.7, and 1.8. Public Safety Element policy 1.10	Water Resources policies 1 through 5. Flood Hazards policies 1 through 4. Water Supply Facilities policies 1 and 2	Water policies 1 and 2. Flood Hazards policies 1 through 3	The LARWQCB Basin Plan and Santa Clara River Basin Plan

converted to non-agricultural use or for changes in agricultural zoning to be approved by local jurisdictions in order to allow a higher density or intensity of development.

Mitigation Measures

Impacts to agricultural resources would be mitigated to less than significant by local governments implementing existing policies listed in Table 4.2-1 of the County of Los Angeles General Plan, the County of Ventura General Plan, and the Piru Area Plan since these contain measures to preserve and protect agricultural land. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.3 Air Quality

Population, employment, and manufacturing growth would result in increased air pollutant emissions for which the SCAB does not currently meet federal or state standards. Toxic emissions may result from some industrial development. Additionally, mobile emissions from vehicle operations would increase, including localized CO concentrations and PM_{10} emissions. Fugitive dust emissions also would result from construction.

A determination of the Project's consistency with the 2003 AQMP, which includes assumptions and objectives that demonstrate future attainment of the ambient air quality standards within the project region, is largely dependent on the planning factors selected to estimate growth served by the Project. The SCAQMD used SCAG demographic and economic factors found in the 2001 Regional Transportation Plan (RTP) to forecast future emissions in the 2003 AQMP. SCAG currently projects that the 2025 population for the Santa Clarita Valley will be 352,382, with 126,563 households (personal communication, P. Gutierrez 2003). The Project can serve approximately 106,700 persons. Adding this to the 2000 population of 190,000 produces an estimated population of 296,700, which is lower than the SCAG 2025 projection. Therefore, the Project would be consistent with the 2003 AQMP.

Other impacts would be significant because development could violate air quality standards or contribute substantially to an existing or projected air quality violation. It also could result in a cumulatively considerable net increase in certain criteria pollutants for which the region is in non-attainment, and it could expose sensitive receptors to substantial pollutant concentrations. Certain types of industrial development could create objectionable odors affecting a substantial number of people if constructed without appropriate mitigations.

Mitigation Measures

Impacts to air quality would be reduced by local governments implementing existing policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans. Additionally, compliance with SCAQMD plans also would reduce air quality impacts (see Table 4.2-1). All impacts may not be reduced to less than significant levels, particularly since the Project area does not currently meet federal or state standards. Specific mechanisms for implementing these plans and policies would be determined in the course of project-specific

environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.4 Biological Resources

The Project would provide water for land development, thereby indirectly affecting biological resources. Impacts to threatened and endangered species and other sensitive biological resources within the CLWA service area, including wetlands, generally would be adverse due to the conversion and degradation of habitat. Although increased water use may increase certain types of habitat areas (e.g., through increased runoff) resulting in a positive impact to wetlands, related land development would entail the loss, degradation, or fragmentation of habitats, which may result in local native plant and wildlife populations, including sensitive species, being reduced in size and made increasingly vulnerable to local extinction. Non-native species introduced through ornamental landscaping or habitat disturbances could compete with native species or invade previously disturbed habitats, including those of special status species. Additionally, development could disrupt established wildlife corridors and impede the use of native wildlife nursery sites. These impacts would be significant.

Increased wastewater treatment plant discharges, additional runoff from impervious surfaces (i.e., surfaces that are incapable of being penetrated by moisture) and new runoff from the irrigation of urban landscaping could increase the amount of wetlands and aquatic habitat below such discharges. However, water quality below these discharges could be degraded from pollutants (both point and non-point sources) carried in these waters. This could have a substantial adverse effect on riparian habitat and sensitive fish and amphibian populations, which would be a significant impact.

Development also could result in conflicts with local policies and ordinances protecting biological resources, which would be a significant impact. As noted in section 3.4, Biological Resources, however, there are no adopted HCPs or NCCPs within the CLWA service area. Federal and State Endangered Species Act compliance, as necessary, has been accomplished on a development-specific basis.

Mitigation Measures

Impacts to biological resources would be reduced by local governments implementing the existing policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans, although all impacts may not be reduced to less than significant depending on the magnitude and specific location of development (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts. Regulatory agencies such as the U.S. Army Corps of Engineers (which has regulatory authority over wetlands), U.S. Fish and Wildlife Service, and California Department of Fish and Game also may impose permit conditions that reduce significant impacts.

4.2.5 Cultural Resources

As discussed in the EIR for the City of Santa Clarita General Plan, excavation and grading activities associated with future development could result in significant impacts to

archaeological, historical, and paleontological resources. Development also could result in significant impacts associated with the disturbance of human remains. Significant impacts on cultural resources may include the following:

- grading of prehistoric archaeological or paleontological sites, thereby demolishing the site and eliminating its ability to yield important information;
- construction of new buildings that could impair the setting of a historic structure or district, thereby altering the structure's or district's ability to embody distinctive characteristics of a type or period; or
- excavation of utility trenches for new developments that uncover human remains or a paleontologic deposit, thereby destroying those remains.

Mitigation Measures

Impacts to cultural resources would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since the policies contain measures for either avoiding impacts to such resources or providing adequate documentation of the resources (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies also would also reduce adverse but less than significant project impacts.

4.2.6 Geology, Soils, and Minerals

The County of Los Angeles, City of Santa Clarita, and Ventura County general plans all indicate that the CLWA service area contains a number of seismic hazards. Several active faults located in the general Project area, such as the San Gabriel, San Andreas, San Fernando, and Sierra Madre faults, could cause structural damage as a result of ground shaking, subsidence, and liquefaction. The San Gabriel fault is also capable of causing structural damage as a result of ground rupture. Depending on the location, new construction within the CLWA service area could expose people or structures to adverse effects, including risk of loss, injury, or death involving rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides. Liquefaction is most likely to occur in areas of the CLWA service area that are saturated at very shallow depths, such as adjacent to the Santa Clara River. Due to the rugged, high relief of the foothill and mountainous areas surrounding the Santa Clarita Valley, landslides and unstable slopes are present in many areas of the CLWA service area. The impacts on development are dependent upon the type of construction, proximity to faults, degree of slope, bedrock orientation within slopes, and soil type of individual project sites. Impacts throughout the CLWA service area could be significant.

There also is a potential for the CLWA service area to contain geologic units or soils that are unstable. Future development projects could be subject on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. This would be a significant impact.

As noted in the EIR for the City of Santa Clarita General Plan, new construction could result in localized soil erosion on or adjacent to future development sites, which could result in the loss

of topsoil and siltation of downstream drainages, creeks, and the Santa Clara River. This would be a significant impact.

The County of Los Angeles General Plan, City of Santa Clarita General Plan, and Ventura County General Plan all indicate that the CLWA service area contains expansive soils. Future development could be located on such soils, creating substantial risks to life or property. This would be a significant impact.

The County of Los Angeles General Plan, City of Santa Clarita General Plan, and Ventura County General Plan all indicate that the CLWA service area contains mineral resources such as gold, oil, and aggregate. The EIR for the City of Santa Clarita General Plan notes that if development encroached on mineral resource areas, the extraction of these resources could be incompatible if development is allowed in such areas. To the extent that future development resulted in the loss of availability of a known mineral resource that was of value to the residents of the region and state or 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, impacts would be significant.

Mitigation Measures

Impacts to geology, soils, and minerals would be mitigated to less than significant by local governments implementing the existing policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since these policies contain adequate measure to avoid or reduce such impacts (see Table 4-2). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies also would also reduce adverse but less than significant project impacts.

4.2.7 Hazards and Hazardous Materials

Operations of past and existing businesses and industries in the CLWA service area may have resulted in soil contamination from the use of hazardous materials, spills, or disposal of these materials. Therefore, depending on the specific location, new development on previously contaminated sites may require the removal or remediation of soils before property development can commence. New commercial and residential development also may result in increased transport, use, and disposal of hazardous materials, along with increased risks of hazardous substance releases. Certain types of development could impair implementation of or physically interfere with emergency response plans or emergency evacuation plans, and could result in increased exposure to wildland fires where urbanization is adjacent to such areas. These impacts would be significant. No airport-related risks would occur because the CLWA service area is not located within an airport land use plan area; nor is it in the vicinity of a public airport, public use airport, or private airstrip.

Mitigation Measures

Impacts to hazards and hazardous materials would be mitigated to less than significant by local governments implementing the following policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since these contain adequate measures to avoid or reduce such impacts (see Table 4.2-1). Specific mechanisms for

implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.8 Land Use and Planning

The residential, commercial, and industrial development that could occur in the future in the CLWA service area could convert undeveloped or agricultural portions of the service area to some form of urbanized development. While adopted policies and plans of local jurisdictions would reduce most potential conflicts between incompatible uses, these policies and plans may not eliminate building in some sensitive areas such as hillside management areas, open space areas, and sensitive wildlife habitat areas. In addition, as more land within the CLWA service area is developed, there may be more pressure to build in areas that have greater constraints, such as hillside areas, and to convert open space to developed uses. Depending on the location and type of development, there is the potential for new development to physically divide an established community. Without adequate mitigation, there also is a potential for some conflicts with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating an environmental effect. These land use impacts would be considered to be significant. No HCPs or NCCPs have been adopted within the CLWA service area. Federal and State Endangered Species Act compliance has been accomplished on a development-specific basis. The County of Los Angeles has identified and protected areas of particular environmental concern through the designation of five specific SEAs in the Santa Clarita Valley. City and county planning agencies are responsible for creating land use plans that direct where development should occur and for enforcing those plans. While CLWA has the responsibility to provide wholesale water to water retailers within the CLWA service area, it does not approve the locations of new development. The Project would provide water that could be used by new development in the CLWA service area, but it would not affect the specific locations of planned development.

Mitigation Measures

Impacts to land use and planning would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures to reduce or avoid such impacts (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.9 Noise

Development would result in an increase in ambient noise levels due to the potential increase in associated traffic. Long-term increases in noise levels also could be associated with commercial and industrial development. Residential areas and other sensitive receptors near transportation corridors and other noise generators may experience increased noise. Development also would result in short-term increases in local noise levels from construction and grading activities. Impacts would be significant if noise generated were in excess of local standards or if a substantial temporary or permanent increase in noise occurred. Impacts also

would be significant if development resulted in exposure of persons to excessive groundborne noise or vibration.

Mitigation Measures

Impacts to noise would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures to reduce or avoid such impacts (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.10 Population and Housing

As described in section 3.0, given an average year water supply, it is assumed that the Project could serve 106,700 persons and 35,600 housing units. Impacts would be significant because the Project could indirectly induce substantial population growth in the CLWA service area. The Project would not displace substantial numbers of existing houses or substantial numbers of people.

Mitigation Measures

Impacts to population and housing would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures to reduce or avoid such impacts. Applicable plans and policies are listed in Table 4.2-1. Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.11 Public Services

Growth in the CLWA service area could result in impacts to the following public services:

Police - Increased demand for services from the Los Angeles County Sheriff's Department (which also contracts with the City of Santa Clarita to provide services), the Ventura County Sheriff's Department, and the California Highway Patrol would occur. This would include additional staffing, facilities, and equipment, and could affect response times to handle calls for service. Any special problems posed by new developments (e.g., roadway access or terrain) would be considered at the time the development is reviewed. Impacts could be significant since the new development could require new or physically altered governmental facilities, the construction of which could cause significant environmental impacts.

Fire - Increased demand for services from the Los Angeles County and Ventura County Fire departments and from private providers of emergency response/paramedic services for additional staffing, facilities, and equipment would occur and could affect response times to handle calls for service. Any special problems posed by new developments (e.g., roadway access or terrain) would be considered at the time the development is reviewed. Additional

considerations such as the location of a proposed new development in moderate or high fire hazard zones, the adequacy of water supplies/fire flows, and types of vegetative cover would be taken into account. In addition, State and County fire codes, standards and guidelines exist to which all developments must adhere. Impacts could be significant, since the new development could require new or physically altered governmental facilities, the construction of which could cause significant environmental impacts.

Schools - Growth would generate increased enrollments and the need for additional staffing, facilities, and resources in some or all of the school districts in the CLWA service area. All school districts in the service area have reported that they are either at capacity or are experiencing overcrowding, and temporary facilities are being used in every district. However, newly built schools since 2002 have eased the overcrowding to some degree. Additional enrollments would be considered at the time new development is reviewed, and would include input from affected school districts. Impacts are considered to be significant based on current capacity limitations since additional schools would likely have to be built, which could cause significant environmental impacts.

Libraries - Growth would generate increased demand for library services and associated need for staffing, facilities, and resources (books, magazines, periodicals, etc.) in some or all of the libraries in the CLWA service area. Library services provided by the County of Los Angeles Library Department in the Santa Clarita Valley are currently below planning standards, based on a planning standard of two material items per capita and 0.389 gross square feet of space per capita. Additional demands, including cumulative demands for square feet of library space and related resources would be considered at the time new development is reviewed. Impacts on libraries are considered to be significant based on current shortages, since additional libraries would likely have to be built, which could cause significant environmental impacts.

Mitigation Measures

Impacts to public services would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures to reduce or avoid such impacts (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.12 Recreation

Significant growth-related impacts to recreational resources may include increased demand for recreational resources, such as public parks and trails and other recreation areas. This demand could exacerbate existing shortfalls in local parkland and may outpace the ability of public agencies to provide these resources.

Mitigation Measures

Impacts to recreation would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures to reduce or avoid such

impacts (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts.

4.2.13 Transportation and Circulation

Growth in the CLWA service area would result in the following:

- Daily trips in the service area would potentially increase over current levels.
- There would be a related need for new private or public roadways, parking facilities, and for subsequent road maintenance.
- Increased demand for transit systems could occur, and there may be an alteration of present patterns of circulation.
- Roadways with existing capacity constraints could require upgrading or may experience further deterioration in levels of service.

The EIR for the City of Santa Clarita General Plan noted significant, potentially unmitigable impacts at certain isolated road segments from growth allowed under the General Plan. The segments most likely to be significantly affected are Bouquet Canyon Road near Haskell Canyon Road, McBean Parkway north of State Route 126, Soledad Canyon Road between Sierra Highway and Whites Canyon Road, Rye Canyon Road east of Interstate 5, and San Fernando Road between Newhall Avenue and State Route 14. In general, growth-related impacts would be significant because they could cause an increase in traffic that is substantial in relation to the existing load and capacity of the street system and could cause an exceedance of an established level of service standard. Specific developments could substantially increase hazards due to a design feature, or result in inadequate emergency access or parking capacity. Development also could conflict with adopted plans and policies or programs supporting alternative transportation. Air traffic is projected to increase throughout the southern California region regardless of whether the Project is implemented, and new or expanded airports are being evaluated. Planning efforts for these projects would be required to demonstrate that the new locations/expansions do not result in substantial safety risks.

Mitigation Measures

Impacts to transportation and circulation would be reduced, but not necessarily mitigated to less than significant, by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans due to the delay between the time improvements are needed and the time they can be provided (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts. Impacts also would be reduced by compliance with the SCAG 2001 RTP.

4.2.14 Utilities/Service Systems

Solid Waste. Growth would generate increased demand for solid waste disposal services due to construction-related and operational impacts of new land development. Los Angeles County and Ventura County operate several landfills that serve the CLWA service area. The location and volume of waste generation, including cumulative demands, provision of recycling programs, and existing landfill capacity and expansion plans, would be considered at the time new development is reviewed. Impacts are considered significant, however, because an adequate supply of landfill space has not been ensured for the future and would remain so unless additional landfill space or other disposal alternatives are approved.

Water Treatment. Growth would increase the need for potable water and consequently create an increased demand for water treatment facilities operated by the four local purveyors and CLWA. The current combined capacity of the existing facilities (ESFP at 33.6 mgd and RVWTP at 30 mgd in 2003) is sufficient to treat approximately 40,000 AFY for potable use on an average annual basis and 71,000 AFY while operating at peak capacity. With the ESFP expansion project (construction started in September 2003 and is expected to be completed in 2005), average annual treatment capacity will be increased to approximately 54,000 AFY, and the peak capacity will be 96,000 AFY. During an average year, given implementation of the Project, the total amount of water that could be treated at the two plants (i.e., CLWA's total SWP Table A Amount) would be 81,000 AFY. During average years, the water supply requiring treatment would be greater than the existing peak capacity of the two facilities, but less than the peak capacity that would be present after the ESFP expansion is completed. The Table A Amount would be available to CLWA as needed, and not all would be required in the immediate future. SWP deliveries have never exceeded 41,800 AF, and demand for water treatment would increase incrementally, as development is approved. Given the current expansion of the ESFP, impacts would be less than significant because adequate capacity is being provided to treat the water available as a result of the Project.

Wastewater. Growth would result in an increase in wastewater generation and demand for wastewater treatment primarily at facilities operated by County Sanitation District No. 26 and District No. 32 in Los Angeles County, which service the Santa Clarita Valley. These two districts jointly operate a regional system known as the SCVJSS for which the 2015 Joint Sewerage System Facilities System Plan has been approved (LACSD 1998). The SCVJSS has a current combined capacity (from the Saugus and Valencia treatment plants) of 19.1 mgd and plans to expand capacity to 28.1 mgd by 2004. The System Plan identified the need for further expansion to the practical site capacity of 34.1 mgd by 2010, which has been extended to 2020. To date, the efforts to expand capacity up to 28.1 mgd are on schedule, and completion is expected in Spring 2004. All expansions are occurring at the Valencia plant; however, nitrification and denitrification upgrades are currently underway at both facilities, and should be completed by the end of 2003. The deadline for the final expansion capacity (i.e., for increasing the capacity by 6 mgd from 28.1 to 34.1 mgd) has been extended to 2020 (personal communication, S. Highter 2003). The ultimate expansion is intended to serve a population of 321,000.

Assuming that the 41,000 AF of Table A Amount produces an average year supply of 34,400 AF that is delivered to users, and that roughly 50 percent of the delivered water requires treatment

in a wastewater treatment plant, this would represent approximately 15.5 mgd (3,400 AF x 0.5 = 17,200 AF x 0.33 = 5,676 mg per year divided by 365 = 15.5 mgd).

Based on per capita demand, if the ultimate wastewater treatment plant expansion to 34.1 mgd is intended to serve 321,000 persons, the expansion to 28.1 mgd that is scheduled for completion in 2004 would have the capacity to serve approximately 265,000 persons. The Project can serve approximately 106,700 persons. Adding this to the estimated population in the Santa Clarita Valley of 177,000 persons in 1998 (the original baseline year for the Project) would result in 283,700 persons. Adding this to the 2000 population of 190,000 produces an estimated population of 296,700. Given the approved plans to expand wastewater treatment facilities in the Santa Clarita Valley, impacts would be less than significant because adequate capacity is being provided to treat the water available as a result of the Project.

Storm Water Drainage. New construction would likely require the construction of new storm water drainage facilities or the expansion of existing facilities, which could cause significant environmental impacts.

Mitigation Measures

Impacts to utilities and service systems generally would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures to reduce or avoid impacts. Impacts to solid waste disposal, however, may not be avoidable unless additional landfill capacity is approved and constructed (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies also would reduce adverse but less than significant project impacts.

4.2.15 Water Resources

As local purveyors become increasingly dependent on SWP supplies, which are variable and may be reduced during dry years, local groundwater resources may be required to support a larger portion of the total demand from future development during periods of reduced SWP supplies. Should it occur, this short-term reliance on groundwater resources would be considered a significant impact since it could result in the substantial depletion of groundwater supplies on a short-term basis in dry hydrologic years.

Increased municipal and industrial use of water would increase the amount of water treated at the existing and planned raw and wastewater treatment plants. This could result in additional discharges from the wastewater treatment plants and increased flows in the portion of the Santa Clara River west of Interstate Highway 5. In the future, some of the water presently being discharged into the Santa Clara River could be diverted prior to discharge for landscape irrigation and other permitted uses of reclaimed water within the CLWA service area. Impacts would be significant if future development violated any water quality standard or waste discharge requirements.

The Project would not indirectly affect drinking water quality in the CLWA service area, but it could adversely affect the water quality of surface waters discharged by the local wastewater treatment plants. While the future inflow water to the water reclamation plants would have

approximately the same concentration of chloride and other constituents as present today, the use of the 41,000 AF of Table A Amount would increase the load of chloride and other constituents treated and discharged by these treatment plants. As discussed in section 3.15, however, the LACSD recently has adopted an ordinance that prohibits the installation and use of new self-regenerating water softeners in the Santa Clarita Valley, which would reduce the amount of chloride load in the watershed. The potential indirect impact would be less than significant because new development would be required to comply with this ordinance.

Future development within the CLWA service area could increase the amount of impervious surface (roads, buildings, other paved areas). This could reduce percolation of rainwater to groundwater in the urbanized portions of the CLWA service areas, alter surface flows, and increase the amount and rate of stormwater runoff through storm sewers or other engineered drainages. However, most surface runoff enters the Santa Clara River and recharges the Alluvial Aquifer. As noted in the EIR for the City of Santa Clarita General Plan, development could affect water quality from non-point source discharges. The Project would result in significant indirect impacts from increased urban runoff. The increase in impervious surface also could affect the peak flow rates of floodwaters and could increase flooding on- or off-site of future development. Increased flooding and peak flow rates could result in substantial erosion or siltation on- or off-site. Impacts could be significant.

If new development were allowed in floodplains, it could expose additional persons and property to flood hazards and would impede or redirect flood flows. Development, in particular the placement of impervious surfaces (i.e., surfaces that can not be penetrated by moisture), in areas critical to the recharge of the Alluvial Aquifer and Saugus Formation could reduce the rate of aquifer recharge. This effect would not alter the storage capabilities of these aquifers; however, it could, under certain circumstances, reduce aquifer recharge. These would be considered significant impacts.

Seiches (creation of large waves on a lake or reservoir) could occur as a result of earthquake-induced ground shaking or landslides in Castaic Lake, Pyramid Lake, or Bouquet Reservoir, potentially resulting in flooding of downstream communities. Mudflows also could occur, particularly in mountainous areas, as a result of new development.

Mitigation Measures

Impacts to water resources would be mitigated to less than significant by local governments implementing the policies of the County of Los Angeles, County of Ventura, and City of Santa Clarita general and area plans since they contain adequate measures for reducing or avoiding impacts (see Table 4.2-1). Specific mechanisms for implementing these policies would be determined in the course of project-specific environmental review, as required under CEQA. Implementing these plans and policies would also reduce adverse but less than significant project impacts. Additionally, compliance with the LARWQCB Water Quality Control Plan [Basin Plan] for the Coastal Watersheds of Los Angeles and Ventura Counties, as amended, also would reduce significant and less than significant impacts.

5.0 CONSISTENCY WITH ADOPTED PLANS AND POLICIES

CEQA Guidelines Section 15125(d) requires that a proposed project be compared to existing general and regional plans. The following sections address the consistency of the Project with adopted plans and policies of the local agencies that have planning authority over the area directly affected by the Project, including Los Angeles County, the City of Santa Clarita, and Ventura County for the CLWA service area, and Kern County for the WRMWSD. Project consistency with the SCAG Regional Comprehensive Plan and Guide (RCPG) and RTP also is addressed.

The Project would not result in new construction or the modification of existing SWP facilities, nor would it change SWP operating criteria or otherwise result in material changes to SWP operations. As discussed in detail in Chapter 3, the Project would not adversely affect environmental resources as a result using of SWP facilities between the Banks Pumping Plant and CLWA's Castaic Lake turnout; thus, use of SWP facilities would be consistent with general and regional plans applicable to the Project area, and they are not addressed further.

The discussion also focuses on growth management policies of planning agencies where indirect development could occur (i.e., within the CLWA service area). A discussion of Project consistency with growth projections in the relevant regional, general, or area plans, including those of SCAG, Los Angeles County, the City of Santa Clarita, and Ventura County is included. CLWA's UWMP (CLWA 2000) is addressed in section 5.6 below. Consistency with relevant air quality management plans is included in section 3.3, Air Quality.

5.1 SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENT'S (SCAG) REGIONAL COMPREHENSIVE PLAN AND GUIDE (RCPG) AND REGIONAL TRANSPORTATION PLAN (RTP)

Scoping comments received from SCAG requested a review of the policies listed below. SCAG is a regional planning agency whose functions include regional transportation planning, air quality planning, demographic projections, and the review of projects of regional significance to determine consistency with regional plans, including SCAG's RCPG and RTP. The numbered policies and other text shown in italics below are taken directly from SCAG's comments on the NOP for this EIR.

5.1.1 Regional Comprehensive Plan and Guide

Growth Management Chapter (GMC)

3.03 *The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.*

The Project would be consistent with this policy because it would not conflict with the timing, financing, and location of public facilities, utility systems, and transportation systems.

GMC Policies Related to the RCPG Goal to Improve the Regional Standard of Living

The Growth Management goals to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, strengthen the regional strategic goal to stimulate the regional economy. The evaluation of the proposed project in relation to the following policies would be intended to guide efforts toward achievement of such goals and does not infer regional interference with local land use powers.

3.09 Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.

The Project does not include new construction of water system infrastructure but would provide an additional means of providing wholesale water service. It would be consistent with this policy.

3.10 Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.

The Project would not change local jurisdictions' permitting processes and would be consistent with this policy.

GMC Policies Related to the RCPG Goal to Improve the Regional Quality of Life

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.18 Encourage planned development in locations least likely to cause environmental impact.

While CLWA has the responsibility to provide wholesale water-to-water retailers within the CLWA service area, CLWA does not have the authority to approve new development in its service area. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies.

3.19 Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.

As discussed in Chapter 3, the Project would not directly affect wetlands, woodlands, production lands, or land containing unique and endangered plants and animals. It would not affect groundwater recharge areas but could have the potential to indirectly affect groundwater levels during period of lower than normal deliveries when, and if, potential future development water demands exceed local water supply. The Project could also indirectly reduce demand for groundwater when imported water supplies are high and they are delivered in a higher proportion and groundwater withdrawals are reduced. The Project could result in indirect, growth-related effects to the above-referenced vital resources, as discussed in section 4.2.

CLWA does not have the authority to approve new development in its service area, however. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

3.21 *Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.*

The Project would not have a direct impact on cultural resources. While it could result in indirect, growth-related effects on cultural resources, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

3.22 *Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.*

The Project would not directly result in any development, including development in areas with steep slopes, high fire, flood, or seismic hazards. While it could result in indirect, growth-related development in such areas, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

3.23 *Encourage mitigation measures that reduce noise in certain locations, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.*

The Project would not directly result in any development, including development that would generate noise, or result in exposure to seismic hazards, earthquake damage, or affect emergency response plans. While it could result in indirect, growth-related development that could have such effects, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

GMC Policies Related to the RCPG Goal to Provide Social, Political, and Cultural Equity

The Growth Management Goal to develop urban forms that avoid economic and social polarization promotes the regional strategic goal of minimizing social and geographic disparities and of reaching equity among all segments of society. The evaluation of the proposed project in relation to the policy stated below is intended guide direction for the accomplishment of this goal, and does not infer regional mandates and interference with local land use powers.

3.27 *Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.*

In its function as a water wholesaler, CLWA provides water to purveyors within its service area who, in turn, serve local customers. CLWA provides water without regard to the circumstances of the end-user customers. The Project would be consistent with this policy.

Air Quality Chapter Core Actions

5.07 *Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.*

The Project would not have an impact on local agencies' determination of air quality programs and actions and would be consistent with this policy.

5.11 *Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.*

The Project would not have an impact on SCAG's environmental document review process for government plans and would be consistent with this policy.

Open Space Chapter and Ancillary Goals

Public Health and Safety

9.04 *Maintain open space for adequate protection of lives and properties against natural and man-made hazards.*

The Project would not directly result in any development that would affect open space. While it could result in indirect, growth-related development that could result in the loss of open space, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

9.05 *Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.*

The Project would not directly result in any development, including development in hazardous areas. While it could result in indirect, growth-related development in such areas, as discussed

in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

9.06 Minimize public expenditure for infrastructure and facilities to support urban type uses in areas where public health and safety could not be guaranteed.

The Project would not directly result in public expenditures for infrastructure and facilities to support urban uses and would be consistent with this policy.

Resource Protection

9.08 Develop well-managed viable ecosystems or known habitats of rare, threatened, and endangered species, including wetlands.

The Project would not have a direct effect on ecosystems or known habitats of sensitive species and would not preclude the management of ecosystems or habitats. While it could result in indirect, growth-related development in biologically sensitive areas, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

Water Quality Chapter Recommendations and Policy Options

The Water Quality Chapter core recommendations and policy options related to the two water quality goals: to restore and maintain the chemical, physical and biological integrity of the nation's water; and, to achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

11.02 Encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.

CLWA considers watershed management in its water management and capital improvement planning efforts, along with locally adopted plans. In addition, CLWA has supported local planning efforts intended to provide watershed management. For example, CLWA has participated in meetings to discuss the formulation of the Santa Clara River Enhancement Plan and has provided written comments on the plan. The Project would be consistent with this policy.

11.05 Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.

The Project would not directly affect wetlands and would not affect regional efforts to identify and cooperatively plan for wetlands. While it could result in indirect, growth-related development that could affect wetlands, as discussed in section 4.2, CLWA does not have the

authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

11.06 Clean up the contamination in the region's major groundwater aquifers since its water supply is critical to the long-term economic and environmental health of the region. The financing of such clean-ups should leverage state and federal resources and minimize significant impacts on the local economy.

The treatment of transferred water would result in additional utilization of hazardous chemicals, but the Project would not result in the contamination of the region's aquifers and could result in a smaller percentage of the Santa Clarita Valley's total water supply coming from groundwater sources. Therefore, the Project would be consistent with this policy since it would not result in the contamination of aquifers.

11.07 Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.

Water and reclamation efforts are part of CLWA's water management planning efforts, and the Project would be consistent with this policy.

5.1.2 Regional Transportation Plan

The RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socioeconomic, geographic, and commercial limitations.

Core Regional Transportation Plan Policies

4.02 Transportation investments shall mitigate environmental impacts to an acceptable level.

The Project would not require transportation investments. While it could result in indirect, growth-related development that could require transportation improvements, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

4.04 Transportation Control Measures shall be a priority.

The Project would not directly affect transportation and would not require transportation control measures. While it could result in indirect, growth-related development that could require transportation control measures, as discussed in section 4.2, CLWA does not have the authority to approve the location of new development in its service area or to impose mitigation measures. Rather, the authority and responsibility for approving and mitigating the impacts of

specific development projects is primarily the responsibility of local governments and regulatory agencies. The Project would be consistent with this policy.

4.16 Maintaining and operating the existing transportation system will be a priority over expanding capacity.

The Project would not have a direct impact on the existing transportation system. While it could result in indirect, growth-related development that could affect this system, as discussed in section 4.2, city and county planning agencies are responsible for creating transportation plans that determine whether expansion should occur. CLWA does not have the authority to approve or implement transportation plans. The Project would be consistent with this policy.

5.1.3 Consistency with Growth Projections

The following section addresses the Project's consistency with SCAG's adopted growth forecasts. SCAG adopted demographic forecasts for the Santa Clarita Valley Area (i.e., Regional Statistical Area 8) in 1998 as part of its RTP (SCAG 1998) and updated the forecast in 2001 (SCAG 2001). This analysis is based on the latter forecast since it supersedes the 1998 projections. SCAG currently projects that the 2025 population for the Santa Clarita Valley will be 352,382, with 126,563 households (personal communication, P. Gutierrez 2003). The Project can serve approximately 106,700 persons (see section 4.1 for assumptions). Adding this to the 2000 population of 190,000 produces an estimated population of 296,700, which is lower than the SCAG 2025 projection. The Project also could serve about 35,600 housing units. Adding this to the 63,300 housing units present in the CLWA service area (based on 2000 Census data) would result in 98,900 housing units, which also is less than the 2020 projection. Thus, the Project would serve a portion of the growth projected by SCAG and would be consistent with SCAG's growth projections.

5.2 COUNTY OF LOS ANGELES GENERAL PLAN

5.2.1 Consistency with Policies

General Goals and Policies

18. Conserve the available supply of water and protect water quality.

Conservation is already part of CLWA's water resource management program, and the Project would not affect these water conservation efforts. As noted in section 3.15, Water Resources, the Project would not have a direct effect on water quality and would provide a portion of the water supply necessary to support anticipated future development. It could result in indirect impacts to groundwater supply and water quality that would be mitigable to less than significant by complying with local plans and policies, including the Basin Plan.

43. Maintain a balance between increased intensity of development and the capacity of needed facilities such as transportation, water and sewage systems.

As discussed in section 4.2.13, Transportation and Circulation and section 4.2.14, Utilities/Service Systems, the Project would not directly require or result in the construction or expansion of facilities such as those mentioned in this policy. The 41,000 AF of Table A Amount that would be made available by the Project would be used as needed to support a portion of the anticipated future development in the CLWA service area, which would be consistent with this policy. The portion of the anticipated future development served by the Project's water supply would require construction of additional transportation, water storage and delivery, and sewage collection systems that would either be provided by developers or various service providers, as appropriate. CLWA does not have the authority to approve new development or to increase the capacity of transportation, sewage, and other facilities not related to its role as a wholesale water provider. Rather, this is primarily the responsibility of local governments and regulatory agencies.

Conservation, Open Space, and Recreation

1. *Protect ground water recharge and watershed areas, conserve storm and reclaimed water, and promote water conservation programs.*

The Project could potentially reduce the portion of future water demand in the Santa Clarita Valley that is met by groundwater by providing additional imported surface water supplies. The Project would not include new construction and therefore would not have a direct impact on groundwater recharge and watershed areas. It would serve a portion of anticipated future development that could reduce recharge areas; however, CLWA does not have the authority to approve new development in its service area. Rather, the authority and responsibility for approving and mitigating the impacts of specific development projects is primarily the responsibility of local governments and regulatory agencies. Although the conservation of storm and reclaimed water and other conservation measures are not a part of the Project, it would not in any way inhibit these actions. The Project would be consistent with this policy.

5. *Encourage the maintenance, management, and improvement of the quality of imported domestic water, ground water supplies, natural runoff and ocean water.*

The Project would provide an additional supply of high quality, imported raw water received from the SWP. The delivery of imported water would not directly affect groundwater quality of the Alluvial or Saugus formations; nor would it affect natural runoff or ocean water. The Project would be consistent with this policy.

Safety Element

20. *Review proposed development projects involving the use or storage of hazardous materials, and disapprove proposals, which cannot properly mitigate unacceptable threats to public health and safety to the satisfaction of responsible agencies.*

Transferring an additional 41,000 AF of water for use within the CLWA service area would result in an increased use of hazardous materials to treat water. Any additional

use of hazardous materials to treat the water would be conducted in accordance with existing policies, procedures, and regulations to prevent upset or release into the environment. Thus, the Project would be consistent with this policy.

21. *Promote the safe transportation of hazardous materials.*

Chemicals used by CLWA for water treatment are shipped in containers and on vehicles approved by the U.S. Department of Transportation (DOT) and are restricted to approved roads. DOT requires periodic testing and inspection of containers that transport hazardous materials. CLWA uses measures to promote the safe transportation and delivery of hazardous materials, consistent with this policy.

22. *Encourage businesses and organizations which store and use hazardous materials to improve management and transportation of such materials.*

As noted above, all chemicals would be shipped in containers and on vehicles approved by the DOT and would be restricted to approved roads. State and local mandates require the development and implementation of hazardous materials-related plans. The Project would be consistent with this policy.

24. *Encourage improved, timely communications between businesses and emergency response agencies regarding hazardous materials/waste incidents.*

State and local mandates require the preparation of hazardous materials related plans. Measures to facilitate timely communications between CLWA and emergency response agencies are included in these existing plans. The Project would be consistent with this policy.

Public Facilities Chapter

3. *Encourage private firms and public agencies providing water and waste management services to cooperate with all levels of government in establishing, enacting and enforcing consistent standards and criteria.*

CLWA is subject to applicable standards and criteria regulating provision of water service. The Project would be consistent with this policy.

5.2.2 Consistency with Growth Projections

Growth projections for the Project area are included in the Santa Clarita Valley Area Plan, discussed under section 5.3.

5.3 SANTA CLARITA VALLEY AREA PLAN OF THE COUNTY OF LOS ANGELES GENERAL PLAN

The Santa Clarita Valley Area Plan (comprehensively updated December 6, 1990), in conjunction with other chapters and elements of the Los Angeles County General Plan, is used for making critical public decisions regarding the Santa Clarita Valley.

5.3.1 Consistency with Policies

The Area Plan states that for the Santa Clarita Valley, it shall be the policy of the Los Angeles County Board of Supervisors to:

Land Use Element

1.1 *Accommodate the year 2010 population and land use demand as projected for the Santa Clarita Valley, designating sufficient area for appropriate use and a reasonable excess to provide adequate flexibility.*

1.2 *Closely monitor growth in the Santa Clarita Valley, so that growth does not exceed the capacity of the existing or planned infrastructure nor result in significant negative environmental impacts.*

1.3 *Provide for development in the study area, which is consistent with the plan, and encourage other governmental and private agencies to do the same.*

7.1 *Encourage development of convenient services to meet the needs of Santa Clarita Valley residents including . . . public utilities. Such services should be expanded at a rate commensurate with population growth. Phasing of development and implementation should be timed to prevent gaps in service as the area grows.*

The Project could serve approximately 106,700 persons. When added to the 2000 population of the CLWA service area (190,000), the resulting population would exceed Los Angeles County's 2010 population projection of 270,000 persons by 26,700. Thus, the Project would accommodate the 2010 demand. The County of Los Angeles would be responsible for ensuring that future development, including development that could be served by the Project, would be consistent with these policies, which direct that development be consistent with the general plan and that adequate public and commercial services and infrastructure be provided to serve population growth, while minimizing environmental impacts. The Project would be consistent with these policies.

Public Services and Facilities Element

1.2 *Use imported water supply to relieve over drafted groundwater basins and maintain their safe yield for domestic uses outside of urban areas.*

The Project would be consistent with this policy since it would import SWP water. The Santa Clarita Valley groundwater basin is not classified as overdrafted (DWR 2003a).

Energy Conservation Element

1.1 *Conserve energy in all its forms to a degree commensurate with an optimum level of living and economic activities.*

The Project would utilize additional energy for increased treatment of raw imported water. CLWA utilizes energy conservation measures at its treatment facilities, however, and the Project would be consistent with this policy.

5.3.2 Consistency with Growth Projections

The Santa Clarita Valley Area Plan includes population and housing projections for the Santa Clarita Valley adopted by the County of Los Angeles. The projections are based on 1987 population estimates and extend to the year 2010. The area plan projects that the Santa Clarita Valley will contain 270,000 persons and 93,400 housing units in 2010. Los Angeles County is in the process of updating the General Plan and expects completion within approximately three years, at which time new demographic projections may be adopted.

As described in section 3.0, the Project can serve approximately 106,700 persons. Adding this to the 2000 population of 190,000 for the Santa Clarita Valley area produces an estimated population of 296,700. This exceeds the 2010 forecast of 270,000 persons. The Project is not intended, however, to serve population only through 2010, and CLWA's UWMP, which was prepared after the transfer of 41,000 of Table A Amount occurred, assumes that the full amount will not be needed by 2010. The UWMP assumes a rate of 2,240 connections per year. If all of these connections were residential (recognizing that the methodology utilized in the UWMP reflects that these connections may include other types of connections in addition to households), and assuming that three people are served by each connection, this would result in an annual increase of 6,720 people. This rate of growth would result in an increased population of 67,200 between 2000 and 2010, for a total population of 257,200. Thus, CLWA's projections in its UWMP indicate that the growth forecast for 2010 would not be exceeded as a result of the Project.

5.4 VENTURA COUNTY GENERAL PLAN

The Ventura County portion of the agency area contains 8,468 acres or approximately 13 square miles of property. This area is located the Piru Planning Area, which contains 42,945 acres or about 67 square miles. The Ventura County General Plan amended through October 28, 1997 (Ventura County 1997) contains a Countywide 1980-2010 Population Forecast of 310 persons in the "Piru Non-Growth Area," a smaller portion of the Piru Planning Area, which contains the agency area as well as other lands.

5.4.1 Area Plan for the Piru Area

The Piru Area Plan (amended through July 1997) contains goals, policies, and programs divided into four major categories: resources, hazards, land use, and public facilities and services. Growth management is addressed through a related land use policy and associated building intensity/population density standards.

Land Use Policy 3.1.2.7: All discretionary development projects shall be reviewed and conditioned to ensure that they are in conformance with the Building Intensity/ Population Density Summary Table (see Table 5-1).

As shown in Table 5-1, if full build-out were to occur under current land use designations, Ventura County projects a total population of 3,620 persons in the Piru Planning Area. The agency portion of the planning area is designated either Open Space (80-acre minimum lot size and 0.04 persons per acre) or Agricultural (40-acre minimum lost size and 0.08 persons per

acre). In addition, the area contains prime agricultural lands. These land use designations are intended to allow rural development densities and encourage preservation of agricultural uses.

CLWA does not presently provide water to this planning area. If the County of Ventura were to approve future General Plan land use or zoning designations which allow urban development within this portion of the agency area, CLWA would at that time determine its ability to provide service to specific development proposals.

Table 5-1. Building Intensity/Population Density Standards — Piru Area Plan

Designation	*Acres*	*Population*
Open Space	37,483	1,488
Agricultural	5,214	413
R-4	13	165
R-6	69	1,316
R-15	5	238
Total	**42,784**	**3,620**
Designation	*Acres*	*Employees*
Commercial	10	130
Hotel	1	5
Industrial	36	627
Community Facility	114	496
Total	**161**	**1,258**

Source: Ventura County 1997.

5.4.2 Ventura County Save Open-Space and Agricultural Resources (SOAR) Initiative

This initiative was passed in 1998 in order to "ensure that Agricultural, Open Space and Rural lands are not prematurely or unnecessarily converted to other more intensive development uses." It requires a vote of the people for changes to the County's general plan policies and land use designations regarding open space, agricultural, and rural lands in unincorporated areas with certain exceptions. The Project would not result in land use changes to Ventura County and would be consistent with this policy.

5.5 CITY OF SANTA CLARITA GENERAL PLAN

The section below analyzes the consistency of the Project with relevant growth management policies and population forecasts in the City of Santa Clarita General Plan and its associated EIR.

The Final EIR for the City of Santa Clarita General Plan (1991) identifies low, moderate, and high buildout population estimates for the City of Santa Clarita Planning Area, which comprises 256 square miles within the Santa Clarita Valley. The City of Santa Clarita occupied approximately 42 square miles when the Planning Area was initially identified in 1991 and developed the larger Planning Area in recognition of its probable ultimate responsibility for services and governmental jurisdiction within the valley. The City of Santa Clarita has land development approval authority within the city boundaries and Los Angeles County has development approval authority in unincorporated Los Angeles County. The Final EIR

identifies several public services, such as schools, libraries and roads that "cannot at present adequately serve the existing population." The City of Santa Clarita reported a population of 143,800 persons in 1998 and 151,088 in 2000.

The population buildout estimates in the city's Final EIR are 228,274 persons (low), 256,944 (medium), and 521,977 (high). As described in section 4.1, the Project could serve approximately 106,700 persons. Adding the potential population served by the Project to the city's 2000 population (151,088) would result in a potential population of approximately 257,788 persons. This exceeds the low buildout estimate, is roughly comparable to the medium buildout estimate (exceeding it by 844 persons), and is less than the high buildout estimate.

Growth Management

Goal 1: *To preserve the character of communities and the integrity of the Santa Clarita Valley by permitting orderly growth through synchronization of development with the availability of public facilities such as roads, sewers, water service and schools needed to support it.*

The Project could make water available to local purveyors who provide water services for development within the CLWA service area and would be consistent with this goal.

LU-1.1: *Develop and implement a Public Facilities Ordinance that requires that adequate infrastructure exist or be programmed for construction within a defined period of time as a condition of development approval.*

The City of Santa Clarita's authority to develop and implement a Public Facilities Ordinance would not be affected by the Project, which seeks to make adequate water supply available for future development.

LU-1.2: *Develop and implement a program of Development Impact Fees to provide adequate public facilities and services in a timely manner.*

The City of Santa Clarita's authority to develop and implement a Development Impact Fee program would not be affected by the Project, which seeks to make adequate water supply available in a timely manner.

LU-1.8: *Encourage the concept of traffic mitigation agreements that provide a variety of transportation options included but not limited to automobiles, transit, commuter trains, light rail and bicycle pathways.*

The Project would not have a direct impact on traffic demand (see section 3.13, Transportation and Circulation). The City of Santa Clarita's authority to encourage traffic mitigation agreements that provide a variety of transportation options would not be affected by the Project.

LU-1.9: *Continue to pursue a policy of cooperation with Los Angeles County and seek adequate documentation, notification, and mitigation of infrastructure impacts beyond or bordering the City's boundaries.*

The Project would not affect cooperation between the City of Santa Clarita and Los Angeles County. This EIR provides information regarding potential indirect impacts of the Project to both Los Angeles County and the City of Santa Clarita, consistent with the spirit of this policy.

H-1.1: Implement the land use plan which provides opportunities for the development of a wide range of new housing types within the city.

The City of Santa Clarita has the authority to implement its General Plan by approving or denying residential and mixed-use development plans within its jurisdiction, which could include development served by the Project. CLWA does not have the authority to approve land development.

5.6 CLWA URBAN WATER MANAGEMENT PLAN 2000

A UWMP is a planning tool whose periodic preparation (every five years, in years ending with a 5 and 0) is mandated by the Legislature pursuant to the California Urban Water Management Planning Act. It generally guides the actions of water management agencies, serving as a management tool and providing a framework for action, but not functioning as detailed project development or action. As encouraged by the Act, the 2000 UWMP was prepared for the regional CLWA service area, which includes the service areas of the four retail water purveyors. The plan presents information about the water demand, water supply, water conservation, water recycling, and reliability planning in the CLWA's service area. The 2000 UWMP was prepared after the 41,000 AF of SWP Table A Amount was transferred; thus, it is included as part of the current water supply.

The UWMP was challenged in the Superior Court of Kern County, and a judgment was entered July 2003 upholding the UWMP in all respects. The petitioners in that case have appealed the judgment. The appellate court briefing is scheduled to be completed in March 2004, and oral argument is estimated to take place in the fall of 2004. The UWMP is and remains a valid document as of the time of the preparation of this EIR. Although information in the UWMP was considered in the analysis for the Project, an independent analysis and determination of environmental impacts was carried out for the Project.

5.7 CLWA GROUNDWATER MANAGEMENT PLAN, SANTA CLARA RIVER VALLEY GROUNDWATER BASIN, EAST SUBBASIN, LOS ANGELES COUNTY, 2003

In January 2002, CLWA initiated the preparation of a groundwater management plan pursuant to the requirements of Section 103-15.1 of the CLWA Act and section 10,750 et seq of the California Water Code. CLWA adopted the plan on December 10, 2003. The plan describes the Santa Clara River Valley Groundwater Basin and East Subbasin, historic and projected water use, and requirements of the affected area. In addition, the document provides a framework for present and future actions to develop groundwater while avoiding groundwater overdraft and preserving groundwater quality (including addressing perchlorate concentrations), and it also discusses interrelated surface water resources. Additionally, the document calls for integrating management of the groundwater basin with surface and groundwater resources of the United Water Conservation District, which is downstream along the Santa Clara River in Ventura

County. The Project is consistent with the groundwater management plan and would support the avoidance of overdrafting the groundwater basin by making supplemental water available, thus facilitating conjunctive use of local and imported water to the best advantage of the affected area.

5.8 KERN COUNTY GENERAL PLAN

The Land Use, Open Space, and Resource Element of the Kern County General Plan contains several policies that relate to preservation of agriculture and development of local surface water resources.

Resource Policy 1: Areas with designated agricultural use, which include Class I and II soils with surface water delivery systems, will be protected against residential and commercial subdivision activities.

No residential or commercial subdivisions are proposed as part of the Project, which would be consistent with this policy.

Resource Policy 2: Areas identified by the Soil Conservation Service as having high rangesite value will be reserved for extensive agricultural uses, or as resource reserve if located within a County water district.

SWP water is used only minimally on rangeland in the district (it is used for stock water rather than irrigation), and the Project would not have an impact on rangeland conversion. It would be consistent with this policy.

Resource Policy 12: The County will support programs and policies that provide tax and economic incentives to ensure the long-term retention of agriculture, timber, and other resource land.

Kern County participates in the Williamson Act program and provides tax incentives to landowners voluntarily enrolled in the program who preserve land in agricultural use. As described in section 3.2.2.2.2, the Project would not affect the County's participation in the Williamson Act program, nor would it conflict with Williamson Act contracts. The Project would be consistent with this policy.

Resource Policy 15: Encourage effective management of groundwater resources for the long-term benefit of the county by any or all of the following: ...development of alternative local and imported surface water supplies.

As discussed in section 3.15, Water Resources, the Project would have a less than significant impact on groundwater resources in WRMWSD. The Project would not inhibit WRMWSD's implementation of water management actions that are intended to conjunctively manage the district's surface and groundwater resources for the long-term benefit of district lands. The Project would be consistent with this policy.

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6.0 CUMULATIVE IMPACTS

6.1 CEQA REQUIREMENTS

Cumulative impacts refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts taking place over time. An EIR must discuss the cumulative impacts of a project when the project's incremental impact is cumulatively considerable (CEQA Guidelines section 15130[a]). "Cumulatively considerable" means that the project's incremental effects are considerable when viewed in connection with the impacts of other related projects (CEQA Guidelines section 15065 [c]). In this analysis, if the Project's incremental impact would be cumulatively considerable in combination with the impacts of other projects, the impact is identified as a "significant cumulative impact."

6.2 CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Projects included in the cumulative impact analysis were identified using a list approach (CEQA Guideline section 15130[b][1]) and are those that could result in impacts to the same resources as the Project, in the same geographic areas. Projects considered in this analysis fall into two major categories:

- Water supply, management, and distribution projects, and
- Land use development within and adjacent to the three geographic areas being analyzed, the SWP area, the WRMWSD area, and the CLWA area.

The analysis of the water supply, management, and distribution projects principally addresses the amount and timing of diversions from the Delta, manner in which water is conveyed and stored in the SWP and associated facilities, and its eventual use. Since the specific magnitude, location, and timing of impacts from these projects is anticipated to vary from year to year or is not yet known, the cumulative impact analysis is qualitative. Individual water and land use development projects are evaluated for cumulative impacts in combination with the direct effects of the Project. Additionally, where the Project would have indirect growth-related effects (i.e., in the CLWA service area), the potential for cumulative indirect impacts resulting from projected growth associated with both water and land development projects is evaluated, as well.

6.3 ANALYSIS OF CUMULATIVE IMPACTS

This section describes the projects included in the cumulative impact analysis, the status of their environmental documentation, anticipated environmental impacts of those projects (identifying only those resources that also would be affected by the Project), and the potential cumulative impacts of those projects in combination with the Project. Projects are grouped according to the geographic area affected. Projects with environmental effects that extend over more than one geographic area are discussed in each of the applicable regions and only as to

the resources that are potentially affected. The analysis addresses impacts from large-scale water management programs (e.g., the CALFED Bay Delta Program [CALFED] discussed in section 6.3.1.1 below) that may affect environmental resources and projects that tier from those programs (e.g., the Environmental Water Account Project [EWA] discussed in section 6.3.1.2 below) that are sufficiently mature to have definable impacts.

6.3.1 Other Projects Affecting the SWP and Associated Facilities

The following are water supply, management, and distribution projects that could affect the SWP and associated facilities. As discussed in the preceding sections of this EIR, the Project would result in no significant impacts and no indirect impacts to environmental resources within and adjacent to SWP facilities. It would, however, have less than significant impacts that, which when considered and combined with other projects might have a significant effect on the environment. The less than significant impacts identified are: to aesthetics (minor seasonal changes in the volume of water stored in San Luis Reservoir); air quality (increased air emissions from the generation of additional electrical power to move water from WRMWSD to CLWA and increased fugitive dust emissions from exposed soil at San Luis Reservoir); cultural resources (minor seasonal changes in the volume of water stored in San Luis Reservoir could expose submerged cultural resources); geology and soils (minor seasonal changes in the volume of water stored in San Luis Reservoir could expose more soil to wind and water erosion); utilities and service systems (energy) resources (additional electricity would be required to convey water to CLWA); and water resources (minor changes in the timing of diversion of water from the Delta, amount of water transported in SWP facilities, and minor temporal changes in storage volume of SWP reservoirs). Thus, other projects that could affect these resources might contribute to a cumulative impact when considered in combination with the Project.

6.3.1.1 CALFED Bay Delta Program (CALFED)

Project Description

The CALFED Bay Delta Program is an association of agencies and stakeholders whose goal is to develop and implement a long-term plan to address chronic water supply and environmental problems in the Sacramento-San Joaquin River Delta and San Francisco Bay. This association has developed a Program Action Plan that provides a framework for the implementation of projects within the CALFED Program. The major program components are ecosystem restoration; water supply reliability (including water use efficiency, water transfers, watershed management, water storage, and water conveyance); water quality; and levee system integrity.

Environmental Analysis Status and Anticipated Impacts

An EIS/EIR was prepared for this project in 1999 and a Record of Decision (ROD) was published on August 28, 2000. In April 2003, a Sacramento Superior Court upheld the EIR and its certification under CEQA. (*Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* [SCSC Case No. JC04152] May 5, 2003.) Two Notices of Appeal have been filed from the Judgment in this Coordinated case (Case No. C044267 on June 6, 2003 and Case No. C044577 on July 7, 2003).

Cumulative Impacts with the Project

The CALFED EIS/EIR identified potential impacts to the following environmental resources in and adjacent to the Delta, some of which also would be affected by the Project: aesthetics, air quality; cultural resources; geology and soils; utilities and public services; and water resources.

AESTHETIC RESOURCES

CALFED would affect aesthetic resources in the following ways: (1) long-term visual effects of new facilities or modified existing facilities; (2) effects in visually sensitive areas from restoration actions; (3) degraded watershed views from such actions as erosion control and fire management practices; (4) creation of borrow pits or spoils material disposal sites associated with storage, conveyance, levee projects, and other CALFED actions; and (5) long-term visual effects from construction activities extending more than 5 years. Project impacts would not compound or increase these impacts because Project-related impacts would be minor, seasonal in nature, and would generally not occur in the same areas as aesthetic impacts of CALFED. Therefore implementation of the Project in combination with CALFED would not have a cumulative impact to aesthetic resources.

AIR QUALITY

CALFED would affect air quality in the following ways: (1) direct, short-term air pollutant emissions during construction activities; (2) fugitive wind-blown dust emissions; (3) emissions associated with prescribed burning programs described in the CALFED Final EIS/EIR; (4) emissions from increases in equipment use and cultivation, agricultural chemical use, and crop shifting and burning; (5) emissions if land use changes lead to higher recreational uses; and (6) emissions from use of fossil fuels or other energy resources associated with pressurized irrigation systems; and (7) indirect air quality impacts from increased power generation (associated with pressurized irrigation systems) to meet CALFED energy consumption and changes in operation. The indirect impacts of increased power generation of the Project and CALFED would result in a less than significant cumulative impact to air quality because the Project and CALFED would utilize existing power plants that are already permitted, and no new power generation facilities would be required for either the Project or CALFED. Additionally, because the changes in storage of water in San Luis Reservoir that would result from the Project would fall within the range of fluctuations present under both current and historic operations, and would not produce fugitive dust emissions from exposed shorelines that differ from historic levels, cumulative impacts would be less than significant.

CULTURAL RESOURCES

CALFED would affect cultural resources in the following ways: (1) site-specific effects during construction, excavation, filling and flooding; and (2) alteration of historic setting of cultural resources. Project impacts would not compound or increase these impacts because the Project would not result in construction-related cultural resource impacts. Additionally, the Project would result in only minor impacts to cultural resources in San Luis Reservoir from lake elevation fluctuations that are within the range of fluctuations present under both current and historic operations and would not result in an alteration of the historic setting of cultural resources in the reservoir. Therefore the Project would not have a cumulative impact to cultural resources.

GEOLOGY, SOILS, AND MINERALS

CALFED would affect these resources in the following ways: (1) conversion of agricultural land soils for levee system construction and potential for erosion on outboard slope of levees; (2) increases in local subsidence from potential increased reliance on groundwater use; (3) increases in wind and soil erosion and in soil salinity due to fallowed agricultural lands; (4) increased construction-related short-term soil erosion, and increased sediment deposition and soil compaction; (5) potential changes in downstream geomorphology from enlarging existing storage facilities and other CALFED actions; and (6) ground disturbance, inundation, seepage, and shoreline wind- and wave-generated erosion from new storage facilities and other CALFED actions. The Project would result in minor changes to timing of water stored in San Luis Reservoir, but this would not compound or increase the impacts of CALFED because the Project impacts would be minor and lake elevation fluctuations would be within the range of fluctuations present under both current and historic operations. Therefore implementation of the Project in combination with CALFED would not have a cumulative impact to geologic, soil, and mineral resources.

UTILITIES AND PUBLIC SERVICES

CALFED would affect these resources in the following ways: (1) modify major infrastructural components (i.e., pipelines and powerlines) may need to be relocated or modified; and (2) increased risk of pipeline rupture during construction. Project impacts would not compound or increase these impacts because the Project would be implemented using existing SWP facilities and no modification or construction of facilities would occur. Therefore the Project would not have a cumulative impact on utilities and public services.

WATER RESOURCES

CALFED would temporarily affect surface water supplies and management characteristics by increasing turbidity during construction of CALFED facilities, levee construction and maintenance, and during habitat restoration activities. These impacts would not compound or increase with Project impacts because the Project would not require construction activities that would increase turbidity or otherwise affect water supplies and management. The Project would result in changes in the timing of diversions from the Delta, but because these changes would be minor and would not change the total amount diverted, cumulative impacts would be less than significant.

6.3.1.2 Environmental Water Account Project (EWA)

Project Description

The EWA is a cooperative water management program designed to provide protection to at-risk native fish species of the Delta estuary while improving water supply reliability for water users. Such a program was identified in the 2000 CALFED Programmatic ROD. The EWA program makes environmentally beneficial changes in the operations of the SWP and the CVP at no uncompensated water loss to the CVP and SWP water users. The protective actions for at-risk native fish species proposed as part of the EWA would range from reducing Delta export pumping to augmenting instream flows and Delta outflows. Beneficial changes in SWP and CVP operations could include changing the timing of some flow releases from storage and the

timing of water exports from the Delta pumping plants to coincide with periods of greater or lesser vulnerability of various fish species to environmental conditions in the Delta.

The purpose and need for the EWA project is to (1) provide a highly flexible, immediately implementable water management strategy that protects the at-risk native Delta-dependent fish species affected by SWP/CVP operations and facilities; (2) contributes to the recovery of these fish species; (3) allows timely water management responses to changing environmental conditions and changing fish protection needs; (4) improves water supply reliability for water users downstream from the Delta; and, (5) does not result in uncompensated water cost to the SWP's water users.

Environmental Analysis Status and Anticipated Impacts

The USBR and DWR published a Draft EIS/EIR in July 2003 that identifies a range of alternatives that could affect the following environmental resources that also could be affected by the Project: aesthetics, air quality, cultural resources, geology and soils, and utilities and service systems. The Final EIS/EIR was released in January 2004.

Cumulative Impacts with the Project

AESTHETIC RESOURCES

EWA would affect aesthetic resources by decreasing water levels in CVP and SWP reservoirs and non-CVP and SWP reservoirs. Consequently, scenic quality could be impacted at some SWP reservoirs south of the Delta that could also be impacted from the Project. However, the natural hydrology and pattern of Delta exports in combination with CVP and SWP Contractors' water demands already result in substantial reservoir level fluctuations and the combined change in fluctuation would not perceptibly change the scenic qualities. Additionally, the changes that would result from the Project and from EWA would be minor. Therefore, the Project would have a less than significant cumulative impact to aesthetic resources.

AIR QUALITY

EWA would affect air quality in the following ways: (1) direct, short-term air pollutant emissions from diesel-powered groundwater pumps, and (2) fugitive emissions of wind-blown dust for the idling of crops. The Project would result in increased air emissions from the generation of additional electrical power to move water from WRMWSD to CLWA and increased fugitive dust emissions from exposed soil at San Luis Reservoir. However, existing power plants that are already permitted would be used and no new power plants would be constructed. Additionally, the changes in storage in San Luis Reservoir that would result from the Project would be minor and fall within the range of fluctuations present under both current and historic operations. Therefore, the Project would have a less than significant cumulative impact to air quality.

CULTURAL RESOURCES

EWA acquisition of water from non-CVP or SWP reservoirs would lower water levels, thereby exposing potential cultural resources that would normally be inundated. Project impacts would compound or increase these impacts. However, the natural hydrology and pattern of

Delta exports in combination with CVP and SWP Contractors water demands already results in substantial reservoir level fluctuations and the combined change in fluctuation would less than significant. Therefore the Project would have a less than significant cumulative impact to cultural resources.

GEOLOGY, SOILS, AND MINERALS

EWA would affect local soils by the idling of crops. Project impacts would not compound or increase these impacts. Therefore the Project would not have a cumulative impact to geologic, soil and mineral resources.

UTILITIES AND SERVICE SYSTEMS

The storage and release of water from reservoirs for the EWA would alter the timing of hydroelectric power production. While the alteration of timing would be expected to somewhat overlap with the Project-related increased demands for electricity, Project impacts would compound or increase these impacts. However, the Project would have a less than significant cumulative impact to utilities and service systems because anticipated power supplies available or planned should be sufficient to meet demands in California and no expansion or construction of new electrical power generation facilities would be required.

WATER RESOURCES

EWA would temporarily affect surface water supplies and management characteristics by acquiring water (1) stored in non-CVP or SWP reservoirs after operators of those reservoirs have addressed refill criteria considering carryover storage and the potential for future hydrologic conditions, or (2) participating in a consumption reduction action with willing sellers able to idle agricultural water use. These actions would change the timing and amount of flows into the Delta and exports from Delta diversion facilities. These impacts would tend to ameliorate and not compound or increase with Project impacts.

EWA would affect water quality in the Delta by changing the timing of flows in the Delta. EWA would reduce Delta exports from December through June, thereby reducing the effects of seawater inflows. EWA fish actions would shift Delta exports from spring to later in the year in the same manner as the Project. This would produce a less than significant beneficial effect.

6.3.1.3 State Water Resources Control Board Decision 1641 – Bay/Delta Water Quality Control Plan (Decision 1641)

Project Description

Decision 1641 is an action by the SWRCB to establish water quality objectives for water uses in the Delta. The Bay/Delta Water Quality Control Plan was developed as a means to attain these water quality objectives and includes the following components: implementation of flow objectives for specific water quality criteria in the Bay-Delta Estuary; a petition to change the point of diversion for the Central Valley Project (CVP) and SWP in the southern Delta; and a petition for change in place of use and purpose of use of the Central Valley Project.

Environmental Analysis Status and Anticipated Impacts

The EIR for Decision 1641 was certified in 1999, and the SWRCB adopted Decision 1641 in December 1999. The Bay/Delta Water Quality Control Plan increases the quantity of water dedicated to protection of aquatic resources in the Delta. Consequently, water deliveries available for municipal and agricultural uses from the Delta and the SWP decline. Over the long term, annual average delivery reductions would be approximately 350,000 AF. Infrequently, in critically dry periods, the annual delivery reductions would be approximately 800,000 AF. This water would remain in the waterways of the Delta and would thus improve water quality. These reductions were considered in the analysis of the Project's impacts. Potential impacts were identified for the following resources that also would be affected by the Project: aesthetics; air quality; cultural resources; utilities and service systems (energy resources); and surface water supply.

Cumulative Impacts with the Project

AESTHETIC RESOURCES

Decision 1641 would affect aesthetic resources in the following ways: (1) changes in flow could have the effect of lowering water levels in reservoirs upstream of the Delta earlier in the season, for longer periods, or below the levels than would otherwise occur; and (2) lower water levels in some SWP and CVP reservoirs. Consequently, scenic quality could be impacted at some reservoirs upstream of the Delta and SWP and CVP reservoirs located south of the Delta. Project impacts would compound or increase these impacts to SWP and CVP reservoirs from the Delta to Castaic Lake, including San Luis Reservoir, which is a shared SWP and CVP facility. However, the natural hydrology and pattern of Delta exports in combination with CVP and SWP contractors' water demands already result in substantial reservoir level fluctuations and the combined change in fluctuation would not perceptibly change the scenic qualities. Additionally, the changes that would result from the Project and from Decision 1641 are minor. Therefore the Project would have a less than significant cumulative impact to aesthetic resources.

AIR QUALITY

The increased groundwater pumping to replace surface water supplies would lead to increased pumping lifts and increases in energy consumption, thereby increasing air pollution. However, no expansion or construction of new electrical power generation facilities would be anticipated and all existing and proposed electrical generation facilities would operate within existing permitted levels. The indirect impacts of increased power generation of the Project and Decision 1641 would result in a less than significant cumulative impact to air quality.

CULTURAL RESOURCES

Decision 1641 would affect cultural resources in the following ways: (1) changes in flow could have the effect of lowering water levels in reservoirs upstream of the Delta earlier in the season, for longer periods, or below the levels than would otherwise occur; and (2) lower water levels in some SWP and CVP reservoirs south of the Delta. Consequently, cultural resource subject to inundation could be impacted at some reservoirs upstream of the Delta and SWP and CVP reservoirs located south of the Delta. Project impacts would compound or increase these

impacts to SWP reservoirs from the Delta to Castaic Lake, including San Luis Reservoir, a shared SWP and CVP facility. However, the natural hydrology and pattern of Delta exports in combination with CVP and SWP Contractors water demands already results in substantial reservoir level fluctuations and the combined change in fluctuation would less than significant. Additionally, the changes that would result from the Project and from Decision 1641 are minor. Therefore, the Project would have a less than significant cumulative impact to cultural resources.

UTILITIES AND SERVICE SYSTEMS

Implementation of Decision 1641 results in higher net hydropower generation by the SWP and the CVP because exports would be somewhat reduced. The increased groundwater pumping to replace surface water supplies (described in the previous section) would lead to increased pumping lifts and increases in energy consumption. However, no expansion or construction of new electrical power generation facilities is anticipated. Project impacts would compound or increase these impacts by increasing the demand for electrical power generation. However, the Project would have a less than cumulative impact on utilities and service systems because anticipated power supplies available or planned should be sufficient to meet demands in California, and no expansion or construction of new electrical power generation facilities would be required.

WATER RESOURCES

The project would result in changes in the timing of diversions from the Delta, and Decision 1641 also would result in changes in the timing of diversions from the Delta or an overall reduction in the amount of water diverted. Surface water supply operations of the Project would be consistent with the implementation of Decision 1641 and would therefore not compound or increase the impacts of Decision 1641.

6.3.1.4 Central Valley Improvement Act Project (CVPIA)

Project Description

In addition to reauthorizing the CVP and mandating the renegotiation of water supply contracts, the CVPIA identified the protection, restoration, and enhancement of fish, wildlife, and associated habitats in the Central Valley. It established a requirement for the acquisition of water for protecting, restoring, and enhancing fish and wildlife populations.

Environmental Analysis Status and Anticipated Impacts

The U.S. Bureau of Reclamation (USBR) evaluated the CVPIA in a Programmatic EIS (USBR 2001) and a series of related project-specific evaluations (e.g., water delivery contract renewal NEPA evaluations). The Programmatic EIS identified potential impacts to the following environmental resources in and adjacent to the Delta, some of which also would be affected by the Project: cultural resources, utilities and service systems, and water resources. However, CVPIA potential effects to cultural resources were identified but could not be quantified until project-specific evaluations were conducted.

Cumulative Impacts with the Project

Project-related impacts to utilities and service systems would contribute to the impacts of CVPIA to these resources. CVPIA affects utilities (energy resources) as a result of changes in operations that shift patterns of power generation, resulting in a reduction in hydroelectric power generation. Project impacts would compound or increase these impacts by increasing the demand for electrical power generation. However, the Project would have a less than significant cumulative impact to utilities and service systems because anticipated power supplies available or planned should be sufficient to meet demands in California and all existing and proposed electrical generation facilities would operate within existing permitted levels.

CVPIA effects to surface water supplies and management include (1) reductions in deliveries from the Trinity River basin to the Sacramento River basin; (2) increased releases from Shasta Lake; (3) increased flows on Clear Creek (near Redding, California) in non-critical years; (4) changes in release from Folsom Lake to stabilize flows in the American River; and, (5) increased instream flows in non-critical years on the Stanislaus River. These impacts would not compound or increase with Project impacts because the Project would not affect these areas.

6.3.1.5 Monterey Amendment

Project Description

The Monterey Amendment describes a project that would amend the Water Supply Contracts between DWR and the SWP Contractors to improve the management of SWP supplies and operations. Additional discussions of the Monterey Amendment are provided in section 1.2.2, section 3.15, section 6.3.2.5, section 6.3.3.4, and Appendix D. The 41,000 AF transfer associated with the Project represents a portion of 130,000 AF of Agricultural Table A Amounts made available for permanent sale to M & I Contractors as part of the Monterey Amendment. The Project could also be completed under terms of the CLWA Water Supply Contract prior to the implementation of the Monterey Amendment.

Environmental Analysis Status and Anticipated Impacts

An EIR is being prepared to evaluate the potential environmental impacts of both the Monterey Amendment and the additional program components specified in the Settlement Agreement (see section 1.2.2 for a more detailed discussion of the Settlement Agreement). The NOP for the Monterey Agreement EIR does not specify the environmental resources to be addressed in the EIR or anticipated impacts of the project. Based on comment letters responding to the NOP, however, impacts to the following environmental resources in and adjacent to the Delta and SWP facilities that also would be affected by the Project include aesthetics, air quality, cultural resources, geology and soils, utilities and service systems, and water resources.

Cumulative Impacts with the Project

Impacts of the Monterey Amendment would vary depending on the various components and the location of their implementation. Impacts to the Delta and SWP facilities of the Agricultural to M&I water transfer components of the Monterey Amendment vary depending on the

location of the receiving agency (KCWA and its member units have committed to sell the 130,000 AF of Agricultural Table A Amounts) to M & I Contractors.

- Receiving agencies using the North Bay Aqueduct (e.g., Napa County Flood Control and Water Conservation District and Solano County Water Agency) would not utilize facilities south of that point of diversion and would decrease average demands on the Delta facilities and those south of the Delta. These impacts would not compound or increase with the Project impacts.
- Receiving agencies using the South Bay Aqueduct (e.g., Alameda County Flood Control and Water Conservation District, Zone 7) would continue to use pumping facilities in the Delta but would reduce average demands on facilities below where the South Bay Aqueduct braches off the California Aqueduct (approximately the City of Tracy or the end of Reach 2 of the California Aqueduct). These impacts would compound or increase with the Project impacts associated with the Delta pumping facilities but would not compound or increase with the Project impacts below Reach 2.
- Receiving agencies south of Kern County would utilize many of the same facilities as the Project (e.g., San Luis Reservoir, the same reaches of the California Aqueduct, and the same pumping facilities), and impacts to those facilities are likely to be similar to those created by the Project. Projects that that would affect these facilities include transfers from districts within Kern County to districts in southern California (e.g., to Mojave Water Agency and Palmdale Water District). These impacts would compound or increase with the Project impacts.

Aesthetic Resources

Table A Amount transfers would affect aesthetic resources by changing water levels in SWP reservoirs in a manner similar to the Project. Consequently, scenic quality would be impacted at some reservoirs. Project impacts would compound or increase these impacts. However, the natural hydrology and pattern of Delta exports in combination with SWP demands already results in substantial reservoir level fluctuations and the combined change in fluctuation would not perceptibly change the scenic qualities. Therefore, the Project would have a less than significant cumulative impact to aesthetic resources.

Air Quality

Implementation of the Monterey Amendment would increase the amount of pumping in the SWP facilities and thereby adversely affect air quality by increasing the amount of air emissions necessary to generate electricity. Project impacts would compound or increase these impacts by increasing the demand for electrical power generation. However, the Project would have a less than cumulative impact air quality because anticipated power supplies available or planned should be sufficient to meet demands in California and all existing and proposed electrical generation facilities would operate within existing permitted levels.

Cultural Resources

Table A Amount transfers would affect cultural resources by changing water levels in SWP reservoirs in a manner similar to the Project. Consequently, potential cultural resources normally inundated would be exposed and could be impacted at some reservoirs. Project

impacts would compound or increase these impacts. However, the natural hydrology and pattern of Delta exports in combination with SWP demands already results in substantial reservoir level fluctuations and the combined change in fluctuation would not perceptibly change reservoir water levels. Therefore the Project would have a less than significant cumulative impact to cultural resources.

GEOLOGY, SOILS, AND MINERALS

Table A Amount transfers would affect geology, soils, and mineral resources by changing water levels in SWP reservoirs in a manner similar to the Project. Consequently, soils and mineral resources that would normally be inundated would be exposed and could be eroded at some reservoirs. Project impacts would compound or increase these impacts. However, the natural hydrology and pattern of Delta exports in combination with SWP demands already results in substantial reservoir level fluctuations and the combined change in fluctuation would not perceptibly change reservoir water levels. Therefore the Project would have a less than significant cumulative impact to geology, soils and mineral resources.

UTILITIES AND SERVICE SYSTEMS

Implementation of the Monterey Amendment would increase the amount of pumping in the SWP facilities and thereby increase demand for electricity. Project impacts would compound or increase these impacts by increasing the demand for electrical power generation. The Project would have a less than cumulative impact on utilities and service systems since anticipated power supplies available or planned should be sufficient to meet demands in California and no expansion or construction of new electrical power generation facilities would be required.

WATER RESOURCES

Table A Amount transfers would affect surface water management and supply characteristics by slightly changing (1) the timing of water pumped from the Delta and, and (2) the timing of water withdrawals from SWP reservoirs. Consequently, springtime flows in the Delta would be greater and reservoir water levels would remain higher for a longer period of time at some reservoirs. Project impacts would compound or increase these impacts. However, the Project and the Monterey Amendment would not change the operating criteria for diversions from the Delta, and the changes in timing of Delta diversions would occur infrequently and would result in only minor changes to Delta diversions within the applicable environmental and regulatory constraints. Additionally, changes in timing of water withdrawals in SWP reservoirs would be within the substantial differences in San Luis Reservoir storage that occur in normal SWP operations over the course of the year and from year to year. Therefore the Project would have a less than significant cumulative impact on water resources.

6.3.1.6 Sacramento Valley Water Management Agreement (SVWMA)

Project Description

The SWRCB has engaged in several years of proceedings regarding the responsibilities for meeting flow-related water quality standards for the Delta (established in Decision 1641). In order to resolve and expedite this process, the parties of concern (including DWR, USBR, water right holders in the Sacramento Valley, and SWP and DWR Contractors) entered into the

SVWMA in April 2001. The SVWMA establishes a process to develop and implement a variety of local water management projects that will increase supplies in order to meet both in-basin demands and the water quality requirements for the Delta. The SVWMA will be implemented by a series of work plans facilitating groundwater management and planning, water conservation and efficiency, fish passage improvements, water transfers and exchanges, flood protection, conjunctive use and other environmental improvements (SVWMA 2002).

Environmental Analysis Status and Anticipated Impacts

Planning for an environmental evaluation under both CEQA and NEPA is underway. Since the SVWMA is a specific agreement to help satisfy the requirements of Decision 1641 the impacts of the SVWMA are anticipated to be similar to and less that those described for the Decision 1641 project. Potential impacts are anticipated for the following resources that also would be affected by the Project: aesthetics, air quality, cultural resources, utilities and service systems (energy), and, surface water supply. These impacts would primarily be a result of construction and other water management actions in the Sacramento Valley. However, the SVWMA would shift some of the burden for meeting water quality requirements in the Delta from SWP and CVP Contractors to water users in the Sacramento Valley thereby allowing for additional water exports to SWP and CVP Contractors south of the Delta.

Cumulative Impacts with the Project

The SVWMA would offset some of the impacts of Decision 1641 in the Delta and south of Delta because it would make more water available for environmental uses within the Delta, thereby allowing SWP and CVP water currently used for environmental purposes in the Delta to be exported to water users south of the Delta. Construction-related impacts of the SVWMA would occur outside of the area potentially affected by the Project and therefore would not be cumulative. The SVWMA's effects in the Delta would be beneficial. Therefore, no cumulative impacts would occur.

6.3.1.7 *San Luis Reservoir Low Point Improvement Project*

Project Description

The San Luis Reservoir Low Point Improvement Project would address the water quality issues associated with low water levels in the San Luis Reservoir (i.e., when the water level gets too low, excessive algae is produced, which creates water quality, reliability, and operational impacts on the CVP and to some SWP contractors). The problems presently include additional operating costs, risks to public health and safety from interruption in water supply, and economic losses to agriculture and industry. There are also significant opportunity costs to the CVP and SWP as a result of their inability to fully utilize all of the available storage in the reservoir that would increase in the future if the low point occurred more frequently and for a longer duration. In recognition of the need to resolve the low point problem, the San Luis Reservoir Low Point Improvement Project was included in the August 2000 CALFED Bay-Delta Program's ROD as a complementary conveyance action. The ROD referred to a bypass canal to the San Felipe Unit at the San Luis Reservoir as one complementary action. The bypass canal would allow the San Felipe Division contractors to receive water directly from the Delta pumping facilities and increase the effective storage capacity in San Luis Reservoir up to 200,000 AF.

Environmental Analysis Status and Anticipated Impacts

The Santa Clara Valley Water District and the USBR issued an NOP in August 2002. The NOP identified a range of alternatives that could affect the following environmental resources that also would be affected by the Project: air quality, cultural resources, geology, soils and minerals, and utilities and service systems.

Cumulative Impacts with the Project

The Project would result in less than significant impacts to aesthetics, cultural resources, geology and soils, and water resources associated with temporal changes in San Luis Reservoir's water elevation as a result of changes in the timing of deliveries to the reservoir. The Low Point project would reduce water levels and result in a larger, more effective storage capacity and better water quality in San Luis Reservoir. Because the Project would delay the removal of water from San Luis Reservoir (thereby ameliorating or delaying a portion of the impacts of the Low Point project) there would be less than significant cumulative impacts on these resources.

AESTHETIC RESOURCES

Scenic qualities at San Luis Reservoir could be impacted due to decreasing water levels associated with the Low Point project. Project impacts would compound or increase these impacts at certain times and reduce or ameliorate these impacts at other times. The natural hydrology and normal pattern of Delta exports in combination with SWP demands already results in substantial fluctuations in water levels (and associated aesthetic impacts) in San Luis Reservoir. The combined change in fluctuation would not perceptibly change the scenic qualities. Therefore the Project would have a less than significant cumulative impact to aesthetic resources.

AIR QUALITY

Implementation of the bypass canal alternative of the Low Point project would affect air quality by increasing the amount of air emissions necessary to generate electricity because additional electricity would be needed to pump water in the bypass canal. No expansion or construction of new electrical power generation facilities would be anticipated. Project impacts would compound or increase these impacts by increasing the demand for electrical power generation. However, the Project would have a less than cumulative impact on air quality because anticipated power supplies available or planned to meet demands in California and all existing and proposed electrical generation facilities would operate within existing permitted levels.

CULTURAL RESOURCES

The Low Point project would lower water levels in San Luis Reservoir, thereby exposing potential cultural resources that would normally be inundated. Project impacts would compound or increase these impacts under certain conditions for limited periods of time. However, the natural hydrology and pattern of Delta exports in combination with SWP demands already result in substantial reservoir level fluctuations. The combined change in fluctuation would be within current operational limits and would result in a less than significant impact to cultural resources.

GEOLOGY, SOILS, AND MINERALS

The Low Point project would affect geology, soils, and mineral resources in and adjacent to San Luis Reservoir by allowing water levels to be reduced below the current 300,000 AF pool under normal operational. Consequently, soils and mineral resources that would normally be inundated would be exposed and could be eroded. The Project would result in changes to the timing of storage of water in San Luis Reservoir and the Project's impacts would compound or increase impacts of the Low Point project. However, the natural hydrology and pattern of Delta exports in combination with SWP demands already result in substantial reservoir level fluctuations and the Project's contribution to the change in fluctuation would not perceptibly change reservoir water levels. Therefore, the Project would have a less than significant cumulative impact on geology, soils, and mineral resources.

UTILITIES AND SERVICE SYSTEMS

The storage and release of water from San Luis Reservoir for the Low Point project and alternatives would alter the timing of pumping demands and hydroelectric power production from releases from San Luis Reservoir. Project impacts would compound or increase these impacts. However, the Project would have a less than cumulative impact on utilities and service systems because anticipated power supplies available or planned should be sufficient to meet demands in California and no expansion or construction of new electrical power generation facilities would be required.

WATER RESOURCES

The Low Point project would affect surface water supplies and management characteristics by reducing the amount of water stored in San Luis Reservoir to meet export and environmental demands. These actions would change the timing and amount of flows into the Delta and exports from Delta diversion facilities. The Project would result in minor changes to the timing releases of water stored in San Luis Reservoir and minor changes in the timing of diversions from the Delta. Because these changes would be minor and would not alter the historical fluctuation amounts they would not substantially contribute to the impacts of the Low Point project. The Project would have a less than significant cumulative impact to water resources.

6.3.1.8 South Delta Improvement Project (SDIP)

Project Description

DWR and USBR are proposing the SDIP, which would increase the maximum allowable diversion capacity at the SWP's Clifton Court Forebay, provide an adequate water supply for South Delta Water Agency (SDWA) and improve conditions for San Joaquin River salmon in the southern portion of the Delta.

The SDIP would include the following components: increasing the maximum allowable diversion capacity at Clifton Court Forebay to 8,500 cubic feet per second (the same as that

identified in the "Delta Improvements Package")[1]; dredging portions of Old River and West Canal to improve conveyance capability during periods of high SWP and CVP Delta exports; constructing permanent operable barriers to improve water supply reliability and water quality in the south Delta; dredging local channels to reduce the frequency of barrier operations and to accommodate improvements to existing agricultural diversions both upstream and downstream of the proposed barriers; and constructing a permanent operable fish control structure at the head of Old River to reduce fish losses at the CVP and SWP export facilities.

The SDIP would result in increased water supply reliability for SWP, CVP, and the EWA (see section 6.3.1.2 above); increased water surface levels for SDWA agricultural water diverters; improved water quality for SDWA agricultural water diverters; improvement of conveyance capacity in portions of the south Delta; and improved conditions for San Joaquin River salmon.

Project's Environmental Analysis Status and Anticipated Impacts

DWR and USBR issued an NOP and NOI and held scoping meetings in October 2002. The Draft EIR/EIS is currently being prepared. The NOP identified issues for resolution including:

- physical and regulatory constraints limiting Clifton Court Forebay maximum allowable diversion rates;
- water supply availability for beneficial use within the SDWA service area; water supply availability from other programs and projects; effects of SWP and CVP export operations on San Joaquin River salmon;

The NOP also identified potential impacts to biology and water quality.

Cumulative Impacts with the Project

Although the SDIP EIR/EIS has not been completed, it is reasonable to assume that the SDIP would result in construction-related impacts, increased Delta diversions, and beneficial effects to SWP and CVP water supplies. The only construction-related impacts that could result in cumulative impacts with the Project would be air quality impacts. However, the Project would result in only minor air quality impacts and because the SDIP project's air quality impacts are expected to be temporary, cumulative impacts would be less than significant. Increased Delta diversions as a result of the SDIP would be conducted in a manner consistent with Decision 1641 and the Project's changes in the timing of diversions from the Delta would also be consistent with Decision 1641. Therefore, cumulative impacts of the Project and SDIP would be less than significant.

[1] The Delta Improvements Package is a proposed set of State Water Project/Central Valley Project (SWP/CVP) operating rules that may be evaluated and considered as part of a larger set of actions to improve the water supply reliability, water quality, and ecosystem health of the Bay-Delta system and includes increasing the SWP's pumping capacity to 8,500 cubic feet per second during periods when plentiful, high quality water is available.

6.3.1.9 North Delta Improvement Project (NDIP)

Project Description

The channel system in several of the streams in the North Delta lacks capacity to convey flows from the upstream watershed through the Delta to the San Joaquin River and to the San Francisco Bay. In concert with the CALFED ROD, the NDIP is designed to implement flood control improvements in a manner that also contributes to ecosystem restoration, water quality, and water supply reliability concerns in the North Delta. The NDIP will improve water conveyance, improve water supply reliability, facilitate reductions in salinity, recommend ecosystem restoration actions, and improve levee stability and integrity while minimizing impacts to agricultural and recreation resources.

Environmental Analysis Status and Anticipated Impacts

The DWR and U.S. Army Corps of Engineers published an NOI/NOP for the EIS/EIR on this project in January 2003. The NOI/NOP identified a range of alternatives that could affect the following environmental resources that also would be affected by the Project: air quality, cultural resources, geology, soils and mineral resources, and water resources.

Cumulative Impacts with the Project

The impacts resulting from the NDIP would be primarily construction-related impacts. The only construction-related impacts that could result in cumulative impacts with the Project would be air quality impacts. However, the NDIP project's air quality impacts are expected to be temporary and the Project's indirect impacts to air quality would not compound or increase these impacts. The Project would have no cumulative impact to air quality. All other Project impacts would be in a different geographic location than those associated with the NDIP or would not involve ground disturbance and, therefore, no other cumulative impacts would result.

6.3.1.10 16,000 AF Proposed Transfer of SWP Table A Amount From Kern County Water Agency, including Possible Annexations to CLWA

CLWA is studying a proposal to acquire additional SWP Table A Amount and to annex lands to the CLWA service area. This project is evaluated in this section because it would have the potential to adversely affect environmental resources associated with the use of SWP facilities. This project also is discussed in section 6.3.3.1 because it has the potential to affect environmental resources in the CLWA service area, as well.

Project Description

CLWA would acquire up to 16,000 AF of SWP Table A Amount from KCWA through an agreement with the Berrenda Mesa Water District (BMWD), thus increasing CLWA's SWP Table A Amount from 95,200 AF to up to 111,200 AF. The project would use existing SWP facilities to store and convey the water to CLWA. The 16,000-AF project would be completed either under the provisions of the Monterey Amendment or under the terms of CLWA's SWP water supply contract without the Monterey Amendment.

Environmental Analysis Status and Anticipated Impacts

CLWA issued a Draft EIR addressing the impacts of a smaller Table A Amount (9,500 AF) and proposed annexations in February 2000 (CLWA 2000). No Final EIR was issued. Subsequently, the Table A Amount transfer was increased to 16,000 AF and an NOP and Initial Study on the project were issued in July 2003. That NOP and Initial Study and the anticipated EIR (in-preparation) supersede the Draft EIR issued in February 2000.

According to the 2003 Initial Study, the 16,000 AF Transfer project would result in less than significant impacts to aesthetics, air quality, cultural resources, geology and soils, utilities/service systems (energy) resources, and water resources within and adjacent to SWP facilities. These impacts to resources within and adjacent to the SWP and associated facilities would be similar in nature to those described for the Project. The quantitative impact would be approximately 40 percent of the Project because the amount of water proposed for transfer is approximately 40 percent of the Project (16,000/41,000 = 0.39). These impacts would be included in those described as a permanent sale of an Agricultural SWP Table A from KCWA to the M & I Contractors under the Monterey Amendment south of KCWA, in section 6.3.1.5 above.

Cumulative Impacts with the Project

The Project's impacts would incrementally add to those of the 16,000 AF Transfer project. Cumulative impacts to the timing of diversions from the Delta would be less than significant because the two projects would result in only minor changes to the timing of Delta diversions and because these changes would be consistent with the water quality standards and operational constraints that govern Delta operations. Likewise, the cumulative impacts of these projects on aesthetics, cultural resources, and geology and soils associated with the SWP facilities would be less than significant because the overall changes to the timing of water stored in San Luis Reservoir would be minor (storage changes of less than 1 percent of average storage in most months and not more than 3 percent in any month for the Project and less than half of those amounts for the 16,000 AF Transfer project). Impacts to utilities/service systems (energy) resources would be cumulatively less than significant because the additional electrical energy would be acquired from the generation and supply reserve margins. These margins should be adequate to meet the reasonably foreseeable demands (CEC 2002b) and no expansion or construction of new electrical power generation facilities would be required.

6.3.2 Projects Affecting the WRMWSD

The Project impacts in the WRMWSD are associated with water resources. The Project would reduce WRMWSD's SWP Table A supply by approximately 17.2 percent, but this would not result in a material effect to WRMWSD's SWP water supply because this water would not otherwise be used. Under some conditions, this decrease in SWP water supply could result in increased reliance on other water sources and groundwater, but the impact would be less than significant. The Project would result in higher total dissolved solids (TDS) water used and recharged to local groundwater, but this would have a less than significant impact to water quality because increased use of other water and groundwater would be minor. The following projects are both land development and water supply, management, and distribution projects.

6.3.2.1 *Pastoria Power Plant*

Project Description

The Pastoria Power Plant is a 750-megawatt natural gas-fired, combined cycle electric generating station presently under construction and located approximately 6.5 miles east of the Interstate 5/Pump Plant Road intersection. The plant is located on an approximately 31-acre site, approximately 1 mile north of the California Aqueduct and 1.3 miles north of the Edmonston Pumping Plant. The plant will connect with the Pastoria substation, located approximately 4,000 feet south of the proposed plant. Natural gas will be delivered to the project through an existing interstate natural gas pipeline that runs approximately 7 miles north of the plant site. The Pastoria Power Plant's annual average water demand of 2,443 gallons per minute (gpm) or approximately 3,750 AFY at 95 percent operation will be met by a contract with WRMWSD and a back-up water supply through a contract with the Kern Water Bank Authority (CEC 2000). Construction on the Pastoria Power Plant began in June 2001 and commercial operation is targeted for mid-2005 (Calpine 2002).

Environmental Analysis Status and Anticipated Impacts

WRMWSD issued a Notice of Exemption (NOE) for the water supply contract on June 29, 2000 (SCH # 2000068257). The Pastoria Power Plant project was certified and granted a license by the California Energy Commission (CEC) on December 20, 2000 (CEC 2002a). The environmental analysis described in the Application for Certification (CEC 2000) indicated that the project would result in the permanent loss of 36.1 acres of non-native grassland habitat due to the construction of the power plant and associated transmission line and access road, and the temporary loss of 124.5 acres of native and non-native grassland, which includes the construction laydown area and lands associated with the transmission line, access road, water supply pipelines, and a fuel gas supply pipeline. Environmental resources affected by the Pastoria Power Plant that would also be affected by the Project include water resources (surface water quality and drainage, and water supply).

Cumulative Impacts with the Project

WATER RESOURCES

The Pastoria Power Plant project would meet its water demand in most years through a contract with WRMWSD, which is "backed up" though a contract with the Kern Water Bank Authority. The water supply needed for the Pastoria Power Plant is small (3,750 AFY) in comparison to the overall supply of the WRMWSD. Additionally, WRMWSD has sufficient supplies to accommodate the demands of its customers without relying on the 41,000 AF of Table A Amount associated with the Project (personal communication, W. Taube 1997 and 2002). Significant but mitigable impacts to surface water quality and drainage related to earthmoving activities were identified in the power plant environmental analysis. The Project would not adversely affect surface water quality or drainage because the Project would not involve construction related activities. Therefore, the Project would have a less than significant cumulative impact to water resources.

6.3.2.2 *Laval Farms Water Management and Exchange and WRMWSD Pump-Back*

Project Description

This project contains two components: (a) Laval Farms, the farming subsidiary of Tejon Ranchcorp (TRC) Water Management and Exchange, including water right applications to the SWRCB, and (b) WRMWSD's 850 Canal/Reservoir No. 1 Pump-back. The Water Management and Exchange component of the project would formalize the use of local water supplies to the extent feasible to meet TRC's water demand, for agricultural irrigation, livestock, and related operations on Tejon Ranch. The 850 Canal/Reservoir No. 1 Pump-back component of the project would reduce overall WRMWSD electrical power costs by reducing energy demands for pumping during on-peak hours and generating electrical energy during on-peak hours from SWP water stored in TRC's Reservoir No. 1.

The project is located in the southern portion of the San Joaquin Valley in Kern County. Approximately 8,200 acres of the project area are in the WRMWSD and are served by the C and D Laterals of WRMWSD's 850 Canal. Approximately 15,000 acres are part of Tejon Ranch's agricultural and range lands in the southeastern end of the San Joaquin Valley (a portion of these lands are located in the WRMWSD).

Environmental Analysis Status and Anticipated Impacts

A Notice of Preparation was issued for this project on November 15, 2001 and a Draft EIR for this project was released in late 2003 (SCH # 2001061013). It identified less than significant impacts to hydrology, water quality, and water supply, including a reduction in the duration and downstream extent of stream flows, minor changes in net groundwater recharge and groundwater levels in the White Wolf Sub-basin, and water quality and drainage impacts due to construction activities (WRMWSD 2003).

Cumulative Impacts with the Project

WATER RESOURCES

Under some conditions, the decrease in SWP water supply associated with the Project would result in increased reliance on other water sources and groundwater by users in WRMWSD. However, this would be a less than significant cumulative impact because these amounts are small relative to the total amount of water in storage in the Kern County Groundwater Basin and the White Wolf sub-basin, which underlie the WRMWSD. Also, groundwater levels in the portions of these basins underlying the service area generally have been increasing over time (BE 1995), indicating that the basins could sustain an increase in use under these limited conditions without resulting in a net deficit in aquifer volume or a lowering of the local groundwater table. The Laval Farms project would reduce the amount of net groundwater recharge and groundwater levels in the White Wolf Sub-basin, but net recharge and groundwater levels would continue to be positive (increasing). The Project would have a less than significant cumulative impact to water supply in WRMWSD and would not result in impacts to surface water drainage or flooding in the WRMWSD because it would not involve construction related activities. Thus, cumulative impacts would be less than significant. Minor impacts associated with increased TDS levels from the Project would compound with those of the Laval Farms project but both projects would result in minor impacts that would not

cumulative result in significant impacts to groundwater quality. Thus, the Project, in combination with the Laval Farms project, would have less than significant cumulative impacts to water quality.

6.3.2.3 *Tejon Industrial Complex East Specific Plan*

Project Description

Tejon Industrial Complex East (TICE) is a proposed 1,100-acre master-planned industrial complex on the east side of Interstate 5 at the Wheeler Ridge/Laval Road interchange, just north of the California Aqueduct. The project site currently consists of approximately 375 acres of previously irrigated vineyards in the central and northern portion of the site. The southern portion of the site abuts the California Aqueduct and is currently fallow land. The TICE would focus primarily on the needs of trucking, warehousing, and distribution industries. Under the TICE Specific Plan, approximately 990 acres of the site may be developed with industrial/warehouse uses (including associated roadways, landscaping, and parking areas), along with 110 acres of commercial uses, a 100-room hotel, and child-care facility. The site would utilize groundwater supplies in the White Wolf Sub-basin and SWP water (Kern County 2002). The area was annexed into the Tejon-Castac Water District (TCWD) and SWP water would be provided by TCWD.

Environmental Analysis Status and Anticipated Impacts

An NOP and Initial Study were issued by Kern County for the TICE Specific Plan in October 2001, and an EIR was completed in 2002 and certified in January 2003. The EIR (Kern County 2002a) identified less than significant impacts to hydrology and water quality due to increased runoff from impervious surfaces and/or groundwater contamination from abandoned oil wells, and a less than significant impact to groundwater from the White Wolf Sub-basin because the TICE would use groundwater as a possible water supply.

Cumulative Impacts with the Project

WATER RESOURCES

SWP water for TICE would come from the Table A Amount held by a separate member unit of KCWA, the TCWD. The TICE would also rely on groundwater, but because groundwater levels in the portions of the basins underlying WRMWSD have been generally increasing over time (BE 1995), the basins could sustain an increase in use under limited conditions without resulting in a net deficit in aquifer volume or a lowering of the local groundwater table. Similarly, implementation of the TICE Specific Plan would impact surface water quality and drainage from impervious surfaces and other surface water contaminants. These impacts to water quality would not be compounded or increased by the potential water quality impact associated with the Project because the Project would only result in a less than significant increase in TDS in groundwater. Further, the Project would not affect drainage in the WRMWSD. Therefore, the Project would have less than significant cumulative impacts to water resources.

6.3.2.4 *Tejon Industrial Complex West Specific Plan*

Project Description

The Tejon Industrial Complex West (TICW) Specific Plan is a 350-acre master-planned industrial complex located between Interstate 5 on the east and Tecuya Creek on the west near the Wheeler Ridge/Laval Road interchange, and north of the California Aqueduct. The project includes the following: about 3,930,850 square feet of industrial/warehouse uses, two gas stations, up to four fast food restaurants with drive-throughs, one 5,000 square-foot high turnover restaurant with drive-through, one 6,000 square-foot sit-down restaurant, one motel, and two mini-marts. The project is currently approximately 50 percent completed. The TICW area was annexed into the TCWD and SWP water would be provided by TCWD; groundwater from the White Wolf Sub-basin would also be used as a water supply.

Environmental Analysis Status and Anticipated Impacts

The Final Environmental Impact Report (FEIR) for the project was completed in February 2000. Based on the Initial Study and NOP prepared for the project, either no significant impact or less-than-significant impacts were found for water resources and therefore, were not analyzed in detail in the FEIR. Based on the NOP, the TICW would result in a less than significant impact to groundwater from the White Wolf Sub-basin because the TICW would use groundwater as a possible water supply.

Cumulative Impacts with the Project

The Project and TICW in combination would have less than significant cumulative impacts to water resources. Although the Project would transfer water from WRMWSD, this water would not otherwise be used by WRMWSD and, therefore, no additional demands on groundwater would occur.

6.3.2.5 *Kern County Valley Floor Habitat Conservation Plan*

Project Description

The Kern County Valley Floor Habitat Conservation Plan (VFHCP) is a program designed to conserve federally protected species, state protected species, and/or other species of concern within the VFHCP plan area. The objective of the VFHCP is to provide long-term protection of identified species while allowing for development and other land use changes within Kern County. The VFHCP plan area, generally described as the San Joaquin Valley floor, is bounded by San Luis Obispo County to the west, Kings and Tulare counties to the north, and the 2,000-foot elevation contour to the east and south, covering approximately 3,110 square miles.

Project's Environmental Analysis Status and Anticipated Impacts

An NOP for an EIR was issued by Kern County on November 11, 1997. However, this NOP is now obsolete due to changes in the project description and a new notice is to be issued in the future (personal communication, S. Strait 2003). A Notice of Intent (NOI) was issued by the U.S. Fish and Wildlife Service in October of 2002. The NOI states that the VFHCP will address the incidental take of 28 covered species, including the blunt-nosed leopard lizard [*Gambelia*

silas], Tipton kangaroo rat [*Dipodomys nitratoides nitratoides*], giant kangaroo rat [*Dipodomys ingens*], and San Joaquin kit fox [*Vulpes macrotis mutica*]. These wildlife species are listed as endangered under the federal Endangered Species Act. The VFHCP would have a compensation framework that encourages conservation of habitat areas and creates a system of conservation credits based on habitat quality. Credits are created by willing landowners and purchased by project proponents. Several compensation options are described in the VFHCP, including an option that would address incidental take of covered species that may occur as a result of certain activities associated with major land uses such as oil and gas, water systems, urban development, and public infrastructure. Potential impacts of the VFHCP may include impacts to water resources (treatment, storage, and conveyance systems) through the construction and maintenance of habitat.

Cumulative Impacts with the Project

The VFHCP may include construction and supply-related impacts to water resources through the treatment, storage, and conveyance systems for the construction and maintenance of habitat. Because the Project would not require construction activities, it would not have impacts to water resources from construction. Therefore, no cumulative impacts would occur. The Project would result in increased reliance on other water sources and groundwater. However, the total amount of water needed to implement the VFHCP is likely to be minor and the number of specific VFHCP projects that would be constructed within the WRMWSD is likely to be small. Therefore, cumulative impacts to water supply and groundwater of the VFHCP and the Project would be less than significant.

6.3.2.6 Monterey Amendment

Project Description

The Monterey Amendment describes a project that amends the Water Supply Contracts between DWR and the SWP Contractors to improve the management of SWP supplies and operations. More detailed discussions of the Monterey Amendment are provided in section 1.2.2, section 3.15, section 6.3.1.5, section 6.3.3.4, and Appendix D. The components of the Monterey Amendment evaluated in this section include the following:

- the permanent transfers of 130,000 AF of Agricultural to M & I (89,000 AF of SWP Table A Amounts from within Kern County), including the 41,000 AF of the Project;
- the permanent retirement of 45,000 AF of Table A Amount by Agricultural Contractors; and
- the transfer of the Kern Fan Element property to local control.

Environmental Analysis Status and Anticipated Impacts

As a result of the PCL Litigation Settlement Agreement, a new EIR is being prepared to evaluate the potential environmental impacts of both the Monterey Amendment and the additional program components specified in the Settlement Agreement. The NOP for the Monterey Agreement EIR does not specify the environmental resources to be addressed in the EIR or anticipated impacts of the project. Comment letters responding to the NOP, however,

expressed concern that impacts to water resources (water supply and groundwater) could occur in Kern County.

Cumulative Impacts with the Project

Impacts related to the Monterey Amendment components (the permanent transfers of water, the permanent retirement of water, and the transfer of the Kern Fan Element to local control discussed above) vary depending on the type of and location of its implementation. Impacts of the transfer of the Kern Fan Element property from DWR to local control and of the permanent retirement of the 45,000 AF of Table A Amount by Agricultural Contractors occurred prior to 1998 and are therefore considered in the existing environment. Preparation of the new EIR for the Monterey Amendment is still in its early stages, so there are no known changes proposed in the use of the Kern Fan Element property that would impact WRMWSD. Impacts of the 130,000AF Agricultural to M & I water transfer components of the Monterey Amendment vary depending on the location of the selling and receiving agency. All of the impacts of selling Table A Amounts from WRMWSD are included in the Project and, therefore, this component of the 130,000AF Agricultural to M & I water transfer is not considered a separate action and requires no cumulative impacts analysis.

6.3.2.7 Proposed Projects in or Adjacent to the WRMWSD not Producing Cumulative Impacts

The following projects were considered for inclusion in the cumulative analysis but not carried forward for the reasons noted:

- The San Emidio Specific Plan, a mixed-use new town planned for about 9,450 acres of land, is not included in this analysis because the project proponent has not gone forward with the proposed plan and potions of the lands have been sold or otherwise transferred ownership. Therefore, the project will likely not be developed.
- The Pastoria Energy Facility Expansion Project is not discussed here because the Application for Certification to the California Energy Commission was withdrawn and the project is not moving forward at this time.

6.3.3 Projects Affecting the CLWA Service Area

The only direct, adverse impact to the CLWA service would be a less than significant impact to hazards and hazardous materials resulting from an incremental increase in the use of chemicals for water treatment. Indirect impacts within the CLWA service area could occur because the Project would serve a portion of anticipated future growth and thus would indirectly cause impacts from new development. If all of the net water supply for the Project (41,000 AF) were used for anticipated future growth, it would be able to support between 9,500 and 35,600 new residential units (see Chapter 4, Growth-Inducing and Growth Related Impacts). Indirect impacts were identified for all resources analyzed in the present EIR (refer to Chapter 4). The projects described below consist of land development and water (supply, management, and distribution) projects.

6.3.3.1 Other CLWA Projects

16,000 AF Proposed Transfer of State Water Project Table A Amount From Kern County Water Agency, including Possible Annexations to CLWA

PROJECT DESCRIPTION

This project is described above in section 6.3.1.10. Briefly, this project involves the transfer of up to 16,000 AF of SWP Table A Amount to CLWA from Berrenda Mesa Water District, a member unit of KCWA. This water would be used by CLWA to support anticipated future demands from proposed annexations to the CLWA service area and/or planned increases in water demand from future development. The cumulative impacts of this project are addressed in two places in this chapter because the project has the potential to affect environmental resources associated with SWP facilities as well as those within the CLWA service area.

ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

The CEQA status of this project is described in section 6.1.3.10. According to the 2003 Initial Study, the 16,000 AF Transfer project would result in indirect growth-related impacts similar to those of the Project (refer to Chapter 4). The quantitative impact would be approximately 40 percent of the Project since the amount of water proposed for transfer is approximately 40 percent of the Project (16,000/41,000 = 0.39).

CUMULATIVE IMPACTS WITH THE PROJECT

Project-related direct impacts related to hazards and hazardous materials would contribute to the impacts of 16,000 AF transfer project to these resources. The 16,000 AF transfer project would increase the direct use of hazardous chemicals and other material by CLWA during the raw water treatment process. Project impacts would compound or increase these impacts. However, these substances would be handled in compliance with applicable laws and regulations. Therefore, the Project would have a less than significant cumulative impact to hazards and hazardous materials.

Project-related indirect impacts to all environmental resources would contribute to the indirect impacts of 16,000 AF transfer project to these resources. The 16,000 AF transfer project would remove an obstacle to growth in the CLWA service area by providing a reliable water supply that would be available for future development of approximately 3,700 to 13,900 dwelling units within the CLWA service area or in the proposed annexation areas. This future development would impact the full range of environmental resources, as described in Chapter 4. Project impacts (providing a reliable water supply that would be available for future development of approximately 35,600 dwelling units within the CLWA service area) would compound or increase these impacts. Therefore, the Project would have a significant cumulative indirect impact to all environmental resources.

Expansion of Rio Vista Water Treatment Plant (RVWTP)

PROJECT DESCRIPTION

This project would expand the pumping capacity at the existing pump station and the water treatment capacity at the existing RVWTP site. The existing facility is located on Bouquet Canyon Road on approximately 600 acres near the CLWA Administration Building. The plant was designed to facilitate future expansion to help meet anticipated increasing demand for potable water in the Santa Clarita Valley. It is currently able to supply retail purveyors with an estimated 30 mgd of potable water. The associated pump station is located near the Bouquet Canyon Road crossing of the Santa Clara River.

The RVWTP's treatment capacity would be expanded to 60 mgd by expanding the existing clarifier/filter structure. The construction of the structure would be within a previously disturbed area at the treatment plant site. Additionally, minor modifications to the existing support systems would be completed, e.g., replacing existing equipment with higher capacity equipment. Replacement of equipment would be completely within existing structures and/or previously disturbed areas.

Detailed project-specific engineering design and environmental review have not yet commenced. However, anticipated increases in demand are likely to require consideration of this project within the next few years.

ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

The impacts of this project were programmatically evaluated by CLWA in 1988 (CLWA 1988), and in 1989, CLWA evaluated the environmental impacts of the original construction of the RVWTP in a Mitigated Negative Declaration (CLWA 1989). Because no project-level EIR has been done on the expansion, a preliminary analysis was conducted for purposes of the present EIR. In general, direct, construction-related impacts would be expected although limited because ground-disturbing activity would take place in previously disturbed areas. The total disturbed area is likely to be less than 5 acres. It is anticipated that construction could result in temporary but significant impacts to air quality (combustive and fugitive dust emissions), cultural resources (potential disturbance during construction), geology and soils (construction on expansive soils), noise, and transportation (increased traffic). The project would result in significant long-term impacts to hazards and hazardous materials (increased use of water treatment chemicals) and utilities and service systems (increase in electricity used for increased treatment and increased need for storm drainage facilities.

The expansion of the RVWTP would increase treatment capacity by approximately 30 mgd (total capacity would be 60 mgd) and thus would result in indirect, growth-related impacts. Assuming operations consistent with average annual capacity, the incremental increase in capacity would serve approximately 17,000 housing units, whereas the maximum (peak) increase in capacity could serve approximately 34,000 housing units. The RVWTP project would result in indirect growth-related impacts to all resource categories similar to the affects of the Project (refer to Chapter 4).

CUMULATIVE IMPACTS WITH THE PROJECT

Project-related direct impacts to hazards and hazardous materials would contribute to the impacts of RVWTP expansion project to these resources. The RVWTP project would increase the direct use of hazardous chemicals and other material by CLWA during the raw water treatment process. These substances would be handled in compliance with applicable laws and regulations. Project impacts would compound or increase these impacts. Therefore, the Project would have a significant cumulative impact to hazards and hazardous materials.

Project-related indirect impacts to all environmental resources would contribute to the direct and indirect impacts of the RVWTP expansion project. During construction the RVWTP expansion project would impact air quality, cultural resources, geology and soils, noise, and transportation. The RVWTP expansion project would result in significant long-term impacts to utilities and service systems. The RVWTP expansion project would also remove an obstacle to growth in the CLWA service area by providing potable water treatment for future development of approximately 17,000 dwelling units within the CLWA service area. This future development would impact the full range of environmental resources, as described in Chapter 4. Project impacts (providing a reliable water supply that would be available for future development of approximately 35,600 dwelling units within the CLWA service area) would compound or increase these impacts. Therefore, the Project would have a significant cumulative indirect impact to all environmental resources.

Expansion of Earl Schmidt Filtration Plant

PROJECT DESCRIPTION

CLWA is upgrading and expanding the treatment system of the existing Earl Schmidt Filtration Plant (ESFP) capacity from 33.6 mgd to 56 mgd. The existing ESFP is located at 32700 North Lake Hughes Road in the community of Castaic. Construction started in September 2003 and is anticipated to last approximately 18-24 months. The ESFP project will provide upgrades to meet water quality regulations, provide a greater degree of redundancy in treatment capacity in the event of an emergency, meet existing summer peaking needs, and serve future growth. The plant's expansion also includes process improvements to achieve compliance with current and proposed water quality regulations as well as replacement of an existing raw water pumping station.

PROJECT'S ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

In April 2003, CLWA certified the Final EIR on the ESFP Expansion project and filed the Notice of Determination (CLWA 2003a). Construction of the ESFP project would result in temporary but significant impacts to air quality, cultural resources (potential disturbance during construction), geology and soils (construction on expansive soils), noise, and transportation (increased traffic). Operation of the ESFP Expansion project would result in impacts to aesthetics, agricultural resources, biological resources, geology and soils, hazards and hazardous materials, land use and planning, noise, and recreation resources.

The ESFP expansion project would increase treatment capacity by approximately 22.4 mgd and thus would result in indirect, growth-related impacts. Assuming operations consistent with average annual capacity, the incremental increase in capacity would serve approximately

13,000 housing units, whereas the maximum (peak) increase in capacity could serve approximately 30,000 housing units. The ESFP expansion project would result in indirect growth-related impacts to all resource categories similar to the affects of the Project (refer to Chapter 4).

CUMULATIVE IMPACTS WITH THE PROJECT

Project-related direct impacts to hazards and hazardous materials would contribute to the impacts of ESFP expansion project to these resources. The ESFP project would increase the direct use of hazardous chemicals and other material by CLWA during the raw water treatment process. These substances would be handled in compliance with applicable laws and regulations. Project impacts would compound or increase these impacts. Therefore, the Project would have a significant cumulative impact to hazards and hazardous materials.

Project-related indirect impacts to all environmental resources would contribute to the direct and indirect impacts of ESFP expansion project. During construction the ESFP expansion project would impact aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, land use and planning, populations and housing, public services, noise, transportation utilities and water resources. The ESFP expansion project would also remove an obstacle to growth in the CLWA service area by providing potable water treatment for future development of approximately 13,000 dwelling units within the CLWA service area. This future development would impact the full range of environmental resources, as described in Chapter 4. Project impacts (providing a reliable water supply that would be available for future development of approximately 35,600 dwelling units within the CLWA service area) would compound or increase these impacts. Therefore, the Project would have a significant cumulative indirect impact to all environmental resources.

Honby Extension Storage Project

CLWA is in the process of engineering the Honby Extension/Storage Reservoir Project (Honby Extension). The Honby Extension project is a 33-inch, approximately 30,000 foot long waterline, originating near the intersection of Honby Avenue and Santa Clara Street where a new pump station also will be constructed. The Pipeline will travel from the new pump station easterly and southerly, terminating in a new storage reservoir west of Rolling Hills Avenue and Warmuth Road. The new pump station would provide the lift to transport water to the proposed 21-million gallon storage reservoir. The Honby Extension is expected to be under construction starting in 2003, with construction lasting approximately 18 months.

PROJECT'S ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

CLWA completed a Mitigated Negative Declaration and approved the project in 1999. Hilltop construction of the storage reservoir will incorporate design elements to address site-specific geology including landslides, mudflows, and safety issues. Significant but mitigable impacts were identified for geology and soils (erosion, sedimentation, expansive soils, and collapsible soils), water quality (discharge of pollutants into adjacent water bodies), air quality (construction related air emissions), transportation and traffic (related to emergency access and bicycle/pedestrian traffic along the Santa Clara River), biological resources (e.g., least Bell's Vireo, southwestern willow flycatcher, alluvial scrub habitat, nesting of migratory birds), noise

(construction related), and aesthetics (related to construction of the pump station and reservoir).

Cumulative Impacts with the Project

Project-related direct impacts to hazards and hazardous materials would contribute to the construction impacts of the Honby Extension project because both projects would require the use of hazardous materials. These potentially cumulative impacts would be limited to the duration of the construction period and implementation of the identified mitigation measures for each project would reduce this impact to a less than significant level.

Project-related indirect impacts to all environmental resources in the CLWA service area would also contribute to the impacts of Honby Extension project. Construction of the Honby Extension project would impact soils, degrade air quality from construction emissions, temporarily restrict emergency access, create additional noise, and degrade terrestrial habitat. Project impacts (providing a reliable water supply that would be available for future development in the CLWA service area) would compound or increase these impacts. Therefore, the Project would have a significant cumulative indirect impact to aesthetics, air quality, biological resources, geology and soils, noise, and transportation.

Pitchess Pipeline

The Pitchess Pipeline is a 24-inch, approximately 4,300-foot-long pipeline that would originate east of Interstate 5 near the intersection of the Old Road and Sedona Way in unincorporated Los Angeles County. A portion of the pipeline is located within the Pitchess Honor Farm and portions also cross Castaic Creek and other locations. The Pitchess Pipeline will provide imported water to supplement existing groundwater supplies currently used by local purveyors for demand generated in the northwestern portion of the CLWA service area.

Project's Environmental Analysis Status and Anticipated Impacts

CLWA approved a Mitigated Negative Declaration for the project in 1999, at that time referred to as the Lateral Extension (CLWA 1998c). Construction of the Pitchess Pipeline project would result in temporary but significant impacts to air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise, transportation, and water quality. Operation of the Pitchess Pipeline project would result in indirect impacts to environmental resources from growth-related development.

Surveys for the arroyo toad were conducted at the Castaic Creek crossing and surveys for active nests of migratory birds were conducted in the construction area. Based on the results of the surveys, no additional measures are needed to reduce biological impacts. Other mitigation measures have been identified for impacts to archaeological/paleontological resources (i.e., construction monitoring under certain conditions), geology and soils impacts (i.e., Best Management Practices for erosion/sedimentation control), and mitigation measures for traffic, geotechnical/fault rupture, seismic and other hazards, collapsible soils, erosion, water quality, construction emissions, emergency access, air quality, and other impacts.

CUMULATIVE IMPACTS WITH THE PROJECT

Project-related direct impacts to hazards and hazardous materials would contribute to the construction impacts of the Pitchess Pipeline project. These potentially cumulative impacts would be limited to the duration of construction and implementation of the identified mitigation measures for each project would reduce this impact to a less than significant level.

Project-related indirect impacts to all environmental resources in the CLWA service area would also contribute to the impacts of Pitchess Pipeline project. Construction of the Pitchess Pipeline project would impact localized cultural resources, adjacent soils, and degrade terrestrial habitat by trenching and other direct disturbance. Construction would degrade air quality from construction emissions, temporarily restrict emergency access, create addition noise and. Project impacts (providing a reliable water supply that would be available for future development in the CLWA service area) would compound or increase these impacts. Therefore, the Project would have a significant cumulative indirect impacts to air quality, biological resources, cultural resources, geology and soils, noise, and transportation.

2002 and 2003 Groundwater Banking Projects

The Groundwater Banking Projects involve delivering a portion of CLWA's SWP Table A allocation that is not needed to meet anticipated demands in 2002 to the Semitropic Water Storage District (SWSD). SWSD would temporarily store up to 24,000 AF of CLWA's unused 2002 SWP deliveries and up to 35,000 AF of CLWA's unused 2003 SWP deliveries for later withdrawal and delivery to the CLWA service area in a future year or years, within 10 years from the date of banking the water in each project, i.e., 2012 and 2013, respectively. The 24,000 AF and 35,000 AF amounts would be stored in the SWSD Groundwater Banking Project, using SWSD's existing groundwater banking facilities. SWSD may use all or a portion of this SWP water in lieu of pumping groundwater for irrigation. Upon request, SWSD would return all or a portion of CLWA's previously stored water in one or more years, by either (1) pumping the water from its groundwater basin through pumpback facilities into the California Aqueduct, at which time the water would become part of the SWP water supply pool and would be conveyed to CLWA; or (2) by requesting that an equivalent amount of SWSD's SWP water be delivered to CLWA via the California Aqueduct. Storage of the water would not require the construction of new facilities or the improvement of any existing facilities within the CLWA or SWSD service areas.

PROJECT'S ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

CLWA circulated the Castaic Lake Water Agency 2002 Groundwater Banking Project Negative Declaration (and accompanying Initial Study) in August 2002 (CLWA 2002a). CLWA subsequently filed a Notice of Determination for this project in December of 2002. A lawsuit challenging this project was filed in Superior Court of Ventura County in February, 2003 (*California Water Network, Friends of the Santa Clara River v. Castaic Lake Water Agency* [Ventura County Superior Court Case No. CIV 215327]). Trial is scheduled for April, 2004. An additional lawsuit was filed on this project in Sacramento Superior Court in April 2003 (*Friends of the Santa Clara River v. State of California Department of Water Resources and Castaic Lake Water Agency* (Sacramento Superior Court Case No. 03-CS 00258) to challenge DWR approval of the point of delivery agreement to deliver the SWP water to the Semitropic Water Storage District. The case has been stayed until the completion of the Network case.

CLWA also circulated the Castaic Lake Water Agency 2003 Groundwater Banking Project Negative Declaration (and accompanying Initial Study) in December 2003 (CLWA 2003a). In each case, it was determined that the implementation of this project would result in a shift in the timing of use of electrical energy required to convey temporarily stored water to CLWA. Specifically, there would be a reduction in overall energy use for pumping along the SWP when water is stored in SWSD, and an increase in overall energy use when the water is returned to CLWA. The net effect would be an increase in the use of electrical energy needed to inject and recover the stored water. This incremental increase in energy use would indirectly result in increased air emissions from power plant operations, which would have less than significant adverse impacts within the San Joaquin Valley air basin, given that power plants are required to effectively mitigate air emissions under the conditions of air permits. Implementation of the groundwater banking projects were determined to not have the potential to significantly affect an environmental resource and no mitigation measures were proposed. The Groundwater Banking Projects would not result in growth inducement because each project period is temporary (i.e., 10 years), and would not provide a long-term water supply to support growth.

Cumulative Impacts with the Project

Project-related direct impacts to hazards and hazardous materials in the CLWA service area would contribute to the impacts of 2002 or 2003 Groundwater Banking projects. The water banking projects do not have impacts to environmental resources in the CLWA service area. Since there were no impacts identified to environmental resources in the CLWA service area there would be no cumulative impacts when this cumulative project is considered together with the Project. Water stored by these actions is considered to improve the reliability of the supply for the existing users in the CLWA service area but does not contribute to the reliability of water supplies for future development because it does not exceed 10 years from the date the water is banked.

Sky Blue Tank Site Additions

In April 2003, CLWA approved a Mitigated Negative Declaration (MND) for the Sky Blue Tank Site Additions (the Sky Blue project), a project that will be built by now CLWA Santa Clarita Water Division, a retail purveyor. The project will include construction of two above-ground water storage tanks and an associated storm drainage system on a site owned by the purveyor. The initial construction timeframe would last for approximately 3-4 months in the summer or fall of 2003, followed by another similar construction time period 2 years later. This site already contains a 1-million-gallon water tank and a 2-million-gallon water tank. Access to the site would be provided by the existing access road off of Whites Canyon Road just north of Enderly Street. The project would provide peak hour water usage for an approved residential development and would complete the water supply for this development. A previous EIR for this development (Engineering Service Corporation 1987) addressed all issues relating to water supply for the development. The Sky Blue project MND addresses only impacts resulting from the construction of the tanks.

Project's Environmental Analysis Status and Anticipated Impacts

The Sky Blue Project MND identifies significant impacts that would be reduced to less than significant after implementation of mitigation measures for the following resources: biological resources, geology and soils, hazards (construction in a high fire hazard area), hydrology and

water quality, and land use and planning. It identifies adverse, less than significant impacts for the following resources: aesthetics, air quality, noise, transportation and traffic, and utilities/service systems.

CUMULATIVE IMPACTS WITH THE PROJECT

Project-related direct impacts to hazards and hazardous materials in the CLWA service area would contribute to the impacts of Sky Blue project. Operational impacts not covered in the Sky Blue project were addressed in the 1987 EIR and were considered as part of the existing environmental conditions evaluated for the Project. Impacts to hazards and hazardous materials used during construction of the Sky Blue Tasks project would combine with the increased use of hazardous materials by the Project although the types of hazardous materials for water treatment would not combine with the types of materials to be used for the Sky Blue project. The Sky Blue project would insignificantly impact aesthetic, air quality biological resources, cultural resources, geology ands soils, fire danger hazards, noise, transportation, and utilities. Project indirect impacts (providing a reliable water supply that would be available for future development in the CLWA service area) would compound or increase these impacts. Therefore, the Project would have a significant cumulative indirect impact to aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards, noise, transportation, and utilities.

Perchlorate Treatment and Aquifer Restoration

In 1997, the Santa Clarita Water Company (CLWA's Santa Clarita Water Division) detected perchlorate in two production wells tapping the Saugus Formation, both of which are near the Whittaker-Bermite property, located east of San Fernando Road and south of Soledad Canyon Road. These wells, Saugus-1 and Saugus-2, had perchlorate levels as high as 45 $\mu g/L$ and have been retired. Two other Saugus production wells in the valley have shown detectable levels of perchlorate below 18 $\mu g/L$ and the use of these wells has been suspended. These wells are located in the Newhall County Water District and in Valencia Water Company's service area. The combined capacity of all four Saugus wells is 8,000 gallons/minute. In addition, perchlorate has recently (2002) been detected in one Alluvial production well located near the former Whittaker-Bermite facility, which has been the primary focus of potential perchlorate contamination that has impacted the wells in the region. That well tested positive for perchlorate at a level of 5.9 $\mu g/L$ (SCVWP 2003). The five perchlorate-impacted wells have been removed from active water supply service (SCVWP 2003). The affected Los Angeles County Purveyors are continuing to test for perchlorate in all of their active Alluvial and Saugus wells, and are developing a plan for a water treatment process to return the impacted wells to service as soon as possible.

The development and implementation of a cleanup plan for the Whittaker-Bermite site and the impacted groundwater is being coordinated among CLWA, the Purveyors, the State Department of Toxic Substances Control (DTSC), and the U.S. Army Corps of Engineers. In February 2003, the DTSC and the impacted Purveyors entered into an agreement entitled *Environmental Oversight Agreement* [Agreement] (SCVWP 2003). Under the Agreement, DTSC will provide review and oversight of the response activities being undertaken by the impacted Purveyors related to the detection of perchlorate in the five impacted wells (SCVWP 2003). Under the Scope of Work of that Agreement, the purveyors will prepare (1) Well

Characterization Reports; (2) a Health-Based Risk Assessment; (3) a Regional Groundwater Flow Model; and (4) a Treatment Technology Evaluation Report (SCVWP 2003). Several treatment technologies for the removal of perchlorate from water are currently available and the affected water agencies intend to develop their understanding of the contamination to assist in the selection of appropriate treatment to remediate the perchlorate problem. A standard for Maximum Containment Level (MCL) for perchlorate is not expected to be adopted until 2004 or 2005 (SCVWP 2003).

Project's Environmental Analysis Status and Cumulative Impacts with the Project

CEQA compliance has not been initiated for the perchlorate restoration project. Although remediation using some form of treatment technology is reasonably foreseeable based on the Agreement referred to above, and investigations are underway, the type of treatment technology, project timing, location, and description of facilities and processes utilized for cleanup, and the potential environmental effects, are currently speculative. The project has therefore not been carried forward for cumulative analysis. Cumulative impacts would be addressed, as determined to be necessary, in the future when project-specific CEQA compliance for that project is undertaken.

Honby Parallel

Planned and anticipated development in the eastern portion of the CLWA service area requires the installation of additional treated water conveyance capacity to serve current and future customers. CLWA is in the process of initiating engineering design of the Honby Parallel Pipeline Project (Honby Parallel). The Honby Parallel would connect to the outlet work of the RVWTP and traverse undeveloped land and follow the existing pipeline alignment eastward along and across the Santa Clara River to the intersection of Santa Clara Street and Furnival Avenue in Santa Clarita.

Project's Environmental Analysis Status and Anticipated Impacts

When pipeline design and siting is sufficiently complete CLWA will complete a CEQA analysis. Best Management Practices and other actions will be identified and incorporated into the project to reduce the impacts aesthetics, air quality, biological resources, cultural resources, hazards, geology and soils, noise, transportation, utilities, and water quality impacts. However, the Honby Parallel project would impact these resources.

Cumulative Impacts with the Project

Project-related direct impacts to hazards and hazardous materials would contribute to the construction impacts of Honby Parallel project. These potentially cumulative impacts would be limited to the duration of the construction period and implementation of the identified mitigation measures for each project would reduce this impact to a less than significant level.

Project-related indirect impacts to all environmental resources in the CLWA service area would also contribute to the impacts of Honby Parallel project. Construction of the Honby Parallel project would impact soils, degrade air quality from construction emissions, temporarily restrict emergency access, create addition noise, and degrade terrestrial habitat. Project impacts (providing a reliable water supply that would be available for future development in the

CLWA service area) would compound or increase these impacts. Therefore the Project would have a significant cumulative indirect impact to aesthetics, air quality, biological resources, geology and soils, noise, and transportation.

6.3.3.2 *Projects Listed in the County of Los Angeles Development Monitoring System (DMS)*

Project Description

The DMS system is a list of proposed and approved projects maintained by the County of Los Angeles to provide a current estimate of certain development and environmental parameters. The DMS includes information on pending, approved, and recorded projects filed within the unincorporated area of the Santa Clarita Valley, as well as the City of Santa Clarita. Data were obtained for the Santa Clarita Valley for 1998 and an update is included for 2002. The intended use of the DMS system is to determine individual project and cumulative demands for public services and infrastructure. Because the Project is a water supply augmentation rather than a development project, a standard analysis using the DMS data would not apply. However, the DMS can be used to determine how much new development is anticipated in addition to development potentially accommodated by the Project. An estimate of additional development that could potentially be served by the Project was identified in Chapter 4.0.

Pending, approved, and recorded land development projects listed in the 1998 DMS and an update for 2002 are shown in Tables 6.3-1 and 6.3-2, respectively. The exact timing of the completion of these projects is uncertain because the completion schedule is dependent upon many variables including market demand, construction phasing, capital resources of the individual developers and ability of the various governmental agencies to process and issue the required permits. In addition, it should be noted that projects listed in the DMS sometimes remain on the list beyond completion or after construction has been delayed or may no longer be likely, and therefore the DMS list is only an estimate of known future development.

Table 6.3-1. 1998 DMS for the Santa Clarita Valley Planning Area (Housing Units)

Zone District Description	*Pending*	*Approved*	*Recorded*	*Totals*
Bouquet Canyon	834	676	56	1,566
Castaic Canyon	714	3,128	0	3,842
City of Santa Clarita	1,516	1,793	167	3,476
Newhall	514	1,758	91	2,363
North Claremount	-	-	-	-
Sand Canyon	920	1,030	474	2,424
Soledad	595	203	0	798
Miscellaneous.	-	-	1,504	1,504
Total Units	**5,093**	**8,588**	**2,292**	**15,973**

Source: Los Angeles County 1998.

Table 6.3-2. 2002 DMS for the Santa Clarita Valley Planning Area (Housing Units)

Zone District Description	*Pending*	*Approved*	*Recorded*	*Totals*
Bouquet Canyon	427	0	956	1,383
Castaic Canyon	4,090	3,049	1,910	9,049
City of Santa Clarita	1,592	2,853	1,973	6,418
Newhall	1,092	2,646	2,864	6,602
North Claremount	0	0	12	12
Sand Canyon	1,543	5,038	2,073	8,654
Soledad	868	0	127	995
Total Units	**9,612**	**13,586**	**9,915**	**33,113**

Source: Los Angeles County 2002.

Project's Environmental Analysis Status and Anticipated Impacts

Projects listed in the DMS would impact a broad spectrum of environmental resources. As a result of the land use approval process, including the project-specific CEQA analyses, many of these impacts have been reduced to less than significant or no impact through the application of mitigation measures. However, project-specific findings have found that other community needs and other factors have over-ridden the concerns for environmental resources and impacts to these resources.

Cumulative Impacts with the Project

If all of the water supply for the Project were used for anticipated future growth, it would be able to support 35,600 new residential units in an average water year; thus, there is overlap between the amount of growth supported by the Project and the amount of growth projected by the DMS. The impacts from development included in the DMS would not exceed those described as growth-related impacts of the Project in Chapter 4. The types of cumulative impacts that would occur are as described in Chapter 4.

6.3.3.3 Reasonably Foreseeable Land Development Projects Not Listed in the DMS

Reasonably foreseeable land development projects not identified in the DMS because tentative tract maps have not been submitted were also considered.

Newhall Ranch Specific Plan and Water Reclamation Plant

PROJECT DESCRIPTION

The project would include residential, commercial and mixed-use development. The project would include a total of 21,308 dwelling units, 5,549,00 square feet of commercial/mixed use development, and a 6.8 mgd water reclamation plant. The specific plan includes establishment

of San Fernando spineflower conservation/preserve areas. The project site is located wholly within the CLWA service area just east of Ventura County on the north slopes of the Santa Susana Mountains west of Valencia and one-eighth of a mile from the Magic Mountain Theme Park.

The project's potable water supplies would be supplied, in part, by using the applicant's historical Alluvial Aquifer groundwater, which is presently committed to agricultural uses. The project applicant also has secured a potable water supply through a contract with Nickel Family, LLC (the source of this water is the Kern River and is secured through pre-1914 water rights). This contract has secured the applicant's rights to 1,607 acre-feet of water per year from this source.

In addition, the applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in Semitropic Water Storage District's existing groundwater banking project. Any water stored in this account in Semitropic's existing banking project could be extracted in dry years in amounts of up to 4,950 acre-feet per year. This supply would be used as a source for the Specific Plan in dry years only.

The applicant's non-potable water for the project would be supplied, in part, by reclamation of wastewater from the Water Reclamation Plant, which is to be constructed as part of the Newhall Ranch Specific Plan. In addition, CLWA would serve the project with reclaimed water from existing upstream Water Reclamation Plants, consistent with CLWA's draft Reclaimed Water System Master Plan, which is being implemented in stages. These two sources would supply all of the project's non-potable water needs.

PROJECT'S ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

The Board of Supervisors of Los Angeles County certified the Newhall Ranch Specific Plan Final EIR, as revised by an additional environmental analysis, and re-approved the Specific Plan and related project approvals, on May 27, 2003. The additional environmental analysis was required to address certain specified issues arising from litigation challenging the Specific Plan and environmental documentation ("Newhall Ranch litigation"), discussed below.

The County's initial certification of the Specific Plan EIR was challenged in a consolidated CEQA action in Kern County Superior Court (United Water Conservation District v. County of Los Angeles, et al., Case No. 239324-RDR). After a hearing in 2000, the trial court found that the Final EIR required additional environmental analysis on certain issues, including water supplies to serve the Specific Plan. As a result, the trial court set aside approval of the project and the EIR certification, but only with respect to the specified issues. The trial court did not set aside approval of the project or EIR certification with respect to any other issues.

On May 27, 2003, the County's Board of Supervisors certified the additional environmental analysis and re-approved the project. Project opponents again challenged the adequacy of the environmental documentation, but the trial court ruled in favor of both the County and the applicant by finding that the additional analysis met the requirements of both CEQA and the court's prior decision in the Newhall Ranch litigation.

On December 19, 2003, project opponents filed an appeal of the trial court's decision in the Newhall Ranch litigation. On April 1, 2004, the parties settled their differences, resulting in the

dismissal of the appeal and the final resolution of the Newhall Ranch litigation. It also cleared the way for the Newhall Ranch environmental documentation to be used as the programmatic EIR to guide development of the Specific Plan.

The Newhall Ranch Final EIR, as revised (Impact Sciences 2003), identified impacts and mitigation to the following environmental resource areas: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise, pollution, housing and employment, public services, public utilities, traffic and transportation, and water resources.

Cumulative Impacts with the Project

Project-related direct impacts to hazards and hazardous materials as well as indirect impacts to all environmental resources in the Santa Clarita valley would contribute to the impacts of the Newhall Ranch project. The Newhall Ranch project environmental analysis (Impact Sciences 2003) has identified unavoidable significant impacts to the following resource areas: agricultural resources (loss of Prime Farmland); visual (conversion of land from rural to suburban); air quality (vehicular, construction, and operational emissions); and solid waste disposal (landfill capacity for solid and hazardous waste).

Significant but mitigable impacts have been identified to geology and soils (impacts associated with grading activities); environmental safety (oil and natural gas related impacts); biological resources (impacts to the San Fernando Valley spineflower); traffic/access (increase in the amount of average daily traffic trips); noise (vehicular noise); water resources and wastewater disposal (water supply and water quality of wastewater entering the Santa Clara River); natural gas and electricity demand; education (impacts on school facilities); public services and fire hazards (impacts relating to fire and police services); libraries (demands for library materials and services); and parks, recreation, and trails (impacts to County parks and trails).

Less than significant impacts were identified for the following resource areas: cultural/paleontological resources (potential impacts to undiscovered buried resources from grading activities); environmental safety (placement of development within a dam inundation area, hazards associated with electrical transmission lines and natural gas lines, transportation of hazardous waste along SR-126, and the proximity of the project to the Chiquita Canyon Landfill); biological resources (impacts to the use of Salt Canyon as a wildlife corridor, and impacts to species within a Significant Ecological Area (SEA); and population, housing, and employment.

Project indirect impacts (providing additional water supply that would be available for future development with potential impacts to various environmental resources in the CLWA service area) would compound or increase these impacts. Since the water demands for the Newhall Ranch Project would be supplied by local groundwater, recycled water, and imported supplies from the Kern River, the water supply component of utilities would not be cumulatively compounding or increased by the Project. However, future use of water supplied by the Project would result in development not identified in the Newhall Ranch project-specific environmental analyses. Therefore the Project would have a significant cumulative indirect impact to much of the full range of environmental resources listed above.

Stevenson Ranch Phase V Specific Plan

PROJECT DESCRIPTION

This project consists of the development of approximately 3,500 single family and multi-family dwelling units, three schools, a sports complex, library facilities, commercial, and other uses. The location is 0.5 miles west of I-5 and 1.25 miles south of Highway 126, southwest of Six Flags Magic Mountain in Stevenson Ranch. The land is outside the CLWA service area and an annexation to the CLWA service area is in process (see the discussion above regarding the CLWA 16,000 Acre-Foot Proposed Transfer of State Water Project Table A Amount From Kern County Water Agency, Including Possible Annexations to CLWA).

PROJECT'S ENVIRONMENTAL ANALYSIS STATUS AND ANTICIPATED IMPACTS

The NOP and Initial Study for the Stevenson Ranch Phase V Specific Plan were issued in April 1999 (County of Los Angeles Department of Regional Planning [LADRP] 1999). A Draft EIR has not yet been issued and changes to the specific plan may occur. The Initial Study identified impacts on the following environmental resources: aesthetics, air quality, biological resources, cultural resources, geology and soils, noise, traffic and transportation public services, public utilities, population and housing, recreation, and water quality/water resources.

CUMULATIVE IMPACTS WITH THE PROJECT

The Initial Study identified significant impacts for the following resources: geology and soils (landslides, slope instability, grading); hazards of flood (creeks, erosion) and fire (Fire Zone 4, transmission line); noise (oil extraction facilities, schools proposed); water quality (run-off into storm drain); air quality (exceeds state criteria); biological resources (oak trees, creeks and riparian habitat,); cultural resources (along water courses and outcropping); aesthetics (trail, grading, altered viewshed); transportation (exceeds congestion management program thresholds); utilities including sewage disposal (requires annexation to Sanitation District); education (school and library impacts); fire/sheriff (water, sewage, solid waste); population/housing/employment, and recreation (growth inducing; recreation facilities may be needed).

Project indirect impacts (providing additional water supply that would be available for future development in the CLWA service area) would compound or increase these impacts. Since the Stevenson Ranch Phase V Project would be supplied by new water sources not currently available within CLWA, current and future uses of water supplied by the Project would result in development not identified in the Stevenson Ranch Phase V environmental analyses. Therefore, the Project would have significant cumulative indirect impacts to the full range of environmental resources listed above.

6.3.3.4 *Monterey Amendment*

Project Description

A discussion of the Monterey Amendment is provided in section 1.2.2, section 3.15, section 6.3.1.5, section 6.3.2.5, and Appendix D. This amendment contains many provisions including ones that allow the Project. The cumulative components of the Monterey Amendment

evaluated in section 6.3 are those not addressed as a portion of the Project and that may apply to Project-related impacts in the CLWA service area. As indicated in Table 6.3-3, these include the permanent transfers of the balance of the remaining portion of the 130,000 AF of Agricultural to M & I transfer (89,000 AF) of SWP Table A Amounts from within Kern County, in addition to the 41,000 AF included in the Project.

Project's Environmental Analysis Status and Anticipated Impacts

An EIR is being prepared to evaluate the potential environmental impacts of both the Monterey Amendment and the additional program components specified in the Settlement Agreement (see section 1.2.2 for a more detailed discussion of the Settlement Agreement). The NOP for the Monterey Agreement EIR does not specify the environmental resources to be addressed in the EIR, anticipated impacts of the project, or potential mitigation measures. Comment letters responding to the NOP, however, expressed concern that impacts could occur to the following environmental resources in the CLWA service area that also would be affected by the Project: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils; hazards and hazardous materials, noise, land use, population and housing, public facilities, recreation, transportation, utilities and water resources.

Cumulative Impacts with the Project

Project-related direct impacts to hazards and hazardous materials as well as indirect impacts to all environmental resources in the Santa Clarita Valley would contribute to the impacts of the Monterey Amendment project, as implemented in other locations outside of the CLWA service area. The permanent transfer of Table A Amounts to other nearby urban water agencies would have the similar indirect impacts in those locations as the indirect impacts anticipated for the CLWA service area. Additional development supported by the permanent transfer of Table A Amounts to the Palmdale-Lancaster region of Los Angeles County would increase traffic on Highway 14, thereby increasing air pollutants and noise, and risks from the transportation of hazardous materials. The implementation of the Monterey Amendment would have impacts outside the service area to aesthetics, agricultural resources, biological resources, cultural resources, geology and soils; land use, population and housing, public facilities, recreation, transportation, utilities and water resources. These types of impacts are localized and would not contribute to a cumulative impact in combination with the Project (e.g., impacts to public facilities in one geographic area would not create a cumulative impact in combination with impacts to public facilities in another geographic area). Therefore, the Project would have only significant cumulative impacts to air quality, hazards and hazardous materials, noise, and transportation resources.

6.4 CUMULATIVE IMPACTS BY RESOURCE

This section summarizes cumulative impacts by resource in each of the three geographic areas under consideration and identifies mitigation measures where appropriate (Public Resources Code sec. 21102; CEQA Guidelines secs. 15002, 15021). The implementation of these mitigation measures may be the responsibility of agencies other than CLWA, who would adopt them as part of their own environmental review and approval processes.

Table 6.3-3. Permanent Table A Transfers Completed Under the Monterey Amendment Provisions (Article 53)

From (Seller)	*To (Buyer)*	*Amount (AF)*	*Year Effective*	*CEQA Status*
COMPLETED TRANSFERS				
Berrenda Mesa Water District	Mojave Water Agency	25,000	1998	NOD – 11/1996
Belridge Water Storage District	Palmdale Water Agency	4,000	2000	NOD – 7/1998; NOD – 4/1999
Berrenda Mesa Water District	Alameda County Flood Control and Water Conservation District Zone 7	7,000	2000	NOD – 3/1996
Lost Hills Water District	Alameda County Flood Control and Water Conservation District Zone 7	15,000	2000	NOD – 7/1998
Wheeler Ridge-Maricopa Water Storage District	Castaic Lake Water Agency	41,000	2000	Subject of this EIR NOD – 3/1999
Belridge Water Storage District	Alameda County Flood Control and Water Conservation District Zone 7	10,000	2001	NOD – 7/1998; NOD – 4/1999
Belridge Water Storage District and Berrenda Mesa Water District	Solano County Water Agency	5,756	2001	NOD – 7/1998; NOD – 4/1999
Belridge Water Storage District and Berrenda Mesa Water District	Napa County Flood Control and Water Conservation District	4,025	2001	NOD – 12/2000
Subtotal		**70,781**		
ANTICIPATED TRANSFERS				
Berrenda Mesa Water District	Alameda County Flood Control and Water Conservation District Zone 7.	2,219	Future Year	NOP issued
Berrenda Mesa Water District	Castaic Lake Water Agency	16,000	Future Year	NOP – July 2003; Draft EIR in preparation
Subtotal		**18,219**		
Total		**130,000**		

Cumulative Impacts Associated with the SWP and Associated Facilities by Resource

Aesthetic Resources—The Project and other projects discussed in this section would result in adverse less than significant cumulative aesthetic impacts due to differences in the timing and location of the aesthetic impacts associated with the Project and other projects. Cumulative impacts to aesthetic resources associated with the SWP facilities would be less than significant because these projects would insignificantly change water levels in San Luis Reservoir, Quail Lake, Pyramid Lake, Castaic Lake, and other SWP facilities.

Air Quality—Significant cumulative impacts to air quality associated with the SWP and Associated Facilities geographic area would result from implementation of the Project and other projects because the Project impact, although less than significant, would increase the significant air quality impacts from the CALFED project and the San Luis Reservoir Low Point Project. The significant cumulative impacts would be reduced to less than significant through the implementation of the measures listed below. Significant impacts associated with the CALFED Bay Delta Program project would be mitigated with the implementation of the following mitigation strategies identified in the EIS/EIR: (1) setting traffic limits on construction vehicles; (2) maintaining properly tuned equipment; (3) limiting the hours of operation or amount of equipment; (4) limiting the amount of agricultural chemicals; (5) coordinating prescribed burning programs with relevant air quality management agencies; (6) regular, periodic watering of construction sites; (7) using soil stabilizers and dust suppressants on unpaved service roadways; (8) daily contained sweeping of paved surfaces; (9) limiting vehicle idling time; (10) using alternatively fueled equipment; (11) requiring selection of borrow sites that are closest to fill locations; (12) implementing construction practices that reduce generation of particulate matter; (13) hydroseeding and mulching exposed areas; (14) using cultivating practices that minimize soil disturbance; (15) following air basin management plans to avoid or minimize vehicle-related emissions; (16) restricting the kinds of recreational vehicles or the times of operation for certain off-road vehicles on fallowed agricultural land to limit the amount of fugitive dust. Although an EIR has not yet been published for the San Luis Reservoir Low Point Improvement Project, based on a preliminary analysis of the impacts, similar measures to those listed above for the CALFED project could be implemented to reduce significant impacts.

Cultural Resources—Less than significant cumulative impacts to cultural resources would result from the implementation of the Project and other cumulative projects because of differences in the timing and location of the cultural impacts associated with the Project and other cumulative projects. Cumulative impacts to cultural resources associated with the SWP facilities would be less than significant since these projects would insignificantly change water levels in San Luis Reservoir, Quail Lake, Pyramid Lake, Castaic Lake, and other SWP facilities.

Geology, Soils and Minerals—Less than significant impacts to geology, soils and minerals would result from the implementation of the Project and other cumulative projects mainly due to the differences in the timing, location and nature of the impacts associated with the Project and other projects. Cumulative impacts to geology, soils and mineral resources associated with the SWP facilities would be less than significant since these projects would insignificantly change water levels in San Luis Reservoir, Quail Lake, Pyramid Lake, Castaic Lake, and other SWP facilities.

Utilities/Service Systems—Less than significant cumulative impacts to utilities and service systems would result from the implementation of the Project and other cumulative projects. Increased energy consumption would result in cumulative impacts to utilities/service systems from the implementation of the Project and other projects, but impacts would be less than significant due to anticipated power supplies available or planned to meet demands in California and no expansion or construction of new electrical power generation facilities would be required (see section 3.14).

Water Resources—Less than significant cumulative impacts to water resources would result from the implementation of the Project and other cumulative projects due to the differences in the timing, location, and nature of the impacts associated with the Project and other projects. The Project impacts to water levels and water quality in the Delta would not cumulatively considerable.

6.4.1 Cumulative Impacts in the WRMWSD Service Area by Resource

This section considers the combined environmental impacts in WRMWSD of the Project and other projects discussed above on a resource-by-resource basis. Since the project would only affect water resources in the WRMWD, the Project would not contribute to cumulative impacts in other environmental resource categories.

Water Resources—Less than significant cumulative impacts to water resources would result from the implementation of the Project and other projects in the WRMWSD. As previously discussed in section 3.15, WRMWSD has sufficient supplies to accommodate the demands of its customers without relying on the 41,000 AF of Table A Amount associated with the Project. Under some conditions, the decrease in SWP water supply associated with the Project could result in increased reliance on other water sources and groundwater. However, this would not result in a significant cumulative effect for two reasons: these amounts are small relative to the total amount of water in storage in the Kern County Groundwater Basin and the White Wolf sub-basin; groundwater levels in the portions of these basins underlying the WRMWSD have been generally increasing over time. With regard to water quality, the potential minor increase in the use of water having higher TDS concentrations would result in a less than significant cumulative impact to water quality.

6.4.2 Cumulative Impacts in the CLWA Service Area by Resource

Aesthetics/Visual Resources—Cumulative aesthetics/visual resources impacts may include changes to the visual characteristics and resources of the area through the development of open space and further urbanization of hillside and natural areas. Development would result in substantial adverse effects on scenic vistas, substantially damage scenic resources, or substantially degrade the existing visual character or quality of individual sites and their surroundings. Further, potential development within the CLWA service area would also cumulatively result in an increase in the amount of night lighting and unwanted glare in presently undeveloped areas. Haphazard development would obstruct scenic views of, and from, the project area. These impacts are considered to be significant and unavoidable. Mitigation measures to reduce significant cumulative aesthetic/visual resources impacts are identified in section 4.2 but some significant impacts would be unavoidable.

Agricultural Resources—The amount of land designated for agriculture within the Los Angeles County/Santa Clarita Valley planning area is small (roughly 1 square mile [City of Santa Clarita 1991]), although more land is designated for agricultural purposes in the portion of the CLWA service area in Ventura County. This land is located on the Santa Clara River floodplain, primarily along the Highway 126 corridor. Lands in the County of Ventura would be subject to the limitations of the Save Open-Space and Agricultural Resources (SOAR) regulations. The State of California Farmland Mapping and Monitoring Program has designated approximately 3 percent of the mapped area within the CLWA service area as either prime farmland, unique farmland or farmland of statewide importance. Cumulative impacts to agricultural resources would be significant because there is a potential for these lands to be converted to non-agricultural use or for changes in agricultural zoning to be approved by local jurisdictions in order to allow a higher density or intensity of development, despite local legislation (e.g., see section 3.2.1.3 for a discussion of the SOAR initiative that provides for protection of agricultural resources and controls conversion of agricultural lands in portions of Ventura County). Mitigation measures to reduce these significant cumulative agricultural impacts to less than significant are identified in section 4.2.

Air Quality—Cumulative effects from population, employment, and manufacturing growth would result in increased air pollutant emissions for which the South Coast Air Basin does not currently meet federal or state standards. Toxic emissions could result from some industrial development. Additionally, mobile emissions from vehicle operations would increase, including localized CO concentrations and PM_{10} emissions. Fugitive dust emissions would also result from construction. Cumulative impacts would be significant if development violated air quality standards or contributed substantially to an existing or projected air quality violation. The Project together with other related projects could also result in a cumulatively considerable net increase in certain criteria pollutants for which the region is in non-attainment, and could expose sensitive receptors to substantial pollutant concentrations. Certain types of industrial development would create objectionable odors affecting a substantial number of people if constructed without appropriate mitigation measures. Mitigation measures to reduce significant cumulative air quality impacts are identified in section 4.2, but some significant air quality impacts would be unavoidable.

Biological Resources—The Project would provide water for existing users and a portion of anticipated growth. The associated land development, together with land development from other cumulative projects, would have cumulative impacts on biological resources. Cumulative impacts to threatened and endangered species and other sensitive biological resources within the CLWA service area, including wetlands, generally would be adverse due to the conversion and degradation of habitat. Although increased water use may increase certain types of habitat areas (e.g., through increased untreated runoff), related land development would entail the loss, degradation, or fragmentation of habitats, which may result in local native plant and wildlife populations, including sensitive species, being reduced in size and made increasingly vulnerable to local extinction. Non-native species introduced through ornamental landscaping or habitat disturbances would compete with native species or invade previously disturbed habitats, including those of special status species. Additionally, cumulative development would disrupt established wildlife corridors and impede the use of native wildlife nursery sites. These cumulative impacts would be significant.

Increased wastewater treatment plant discharges, additional runoff from impervious surfaces and new runoff from the irrigation of urban landscaping would increase the amount of wetlands and aquatic habitat below such discharges. However, water quality below these discharges would be degraded from pollutants (both point and non-point sources) carried in these waters. Implementation of Best Management Practices to reduce non-point source pollution and applicable permit requirements for point sources would reduce but not fully mitigate pollution from future development and cumulative projects. This would have a substantial adverse effect on riparian habitat and sensitive fish and amphibian populations, which would be a significant cumulative impact.

Development also could result in conflicts with local policies and ordinances protecting biological resources, which would be a significant cumulative impact. As noted in section 3.4, Biological Resources, however, there are no adopted HCPs or Natural Community Conservation Plans (NCCPs) within the CLWA service area.

Mitigation measures to reduce significant cumulative biological impacts are identified in section 4.2.4, but some significant cumulative impacts may be unavoidable depending on the magnitude and specific location of future development.

Cultural Resources—As discussed in the EIR for the City of Santa Clarita General Plan (City of Santa Clarita 1991), excavation and grading activities associated with future development could result in significant cumulative impacts to archaeological, historical, and paleontological resources. Development also could result in significant cumulative impacts associated with the disturbance of human remains. Significant cumulative impacts on cultural resources may include the following:

- grading of prehistoric archaeological or paleontological sites, thereby demolishing the site and eliminating its ability to yield important information;
- construction of new buildings that could impair the setting of a historic structure or district, thereby altering the structure's or district's ability to embody distinctive characteristics of a type or period; or
- excavation of utility trenches for new developments that uncover human remains or a paleontologic deposit, thereby destroying those remains.

Mitigation measures to reduce significant cumulative cultural resources impacts to less than significant are identified in section 4.2.

Geology, Soils and Minerals—The County of Los Angeles, City of Santa Clarita, and Ventura County general plans all indicate that the CLWA service area contains a number of seismic hazards. Several active faults located in the general project area, such as the San Gabriel, San Andreas, San Fernando, and Sierra Madre faults, could cause structural damage as a result of ground shaking, subsidence, and liquefaction. The San Gabriel fault is also capable of causing structural damage as a result of ground rupture. Depending on the location, new construction within the CLWA service area could expose people or structures to adverse effects, including risk of loss, injury, or death involving rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides. Liquefaction is most likely to occur in areas of the CLWA service area that are saturated at very shallow depths, such as adjacent to the Santa Clara River. Due to the rugged, high relief of the

foothill and mountainous areas surrounding the Santa Clarita Valley, landslides and unstable slopes are present in many areas of the CLWA service area. The cumulative impacts of development are dependent upon the type of construction, proximity to faults, degree of slope, bedrock orientation within slopes, and soil type of individual project sites. Cumulative impacts throughout the CLWA service area would be significant.

There also is a potential for the CLWA service area to contain geologic units or soils that are unstable or that could become unstable as a result of future development projects (i.e., either development served by the Project or other development) and result in on- or off-site landslides, lateral spreading, liquefaction, or collapse. This would be a significant cumulative impact.

As noted in the EIR for the City of Santa Clarita General Plan, new construction could result in localized soil erosion on or adjacent to future development sites, which could result in the loss of topsoil and siltation of downstream drainages, creeks, and the Santa Clara River. This would be a significant cumulative impact.

The County of Los Angeles General Plan, City of Santa Clarita General Plan, and Ventura County General Plan all indicate that the CLWA service area contains expansive soils. If future development were located on such soils, substantial risks to life or property could result. This would be a significant cumulative impact.

Sewers would serve future development in the urbanized portions of the CLWA service area, although the use of septic tanks or alternative wastewater disposal systems may be required in outlying areas. Cumulative impacts would be significant if construction were to occur on soils that were incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

The County of Los Angeles General Plan, City of Santa Clarita General Plan, and Ventura County General Plan all indicate that the CLWA service area contains mineral resources such as gold, oil, and aggregate. The EIR for the City of Santa Clarita General Plan notes that if development encroached on mineral resource areas, the extraction of these resources could be incompatible if development is permitted. To the extent that future development resulted in the loss of availability of a known mineral resource that was of value to the residents of the region and state or 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, cumulative impacts would be significant.

Mitigation measures to reduce significant geological cumulative impacts to less than significant are identified in section 4.2.

Hazards and Hazardous Materials—Operations of past and existing businesses in the CLWA service area may have resulted in soil contamination from spills or disposal of hazardous materials. Therefore, depending on the specific location, new development on previously contaminated sites may require the removal or remediation of soils before property development can commence. New development also may result in increased transport, use, and disposal of hazardous materials, along with increased risks of hazardous substance releases. Certain types of development could impair implementation of or physically interfere

with emergency response plans or emergency evacuation plans, and could result in increased exposure to wildland fires where urbanization is adjacent to such areas. These cumulative impacts would be significant. No airport-related risks would occur because the CLWA service area is not located within an airport land use plan area; nor is it in the vicinity of a public airport, public use airport, or private airstrip. Mitigation measures to reduce significant cumulative hazards and hazardous materials impacts to less than significant are identified in section 4.2.

Land Use and Planning—The potentially accommodated residential, commercial, and industrial development that could occur in the CLWA service area could convert undeveloped or agricultural portions of the service area to some form of urbanized development. While adopted policies and plans of local jurisdictions would reduce most potential conflicts between incompatible uses, these policies and plans may not eliminate building in some sensitive areas such as hillside management areas, open space areas, and sensitive wildlife habitat areas. In addition, as more land within the CLWA service area is developed, there may be more pressure to build in areas that have greater constraints, such as hillside areas, and to convert open space to developed uses. Depending on the location and type of development, there is the potential for new development to physically divide an established community. Without adequate mitigation, there also is a potential for some conflicts with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating an environmental effect. These cumulative land use impacts would be considered to be significant. No HCPs or NCCPs have been adopted within the CLWA service area. Mitigation measures to reduce significant land use and planning cumulative impacts to less than significant are identified in section 4.2.

Noise—Development would result in an increase in ambient noise levels due to the potential increase in associated traffic. Long-term increases in noise levels also could be associated with commercial and industrial development. Residential areas and other sensitive receptors near transportation corridors and other noise generators may experience increased noise. Development also would result in short-term increases in local noise levels from construction and grading activities. Cumulative impacts would be significant if noise levels exceed local standards or if a substantial temporary or permanent increase in noise occurred. Cumulative impacts would also be significant if development resulted in exposure of persons to excessive groundborne noise or vibration. Mitigation measures to reduce significant cumulative noise impacts to less than significant are identified in section 4.2.

Population and Housing—As discussed in section 4.1, the Project would be able to serve a population of between approximately 28,500 and 106,600 persons, based on assumptions regarding the availability of SWP water supply.

Depending on the planning assumptions outlined above, the Project could serve between 9,510 and 35,600 additional housing units. Impacts would be cumulatively significant because the Project, together with other projects, could cumulatively induce substantial population growth in the CLWA service area. The Project would not cumulatively displace substantial numbers of existing houses or substantial numbers of people. Mitigation measures to reduce significant cumulative population and housing impacts to less than significant are identified in section 4.2.

Public Services—Growth in the CLWA service area could result in cumulative impacts to the following public services:

Police—Increased demand for services from the Los Angeles County Sheriff's Department (which also contracts with the City of Santa Clarita to provide services), the Ventura County Sheriff's Department, and the California Highway Patrol would occur. This would include additional staffing, facilities, and equipment, and could affect response times to handle calls for service. Any special problems posed by new development (e.g., roadway access or terrain) would be considered at the time the development is reviewed. Impacts could be cumulatively significant because the new development could require new or physically altered governmental facilities, the construction of which could cause significant cumulative environmental impacts.

Fire—Increased demand for services from the Los Angeles County and Ventura County fire departments and from private providers of emergency response/paramedic services, including additional staffing, facilities, and equipment would occur and could affect response times to handle calls for service. Any special problems posed by new developments (e.g., roadway access or terrain) would be considered at the time the development is reviewed. Additional considerations such as the location of a proposed new development in moderate or high fire hazard zones, the adequacy of water supplies/fire flows, and types of vegetative cover would be taken into account. In addition, state and county fire codes, standards, and guidelines exist to which all developments must adhere. Impacts could be cumulatively significant, because the new development could require new or physically altered governmental facilities, the construction of which could cause significant cumulative environmental impacts.

Schools—Growth would generate increased enrollments and the need for additional staffing, facilities, and resources in some or all of the school districts in the CLWA service area. All school districts in the service area report that they are either at capacity or are experiencing overcrowding, and temporary facilities are being used in every district. Additional enrollments would be considered at the time new development is reviewed and would include input from affected school districts. Impacts would be cumulatively significant based on current capacity limitations because additional schools would likely have to be built, which could cause significant cumulative environmental impacts.

Libraries—Growth would generate increased demand for library services and associated need for staffing, facilities, and resources (books, magazines, periodicals, etc.) in some or all of the libraries in the CLWA service area. Library services provided by the County of Los Angeles Library Department are currently below planning standards, based on the per capita planning standard for the Santa Clarita Valley. Additional demands, including cumulative demands for square feet of library space and related resources would be considered at the time new development is reviewed. Impacts on libraries would be cumulatively significant based on current shortages, because additional libraries would likely have to be built, which could cause significant cumulative environmental impacts.

Mitigation measures to reduce significant cumulative public services impacts to less than significant are identified in section 4.2.

Recreation—Significant cumulative recreational impacts would result from increased demand for recreational resources, such as public parks and trails and other recreation areas. This

demand would exacerbate existing shortfalls in local parkland and may outpace the ability of public agencies to provide these resources. Mitigation measures to reduce significant recreational cumulative impacts to less than significant are identified in section 4.2.

Transportation and Circulation—Growth in the CLWA service area would result in the following cumulative impacts:

- Daily trips in the CLWA service area would potentially increase over current levels.
- There would be a related need for new private or public roadways, parking facilities, and for subsequent road maintenance.
- Increased demand for transit systems could occur, and there may be an alteration of present patterns of circulation.
- Roadways with existing capacity constraints could require upgrading or may experience further deterioration in levels of service.

The EIR for the City of Santa Clarita General Plan identified significant, potentially unmitigable impacts at certain isolated road segments from growth allowed under the General Plan. The segments most likely to be significantly affected are Bouquet Canyon Road near Haskell Canyon Road, McBean Parkway north of State Route 126, Soledad Canyon Road between Sierra Highway and Whites Canyon Road, Rye Canyon Road east of Interstate 5, and San Fernando Road between Newhall Avenue and State Route 14. In general, growth-related cumulative impacts would be significant because they could cause an increase in traffic that is substantial in relation to the existing load and capacity of the street system and could cause an exceedance of an established level of service standard. Specific developments could substantially increase hazards due to a design feature, or result in inadequate emergency access or parking capacity. Development also could conflict with adopted plans and policies or programs supporting alternative transportation. Cumulatively, air traffic is projected to increase throughout the southern California region, and new or expanded airports are being evaluated. Planning efforts for these projects would be required to demonstrate that the new locations/expansions do not result in substantial safety risks. Mitigation measures to reduce a portion of the cumulative significant transportation and circulation impacts are identified in section 4.2, but significant cumulative impacts to transportation and circulation would be unavoidable.

Utilities/Service Systems—The following impacts were identified for utilities/service systems:

Solid Waste—Cumulative growth would generate increased demand for solid waste disposal services due to construction-related and operational impacts of new land development. Los Angeles County and Ventura County operate several landfills that serve the CLWA service area. The location and volume of waste generation, including cumulative demands, provision of recycling programs, and existing landfill capacity and expansion plans, would be considered at the time new development is reviewed. Impacts are considered cumulatively significant because an adequate supply of landfill space has not been ensured for the future and would remain so unless additional landfill space or other disposal alternatives are approved. No feasible mitigation measure has been identified.

Raw Water Treatment—The indirect impacts of the Project, together with cumulative growth from other projects, would increase the demand for potable water and consequently increase

the demand for water treatment facilities. Impacts would be significant due to significant environmental impacts of expanding the two existing treatment facilities: the present expansion of the Earl Schmidt Filtration Plant and, based on a preliminary environmental analysis prior to project-specific CEQA analysis, the future expansion of the Rio Vista Water Treatment Plant (a discussion of the potential impacts of these two projects is provided in section 6.2.3.6).

Wastewater—Cumulative growth would increase wastewater generation and demand for wastewater treatment primarily at facilities operated by the County Sanitation Districts (District No. 26 and District No. 32) of Los Angeles County in Los Angeles County, which service the Santa Clarita Valley. These two districts jointly operate a regional system known as the Santa Clarita Valley Joint Sewerage System (SCVJSS) for which the 2015 Joint Sewerage System Facilities System Plan has been completed (LACSD 1998). The SCVJSS has a current combined capacity of 19.1 mgd and plans to expand capacity to 28.1 mgd by 2004, with further expansion to the practical site capacity of 34.1 mgd by 2020. The ultimate expansion is intended to serve a population of 321,000. Cumulative impacts to wastewater treatment capacity would be less than significant based on an adopted facility plan being in place to accommodate growth through 2020.

Storm Water Drainage—New construction and development would likely require the construction of new storm water drainage facilities or the expansion of existing facilities, which could cause significant cumulative environmental impacts.

Mitigation measures to reduce significant utilities/service systems cumulative impacts to less than significant are identified in section 4.2.14. Cumulative impacts to solid waste disposal, however, may not be avoidable unless additional landfill capacity is approved and constructed.

Water Resources—As local purveyors become increasingly dependent on SWP supplies, which are variable and may be reduced during dry years, local groundwater resources may be required to support a larger portion of the total demand from future development during periods of reduced SWP supplies. Should it occur, this short-term demand for groundwater resources would be considered a significant cumulative impact because it could result in the substantial depletion of groundwater supplies on a short-term basis in dry hydrologic years. It is noted, however, that on an average basis, over time, the annual amount of local groundwater pumping to meet urban and agricultural demand in the Santa Clarita Valley will not appreciably change, but its fraction of total water supply will decrease.

Increased municipal and industrial use of water would increase the amount of water treated at the existing and planned raw and wastewater treatment plants. This would result in additional discharges from the wastewater treatment plants and increased flows in the portion of the Santa Clara River west of Interstate Highway 5. However, in the future, some of the water presently being discharged into the Santa Clara River could be diverted prior to discharge for landscape irrigation and other permitted uses of reclaimed water within the CLWA service area. Impacts would be cumulatively significant.

Future development could result in an increase in the total amount of salts (including chlorides) in water delivered to the CLWA service area due to the increased volume of water (depending on the quality of raw water). Water quality of SWP deliveries infrequently approaches or exceeds water quality standards. Future development would cause an increase in effluent

volume from wastewater treatment plants in the CLWA service area. Given the recent implementation of the "Ordinance Prohibiting Installation of Certain Water Softening Appliances" (refer to section 3.15), however, it is reasonable to expect that new development would have better effluent quality than existing development and would result in similar effluent quantity per residence. This would ultimately result in no detectable change in the chloride concentrations discharged from the water treatment plants. The potential change in chloride concentrations is a less than significant cumulative impact.

Future development within the CLWA service area could increase the amount of impervious surface (roads, buildings, other paved areas). This could reduce percolation of rainwater to groundwater, alter surface flows, and increase the amount and rate of stormwater runoff through storm sewers or other engineered drainages. Growth-related development could affect water quality from non-point source discharges. The increase in impervious surface could also affect the peak flow rates of floodwaters and could increase flooding on or off-site of future development. Increased flooding and peak flow rates could result in substantial erosion or siltation on or off site. Cumulative water quality impacts could be significant.

New development in floodplains could expose additional persons and property to flood hazards and could impede or redirect flood flows. Development, in particular the placement of impervious surfaces, in areas critical to the recharge of the Alluvial and Saugus aquifers could reduce the rate of aquifer recharge. This effect would not alter the storage capabilities of these aquifers; however, it could, under certain circumstances, reduce aquifer recharge. These would be considered significant cumulative impacts.

Seiches (creation of large waves on a lake or reservoir) could occur as a result of earthquake-induced ground shaking or landslides in Castaic Lake, Pyramid Lake, or Bouquet Reservoir, potentially resulting in flooding of downstream communities. Since the Project would not substantially change lake levels or other reservoir characteristics that could affect seiche frequency or height, no cumulative impact to seiches would occur. Mudflows could also occur as a result of new development, particularly in mountainous areas. This would be considered significant cumulative indirect impacts.

Mitigation measures to reduce significant cumulative water resources impacts to less than significant are identified in section 4.2.

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7.0 ALTERNATIVES TO THE PROJECT

7.1 ALTERNATIVES EVALUATION PROCESS

This section analyzes alternatives to the Project. CEQA Guidelines (Section 15126) require that an EIR describe a reasonable range of feasible alternatives to the project or project location that could feasibly attain most of the basic project objectives and would avoid or substantially lessen one or more of the significant environmental impacts of the Project. Project alternatives must be feasible based on specific economic, social, legal, and technical considerations. The EIR must explain the rationale for selecting the alternatives to be discussed, identify those that were not carried forward because they were infeasible, and briefly explain why they were not carried forward. The range of alternatives required in an EIR is governed by a "rule of reason," which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. Additionally, the No Project Alternative must be analyzed. If there is an "environmentally superior" alternative to the Project, it must be identified. If the environmentally superior alternative is the No Project Alternative, the EIR must identify an additional "environmentally superior" choice among the other project alternatives. Section 7.2 discusses the alternatives that were considered but eliminated from detailed consideration. Section 7.3 evaluates the impacts of those alternatives carried forward for detailed consideration, and section 7.4 identifies the environmentally superior alternative.

For purposes of this analysis, the long-term average amount of water available from the Project's 41,000 AFY Table A Amount is established as 34,400 AFY, based on modeling assumptions regarding the reliability of SWP Table A deliveries. As discussed in detail in section 3.15 and Appendix D, the annual allocations of SWP water made by DWR are based on that year's hydrologic conditions, the amount of water in storage in the SWP system, and Contractors' requests for SWP supplies. Thus, the transfer of 41,000 AFY of Table A Amount would not result in the availability of this amount of water under most hydrologic conditions. The use of the average water supply is considered a reasonable scenario for purposes of the alternatives analysis because it represents the most typical condition that would occur during a given year.

7.2 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

7.2.1 Alternative Imported Water Sources

A variety of alternative imported water sources were considered. These include sources other than the SWP, such as water from the central valley of California (CVP), transfers from other water rights holders in the Sacramento Valley, and water from other water supply systems (Los Angeles Department of Water and Power [LA DWP]). In addition, alternative imported water sources from SWP Contractors other than KCWA were considered.

The use of water from the CVP and other water rights holders in the Sacramento Valley was not carried forward for a number of reasons. This water would be transported to CLWA via SWP facilities, and as non-SWP water, its transmission by these facilities would have a low priority. Therefore, the water supply would be less reliable than that of the Project, which would not meet Project objectives. Additionally, the permanent conveyance of this water through the Delta could result in economic and social impacts associated with transferring water from

agricultural use to urban use. Water transfers from CVP Contractors also would not be feasible because their water already has been allocated for other uses, including environmental restoration projects, and is not available for long-term, reliable sale or exchange.

Similarly, LA DWP does not have excess water available for transfer; thus, use of water from this source is infeasible at this time. Exchanges or acquisition of SWP Table A Amount with other SWP Contractors are considered feasible, but the environmental consequences of such transfers would be similar to those of the Project and would not reduce or avoid any Project impacts. The use of any of these alternative water sources would not change the environmental impacts that would occur in the CLWA service area from treatment and use of the water, which are the primary impacts of the Project.

7.2.2 Increased Conservation/Recycling

This alternative involves implementing an aggressive water conservation/recycling program that would conserve or reuse an average of 34,400 AFY in the CLWA service area that is over and above what is currently projected in the UWMP (CLWA 2000). Replacement of the new water supply would require an additional 35 percent savings. Recycled water can only be used for limited purposes (irrigation or other non-potable uses) depending on the degree of treatment; thus, recycled water would be able to replace only a portion of the 34,400 AFY, and conservation would be required to provide potable water.

This alternative was rejected for several reasons.

- The amount of conservation that would be required under this alternative is not anticipated to be achievable and sustainable. Therefore, it is judged to be technically infeasible. A number of water conservation measures already are in place in the CLWA service area, and CLWA has adopted a water conservation goal of further reducing water demand by 7,700 AF in 2010 and 10,600 in 2020, or about 10 percent of demand (CLWA 2000). As discussed in section 3.15, CLWA is a member of the CUWCC and has pledged to implement all cost-effective BMPs for water conservation in order to achieve these goals. It is unlikely that the amount of additional conservation that would be required under this alternative could be implemented in a timely manner, if at all, particularly since such levels of conservation have not been demonstrated in the Project area and other areas of the State to be sustainable over long periods of time.

- The Saugus and Valencia water reclamation plants reclamation plants have the existing or planned capacity to meet the projected 2020 demand for recycled water (CLWA 2000). Since the use of recycled water is limited to landscaping and other non-potable uses, it may not be feasible to increase recycling beyond that which is currently planned for. Additionally, the cost of recycled water is currently greater than that of additional SWP water. Recycled water currently costs approximately $818 per AF (personal communication, L. Takaichi 2003), as opposed to Project water, which would cost approximately $250 per AF.

- This alternative would not reduce or avoid significant indirect impacts of the Project occurring in the CLWA service area.

7.2.3 Transporting Desalinated Seawater from Ventura County to CLWA

Two options for obtaining an average of 34,400 AFY of water from a new seawater desalination facility in Ventura County were considered. An alternative that included CLWA's contributing to the development of a desalination facility in exchange for delivery of SWP water was carried forward for analysis in this EIR (see section 7.3.3).

The alternative that was eliminated would have resulted in the direct transfer of water from the desalination facility to the CLWA service area and would have required the construction of a pipeline approximately 50 miles in length to transport the water. This alternative was eliminated because it would create greater environmental impacts than the other desalination alternative due to pipeline construction. These include impacts or potential impacts to resources such as air quality, biology, and cultural resources. Additionally, it would result in the same impacts to the CLWA service area as the Project and thus would not reduce or avoid Project impacts.

7.2.4 Upgrading the CLWA Water Treatment Plants

This alternative would involve implementation of the Project along with upgrades to the CLWA water treatment plants to reduce chlorides. These upgrades would require construction of a brine disposal line from CLWA's treatment plants to the coast, resulting in environmental impacts from ground disturbance and impacts to marine resources from off-shore disposal of the brine. This alternative would create greater environmental impacts than the Project due to construction of the brine disposal line (e.g., to air quality, biological resources, and cultural resources). Additionally, LACSD recently has adopted an ordinance that prohibits the installation and use of new self-regenerating water softeners in the Santa Clarita Valley, which would reduce the amount of chloride load in the watershed, and it is considering the feasibility and cost of various measures that would reduce discharge of chlorides at its Santa Clarita Valley water reclamation plants (LACSD 2002b). These measures would be more effective than upgrades at CLWA water treatment plants because LACSD facilities treat both imported SWP water and local groundwater, whereas CLWA facilities only treat SWP water. Therefore, any action by CLWA would result in chloride reductions in only approximately 50 percent of the volume of water that could be treated by LACSD. This alternative also would result in the same impacts to the CLWA service area as the Project.

This alternative was rejected because it would result in greater environmental impacts than the Project, would be less effective in treating water than other methods that have been implemented or are in the planning stages, and would not reduce or avoid significant impacts of the Project in the CLWA service area.

7.3 ALTERNATIVES CARRIED FORWARD FOR DETAILED ANALYSIS

Five alternatives were carried forward for detailed analysis.

7.3.1 Alternative 1, No Project Alternative

Under the No Project Alternative, CLWA would not acquire the additional Table A Amount or acquire the associated contractual rights for delivery of water associated with the transfer. The demand for high quality surface water is expected to increase throughout all of southern

California as a result of continued growth, and local planning agency documents project continuing growth in the CLWA service area. The contract right to the Table A Amount that is the subject of the Project could be acquired and transferred to other portions of urbanized California. The amount, timing, and location of such a transfer are highly speculative, however, and this scenario is not considered further. Two hypothetical scenarios have been carried forward for detailed analysis that are intended to define a reasonable range of possible actions that could occur under this alternative. Future land development is not under the control of CLWA and depending upon the actions of agencies with land use planning and permitting authority the possible actions could vary.

The discussion provided below under the Moratorium Scenario and the Build-Out Scenario includes projects in the County of Los Angeles Development Monitoring System (DMS) which includes: pending projects (not yet approved); approved projects (subdivisions that have been granted an approved tentative tract map that is not yet recorded or expired); and recorded projects (subdivisions that have recorded a final tract map but are not yet built).

Scenario 1 –Moratorium on New Development, Existing Users Subject to Delivery Cutbacks (Moratorium Scenario)

Under the Moratorium Scenario, a moratorium on new development would be implemented. This assumes that the local retail water purveyors[1] within the CLWA service area decide that there is insufficient water to issue "will serve" letters to supply development and that local land use agencies respond by imposing a moratorium on new development in the CLWA service area.

The 1998 DMS included 15,973 housing units (8,588 approved, 2,292 recorded, and 5,093 pending). The 2002 DMS included 33,113 housing units (13,586 approved, 9,915 recorded, and 9,612 pending). These housing units would not be built under this scenario. Assuming three persons per household, this amount of development would result in a population of approximately 49,510 persons, using the 1998 DMS, and 99,339 persons, using the 2002 DMS.

As noted in section 1.1, the Project (Transfer of Table A Amount) serves existing demand (users) (it also is intended to serve a portion of future demand). Under the No Project Alternative, some additional groundwater production wells might be required to serve existing demand that would have been met by the Table A Amount transfer. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

Environmental impacts of this scenario to individual resources are described below. It also could result in considerable economic and social impacts to residential, commercial, industrial, and public/governmental users in the CLWA service area if water deliveries were cut back or rationing occurred. Reduced deliveries could affect the ability of public and private property owners to water lawns, parks, golf courses, landscaping, and open space areas and could result in these areas dying off with resulting economic loss. Businesses that use high volumes of water may be forced to cutback production or close. A moratorium on new development

1 The CLWA Act refers to "retail water distributors," although the term "retail water purveyors" also is commonly used. For purposes of this report, the terms are synonymous.

would result in a delay or failure to meet County of Los Angeles and City of Santa Clarita General Plan population, housing, and job projections for which local governments have planned and/or constructed infrastructure and expended funds. A moratorium on new development would have potential economic consequences related to increased costs of housing in an already expensive southern California housing market, and developers with approved or recorded and unbuilt projects may experience economic loss if projects are delayed or cannot be completed. In addition, businesses considering relocating or expanding in the CLWA service area may be reluctant to invest capital because of uncertainties related to water supplies, lack of affordable housing for employees and stagnant local markets for goods and services. Alternative locations for siting or expanding businesses outside the service area would become more attractive. This could in some cases result in increased commuting, resulting in greater traffic, air emissions and energy use.

Scenario 2 – Build-Out of Recorded and Approved Projects in DMS (Build-Out Scenario)

Under the Build-Out Scenario, approved and recorded projects listed in the DMS for the Santa Clarita Valley would be developed, notwithstanding the potential shortfall in reliable water supply. Based on the DMS from both 1998 and 2002, the number of housing units in approved and recorded DMS projects considered under this scenario (10,880 and 23,500 units, respectively) is less than the number of housing units that could be supported by the Project given an average year water supply of 34,400 AF (35,600 units). The population associated with the development identified in the 1998 DMS would be 32,640 persons; the population associated with the 2002 DMS development would be 70,500 persons. In comparison, the population that could be served by the Project would be 106,700 persons.

Under this scenario, existing demand currently met by the Table A Amount transfer and the increased water demand from new development would rely on existing water supplies (principally local groundwater resources) that are currently not used for urban purposes. Treatment at the wellhead likely would be needed, depending upon local groundwater characteristics. New underground distribution pipelines also may be required. Electric pumps would be used as needed.

Impacts

Aesthetic/Visual Resources — Under the Moratorium Scenario, impacts on aesthetic/visual resources from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant, unavoidable impacts on aesthetic/visual resources from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects.

Under both scenarios, new groundwater production wells and treatment facilities could be constructed, which could result in significant aesthetic impacts if they were located in proximity to visually sensitive resources. Construction of distribution pipelines would cause temporary impacts, but the pipelines would be underground and it is assumed that the corridor would be restored to its prior condition once the pipeline was laid. This impact would be less than significant. This impact would not occur if the Project were implemented.

Agricultural Resources — Under the Moratorium Scenario, impacts on agricultural resources from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on agricultural resources from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Under this scenario, however, agricultural water users in the CLWA service area may have to compete for water with urban users, which could adversely affect irrigated agriculture, particularly during periods of drought. This impact would be significant if it resulted in the conversion of a substantial amount of agricultural land to non-agricultural use. If new groundwater production wells, treatment facilities, and distribution pipelines were located on Important Farmland, impacts would be less than significant, because their construction would not involve the loss of a substantial amount of farmland. These impacts would not occur if the Project were implemented.

Air Quality — Under the Moratorium Scenario, short-term and long-term impacts on air quality from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant, unavoidable impacts on air quality from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Construction of new groundwater production wells, treatment facilities, and distribution pipelines would generate combustive and fugitive dust emissions. Depending on the mix of equipment used, construction activities could exceed the AQMD's daily significance thresholds, which would be a significant impact. This impact would not occur if the Project were implemented.

Biological Resources — Under the Moratorium Scenario, impacts on biological resources from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant, unavoidable impacts on biological resources from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Additionally, increased use of groundwater resources under the Build-Out Scenario would likely decrease the amount and longevity of habitats that are dependent on groundwater seeps (i.e., springs and other areas where groundwater surfaces). This would potentially result in significant impacts to biological resources that are dependent on wetlands, springs, and aquatic habitats, including the protected species that use these habitats. This impact would be greater than would occur under the Project and could be significant. Depending on the location of individual sites, construction of the groundwater production wells, treatment facilities, and distribution pipelines could impact sensitive biological resources, including special status species. Locating distribution facilities along rights-of-way would reduce the potential for impacts to biological resources, but in the absence of specific sites, it is assumed that impacts from the construction and operation of all new facilities could be significant. This impact would not occur if the Project were implemented.

Cultural Resources — Under the Moratorium Scenario, short-term and long-term impacts on cultural resources from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on cultural resources from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Depending on the location of individual sites, construction of the groundwater production wells, treatment facilities, and distribution pipelines could have a significant impact on cultural resources. This impact would not occur if the Project were implemented.

Geology, Soils, and Mineral Resources — Under the Moratorium Scenario, impacts on geology, soils, and minerals from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on geology, soils, and minerals from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. The construction of new groundwater production wells, treatment facilities, and distribution pipelines could cause short-term soil erosion, which could be a significant impact that could be mitigated by implementing BMPs. This impact would not occur if the Project were implemented.

Increased groundwater pumping could potentially result in land subsidence under both scenarios. There has been no recorded historical inelastic (irreversible) subsidence, or indirect evidence of its occurrence (i.e., subsidence-related impacts on surface structures, drainage facilities, etc.), attributable to groundwater pumping in the Santa Clarita Valley. The most recent comprehensive review of historical groundwater conditions in the basin (Slade 2002) describes how temporary fluctuations in groundwater storage have occurred in response to natural variations in recharge and changes in groundwater discharge such as pumping, but how such fluctuations (only notable in the eastern portion of the basin) have only been temporary and have fully recovered in response to wet period rainfall and associated recharge. Slade (2002), however, identifies subsidence as a potential undesirable result of exceeding the perennial yield of the groundwater basin. In order for subsidence to occur, there would need to be a "continued and progressive decline in groundwater levels leading to a permanent loss of groundwater in storage." Such conditions could occur under this alternative, which would result in a significant and unavoidable impact.

Hazards and Hazardous Materials – Under the Moratorium Scenario, impacts on hazards and hazardous materials from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on hazards and hazardous materials from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Hazardous materials would be used during the construction of groundwater production wells and associated facilities as well as during groundwater treatment. Any use of hazardous materials for these activities would be conducted in accordance with existing policies, procedures, and regulations to prevent upset or release into the environment. Thus, impacts from the incremental increase

in use of hazardous materials during construction and to treat water would be less than significant. The Project would require the use of hazardous materials to treat the transferred water, but would not require new construction. Thus, impacts would be incrementally greater under this scenario than under the Project.

Land Use and Planning — Under the Moratorium Scenario, impacts on land use and planning from development would not occur in the CLWA service area; thus, the significant growth-related impacts of the Project would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on land use and planning from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. The siting of groundwater production wells and associated facilities would take local land use planning requirements into consideration, although there is a potential for conflicts with adopted policies intended to protect the environment to occur. Impacts could be significant. This impact would not occur if the Project were implemented.

Noise — Under the Moratorium Scenario, impacts on noise from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on noise from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Noise would result from the construction of new groundwater production wells and associated facilities and the operation of pumps. Impacts could be significant if sensitive receptors were located nearby. This impact would not occur if the Project were implemented.

Population and Housing — Under the Moratorium Scenario, a moratorium would be imposed on new development; thus, the future population of the Santa Clarita Valley and associated housing units would be less than could occur under the Project.

Under the Build-Out Scenario, population and housing growth in the Santa Clarita Valley would be less than could occur under the Project since it would be limited to approved and recorded DMS units.

Public Services — Under the Moratorium Scenario, impacts on public services from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on public services from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. The construction and operation of groundwater production wells would not affect public services. This impact would be comparable to that of the Project.

Recreation — Under the Moratorium Scenario, impacts on recreation from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on recreation from development could occur (e.g., from increased use of facilities), but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. The construction and operation of groundwater production wells would not result in physical changes to recreational facilities or lead to the construction of new facilities. This impact would be comparable to that of the Project.

Transportation and Circulation — Under the Moratorium Scenario, impacts on noise from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on noise from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. The construction of groundwater production wells and treatment facilities would generate minor amounts of traffic, which would not cause significant impacts. Construction of pipelines could result in temporary lane closures or other short-term traffic disruptions, but this would be less significant because standard procedures would have to be followed to allow safe access through the construction area. Long-term maintenance would generate minimal amounts of traffic. These impacts would not occur if the Project were implemented.

Utilities/Service Systems — Under the Moratorium Scenario, impacts on utilities/service systems from development would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere.

Under the Build-Out Scenario, significant impacts on utilities/service systems from development could occur, but the indirect impacts of the Project would be reduced because development would be limited to recorded and approved DMS projects. Increased operation of groundwater pumps and treatment facilities would require the consumption of additional electricity, but this would not require the construction or expansion of electrical power facilities. This impact would be less than significant and less than the impact associated with the Project.

Water Resources — Under the Moratorium Scenario, a moratorium would be imposed on new development in order to meet water demands of existing development. Thus, certain significant indirect impacts on water resources, such as water quality impacts and impacts from increased runoff would not occur in the CLWA service area, although they could occur in another area if projected growth were re-located elsewhere. Other impacts in the CLWA service area would be greater. For example, water supplies and delivery dependability within the CLWA service area would decrease compared to the Project. Since a portion of existing demand is served by the 41,000 AF transfer, this scenario would result in a greater dependence upon local groundwater and recycled water to meet the needs of the current population. Groundwater resources would likely be stressed, especially during periods of extended drought, and deliveries may be limited or reduced depending on demand. Mandatory

conservation measures would be required during periods of drought. Groundwater basin adjudication legal proceedings also could occur. Individual landowners may assert their rights to groundwater resources beneath their land and drill new groundwater production wells; however, they would not be able to receive development rights based on that water supply. Impacts to groundwater would be greater under the Moratorium Scenario than under the Project and would be significant and unavoidable if the substantial depletion of groundwater supplies occurred. Additionally, if groundwater production wells were improperly sited, there would be the potential for perchlorate contamination plumes to spread, which could cause a significant water quality impact. These impacts would not occur under the Project.

Under the Build-Out Scenario, allowed development would depend more heavily upon groundwater resources within the CLWA service area than under the Project and the Moratorium Scenario. Groundwater resources likely would be stressed, and local water purveyors may require mandatory conservation measures more frequently than under the Moratorium Scenario, especially during periods of extended drought when SWP deliveries would be reduced. Impacts to local water resources would be significant and unavoidable if the substantial depletion of groundwater supplies occurred. Additionally, if groundwater production wells were improperly sited, there would be the potential for perchlorate contamination plumes to spread, which could cause a significant water quality impact. These impacts would not occur under the Project.

7.3.2 Alternative 2, Increased Extractions from the Saugus Formation (Increased Groundwater Extractions)

Under this alternative, in lieu of the Project, an average of 34,400 AFY would be extracted from the Saugus Formation and delivered to users in the CLWA service area in lieu of the water anticipated from the transfer of SWP Table A Amount. This amount would be above what is currently extracted or planned for extraction. The extraction would be accomplished by increased use of existing wells and by the installation of 15 additional wells, pumps, and wellhead treatment facilities. Existing or new distribution facilities such as pipelines and pumping stations would be used to transport this water to existing and planned treated water distribution facilities. Pumps and treatment facilities would use electrical power. Wherever possible, distribution facilities would be placed in public rights-of-way, including streets, utility, and railroad corridors. Disturbed areas would be restored to their former appearance once construction was completed. It is estimated that approximately 40 acres would be disturbed by the new facilities, which would be constructed and operated either by CLWA, individual purveyors, or other parties. A detailed geohydrologic investigation would be necessary prior to drilling on a site-by-site basis.

Until contaminant remediation is completed, existing, localized perchlorate contamination in a small part of the Saugus Formation would limit potential well locations. Field studies and groundwater modeling activities are in progress to evaluate how best to hydraulically contain the portion of the aquifer system where production wells have been shut down, while simultaneously preventing perchlorate movement to currently unimpacted areas. The field studies have included the installation and sampling of monitoring wells at multiple depths and locations on and around the Whittaker-Bermite site, the most likely source of perchlorate; water level monitoring in these wells; aquifer testing of two unimpacted water supply wells; and groundwater velocity testing in alluvial monitoring wells located between the site and the

Santa Clara River. These studies have helped the water purveyors and the Whittaker Corporation further refine the current understanding of groundwater flow patterns in specific areas on and near the site (such as along the Holser Fault). This information has been incorporated into a regional groundwater flow model that has been developed by the purveyors and whose calibration and construction was recently reviewed and approved by the California Department of Toxic Substances Control (DTSC). The model is being used to identify a pumping scheme that would meet the objectives of restoring the lost water supply from the impacted wells (with wellhead treatment) while simultaneously containing perchlorate and hydraulically limiting its movement downgradient to unimpacted wells and other portions of the aquifer system where new water supply wells might be constructed. The modeling analysis accounts not only for the pumping of impacted wells, but also (a) the 2000 Urban Water Management Plan's (UWMP) pumping plan for unimpacted wells throughout the Santa Clarita Valley and (b) the significant year-to-year variation in local hydrology (especially groundwater recharge) that occurs in the Valley (CH2MHill 2004). The modeling simulations will be used to guide selection of a final pumping plan for the impacted Alluvial Aquifer well and the impacted Saugus Formation wells. The selection of a final pumping plan will be made jointly by the purveyors and the Whittaker Corporation, with regulatory oversight and permitting performed by the California Department of Health Services (CA DHS) with technical support from the DTSC.

There are numerous wells in the Saugus Formation, other than the wells that were voluntarily shut down due to perchlorate contamination. Additionally, other Saugus wells are planned for construction, including those included in CLWA's Capital Improvements Program. If operated continuously during the year, the wells not subject to perchlorate contamination have the capability to produce approximately 21,000 AFY (personal communication, L. Takaichi 2004). However, a more realistic production capability is 15,000 AFY due to periodic shutdown for maintenance, monitoring, or storage limitations (personal communication, L. Takaichi 2004). The current groundwater production capability from the Saugus Formation is estimated to be 5,000 AFY during normal years but could reach 15,000 AFY during dry periods or other periods of need (personal communication, L. Takaichi 2004). These capabilities will increase as additional production wells in the Saugus Formation are completed and a response action to perchlorate contamination is implemented.

Impacts

Growth inducement and growth-related impacts within the CLWA service area would be as described for the Project. This alternative, therefore, would not reduce or avoid the significant indirect impacts of the Project in the CLWA service area. Direct impacts of this alternative are described below and compared to those of the Project.

Aesthetic/Visual Resources – Depending on the location of specific sites, production wells and treatment facilities could be visible from sensitive viewpoints and could substantially degrade the character of the area or affect a scenic vista. This impact would be significant but would be mitigable to less than significant by siting these facilities to avoid sensitive viewpoints where feasible, and where it is necessary to place them in visually sensitive areas, to screen them from view. The distribution pipelines would be located below ground, generally in already disturbed rights-of-way; and pipeline corridors would be restored once construction was completed; therefore, no long-term impacts to aesthetic/visual resources would result from

pipeline construction. Because no new facilities would be constructed as part of the Project, impacts of Alternative 2 to aesthetic/visual resources would be greater than under the Project.

Agricultural Resources — If new facilities were constructed on Important Farmland, it would result in the conversion of a small amount of this land to non-agricultural use. As noted above, however, distribution facilities would be placed in public rights-of-way to the extent possible, which would reduce the potential for this impact to occur. This impact would be less than significant because a substantial amount of Important Farmland would not be affected by this alternative. Increased groundwater extraction under this alternative would reduce groundwater levels in the CLWA service area, which could result in increased pumping costs and affect agricultural economics. In addition, it is possible that groundwater currently used for agricultural purposes could be used for urban purposes instead of to meet the increased demand, which could adversely affect irrigated agriculture. Impacts from increased groundwater cost and decreased availability would be significant since they could result in the substantial loss of agricultural productivity. No feasible mitigation measures have been identified for this impact. The Project would not directly affect agricultural resources; therefore, impacts would be greater under this alternative.

Air Quality — Since the pumps and treatment facilities would be powered by electricity, no long-term increases in air emissions would occur. Approximately 24 million kWh per year would be required to operate the wells, which would be considerably less than the power required to operate SWP pumps under the Project (approximately 140 million kWh per year). Thus, air emissions from facilities that generate electricity would be less than would occur under the Project. Short-term combustive and fugitive dust emissions would result from construction of required wells and distribution facilities. Depending on the mix of equipment used, construction activities could exceed the AQMD's daily significance thresholds, which would be a significant impact. Short-term impacts of this alternative would be mitigable to less than significant by implementing standard operating practices to ensure that fugitive dust (PM_{10}) emissions are minimized (e.g., applying water to areas where vehicles and equipment operate on bare soil and cover inactive soil stockpiles or treat them with soil binders, such as crusting agents or water them to keep moist) and implementing measures to reduce peak daily NO_x emission impacts (e.g., using alternative diesel fuels, such as diesel emulsions or biodiesels, extending the duration of the construction period to reduce daily equipment usage, and maximizing the use of diesel-powered construction equipment manufactured after year 1995). No construction impacts would be associated with the Project; therefore, air quality impacts would be greater under this alternative.

Biological Resources — Depending on the location of individual sites, construction of the groundwater production wells and distribution facilities could either temporarily or permanently impact sensitive biological resources, including special status species present in the Santa Clarita Valley. Locating distribution facilities along rights-of-way would reduce the potential for impacts to biological resources, but in the absence of specific sites, it is assumed that impacts from the construction and operation of new facilities could be significant. Impacts would be mitigable to less than significant by surveying sites prior to construction to determine whether sensitive biological resources are present and taking appropriate measures to avoid or reduce impacts if they are present. Depending on the resources present, measures could include relocating the facilities to sites that do not contain sensitive resources or avoiding construction during the breeding season of sensitive species. Additionally, increased use of

groundwater resources would likely decrease the amount and longevity of habitats that are dependent on groundwater seeps (i.e., springs and other areas where groundwater surfaces). This would potentially result in significant impacts to biological resources that are dependent on wetlands, springs, and aquatic habitats, including the protected species that use these habitats. The Project would not directly impact biological resources in the CLWA service area; thus, impacts would be greater under this alternative.

Cultural Resources — Depending on the location of individual sites, construction of the groundwater production wells and distribution facilities could have a significant impact on cultural resources. This impact would be mitigable to less than significant by conducting a survey to identify whether cultural resources are present prior to construction and taking appropriate measures to avoid or reduce impacts. These may include relocating construction sites to avoid the cultural resources or performing testing, evaluation, and data recovery if relocating the sites is not feasible. Impacts would be e greater than the Project because no additional facilities would be constructed for the Project. The Project would not directly impact cultural resources in the CLWA service area; thus, impacts would be greater under this alternative.

Geology, Soils, and Mineral Resources — As described above under the No Project Alternative, Build-Out Scenario, increased groundwater pumping could lead to subsidence, which would be a significant and unavoidable impact. The limited construction required would not result in the substantial loss of availability of a known mineral resource. Construction activities could, however, result in erosion. This impact could be significant but would be mitigable to less than significant through the implementation of BMPs. The Project would not directly impact geology and soils in the CLWA service area; thus, impacts would be greater under this alternative.

Hazards and Hazardous Materials — Groundwater from the Saugus Formation would require disinfection prior to use. The present disinfectant used for groundwater treatment is gaseous chlorine, which is provided in 150 lb. cylinders and injected at the wellheads, although CLWA may switch to chloramines (e.g., by adding an ammonia solution, treating with chloramines) in several years. Because these treatment facilities would be sited at several locations, potential public exposure in the event of an accidental release could be higher than at the centralized treatment facilities utilized for the Project. These treatment facilities are located in relatively remote areas and have scrubbing facilities to mitigate potential accidental releases. Any use of hazardous materials would need to comply with applicable laws and regulations, and impacts would be less than significant. Because of the higher potential for public exposure to hazardous materials under this alternative, hazards and hazardous materials impacts would be greater than that of the Project.

Land Use and Planning — Where possible, the distribution pipelines would be placed in public rights-of-way; these underground pipelines would not affect nearby land uses. Depending on the location of production wells, their construction and operation could result in environmental impacts that would conflict with land use plans and policies adopted for the purpose of avoiding environmental impacts. Impacts could be significant but would be mitigable to less than significant by implementing measures such as those described elsewhere in this section that would bring the project into compliance with those policies. The Project would not result

in land use impacts since no construction would occur or conflict with adopted plans and policies.

Noise — Noise would result from the construction of new facilities and the operation of pumps. Impacts could be significant if sensitive receptors were located nearby. Impacts could be mitigated to less than significant through the implementation of measures such as limiting construction to daylight hours on weekdays, using muffled construction equipment, and enclosing pumps. The Project would not directly impact noise in the CLWA service area; thus, impacts would be greater under this alternative.

Population and Housing — Construction of the groundwater production wells and distribution facilities would not displace existing housing or populations. This impact is comparable to that of the Project.

Public Services — Increased extractions from the Saugus Formation would not result in increased demands on public services, including police protection, fire protection, education, and library services. This impact is comparable to that of the Project.

Recreation — The construction and operation of groundwater production wells would not result in physical changes to recreational facilities or lead to the construction of new facilities. Neither this alternative nor the Project would result in adverse impacts to recreational resources.

Transportation and Circulation — The construction of groundwater production wells and treatment facilities would generate minor amounts of traffic, which would not cause significant impacts. Construction of pipelines could result in temporary lane closures or other short-term traffic disruptions, but this would be less significant because standard procedures would have to be followed to allow safe access through the construction area. Long-term maintenance would generate minimal amounts of traffic. The Project would not directly impact transportation and circulation in the CLWA service area; thus, impacts would be greater under this alternative.

Utilities/Service Systems — This alternative would affect utilities and service systems by requiring an increased amount of electrical power to operate groundwater pumps and treatment facilities. The increase of approximately 29 million kWh per year would be less than the Project's estimated 140 million kWh demand, and no expansion or new construction of power-generating facilities would be required. This impact would be less than significant and less than the Project impact.

Water Resources — Depending on individual site locations, construction of the groundwater production wells and distribution facilities could impact the water quality of drainage courses located adjacent to the facilities due to increased erosion. This impact could be significant but would be mitigable to less than significant by the implementation of BMPs. The Project would not directly cause erosion in the CLWA service area; thus, impacts would be greater under this alternative.

Extractions from the Saugus Formation vary according to hydrologic conditions. As shown on Table 3.15-8, extractions in recent years have ranged from 21,500 AF in 1990 to 32,100 in 1996.

The formation should be capable of producing as much as 40,000 AFY during a dry period of five to six years (Montgomery Watson 1998). However, there are no historical records or studies that can guarantee that the Saugus Formation can reliably produce an additional 34,400 AFY over an extended period of time. Increasing the groundwater production to such an extent without implementation of other measures (e.g., the reduction of non-urban use of groundwater resources and local aquifer storage and recovery programs) could exceed the normal year yield of the Saugus Formation. This would be a significant and unmitigable impact. This impact would be greater than those of the Project, which would have a beneficial impact to groundwater.

Perchlorate contamination has been discovered in parts of the Saugus Formation (see section 3.15.1.3 under the subheading Groundwater Quality for a more detailed discussion of perchlorate, some of which is summarized in this section). Field studies and groundwater modeling activities are in progress to evaluate how best to hydraulically contain the portion of the aquifer system where production wells have been shut down due to perchlorate contamination, while simultaneously preventing perchlorate movement to currently unimpacted areas. The field studies have included the installation and sampling of monitoring wells at multiple depths and locations on and around the Whittaker-Bermite site, the most likely source of perchlorate; water level monitoring in these wells; aquifer testing of two unimpacted water supply wells; and groundwater velocity testing in alluvial monitoring wells located between the site and the Santa Clara River. These studies have helped the water purveyors and the Whittaker Corporation further refine the current understanding of groundwater flow patterns in specific areas on and near the site (such as along the Holser Fault).

This information has been incorporated into the purveyor's regional groundwater flow model, which is being used to identify a pumping scheme for impacted wells that would meet the objectives of restoring the lost water supply from the impacted wells (with wellhead treatment) while simultaneously containing perchlorate and hydraulically limiting its movement downgradient to unimpacted wells and other portions of the aquifer system where new water supply wells might be constructed. The modeling analysis accounts not only for the pumping of impacted wells, but also (a) the 2000 UWMP's pumping plan for unimpacted wells throughout the Santa Clarita Valley and (b) the significant year-to-year variation in local hydrology (especially groundwater recharge) that occurs in the Valley (CH2MHill 2004). The modeling simulations will be used to guide selection of a final pumping plan for the impacted Alluvial Aquifer well and the impacted Saugus Formation wells. The selection of a final pumping plan will be made jointly by the purveyors and the Whittaker Corporation, with regulatory oversight and permitting performed by the CA DHS with technical support from the DTSC.

Development of additional wells or increased pumping from existing wells could be limited in some locations to avoid expansion of the contamination plumes. Because perchlorate historically has not been considered a common drinking water contaminant, no federal or state drinking water standards exist. In 2002, the OEHHA proposed a public health goal, in the range of 2 to 6 ppb, for the amount of perchlorate present in drinking water (LADRP 2003a). Both the federal and state governments require monitoring for perchlorate and have recommendations for potable water uses of water sources exceeding 18 μg/L or 18 ppb. The CA DHS has lowered the action level for drinking water in perchlorate from 18 ppb to 4 ppb

(CA DHS 2002). In addition to the OEHHA's proposed public health goal, the CA DHS is required to adopt a primary drinking water standard for perchlorate by January 1, 2004 (LADRP 2003a). An MCL for perchlorate is not expected until 2004 (SCVWP 2003). Several treatment technologies for the removal of perchlorate from water are currently available, and impacts to water quality would be less than significant because water would be treated prior to distribution. This would, however, increase the cost for treating water from these wells to achieve applicable water quality standards. This impact would be comparable to that of the Project, since SWP water also would require treatment.

The less than significant impacts to the resources associated with the SWP from changes in the timing of water use would not occur since no water would be transferred, nor would the less than significant impacts to groundwater and water quality in the WRMWSD.

7.3.3 Alternative 3, Exchange Desalinated Water for SWP Water (Desalination/Exchange)

This alternative comprises two primary components in lieu of the Project: (1) CLWA would contribute a portion of the funds needed by another agency to develop a seawater desalination facility along the southern California coast; and (2) an average of 34,400 AFY of desalinated water produced by this facility would be exchanged with CLWA for SWP water. A likely partner in such an arrangement would be The Metropolitan Water District of Southern California (Metropolitan). If both parties agreed, CLWA would enter into a contract with Metropolitan indicating that a portion of Metropolitan's annual SWP Table A Amount would be delivered to Castaic Lake for use by CLWA in exchange for CLWA's contribution to a desalination facility to be constructed by Metropolitan. CLWA would treat and distribute SWP this water in existing CLWA facilities, and Metropolitan would use water from the desalination facility in lieu of the SWP water exchanged with CLWA.

Assuming a 50 percent recovery rate, a plant capacity of approximately 61 mgd would be required to produce an average of 34,400 AFY. Depending on the extent of ancillary facilities included at the site, a site of at least 2 acres could be required. In addition to the desalting plant, the coastal facility would likely include new electrical power conveyance and control equipment, ocean water intake and brine disposal structures, and a treated water pumping plant. Total site area could be up to 5 acres. Depending on site location, additional pipelines and related pumping facilities may be required to convey the desalinated water a short distance to the existing Metropolitan distribution facilities.

Impacts

Growth inducement and growth-related impacts within the CLWA service area would be as described for the Project. This alternative, therefore, would not reduce or avoid the significant indirect impacts of the Project in the CLWA service area. Direct impacts of this alternative are described below and compared to those of the Project.

Aesthetic/Visual Resources — Construction of a desalination facility on 2 to 5 acres of land and associated pipelines could impact aesthetic/visual resources. These impacts could be significant but mitigable to less than significant if they were located in visually sensitive areas, which are common along the coast. Mitigation measures could include relocating, redesigning, or screening the desalination facility and restoring the pipeline corridor to minimize visual

impacts. These impacts would be greater than those of the Project, which would not directly affect visual/aesthetic resources.

Agricultural Resources — Some agricultural areas are located along the southern California coast. If the desalination facility and pipeline were located on Important Farmland, the impact would be less than significant because a substantial amount of farmland would not be converted to non-agricultural use. This impact would be greater than that of the Project, which would not directly affect agricultural resources.

Air Quality — Section 30253(3) of the Coastal Act requires that new development be consistent with requirements imposed by an air pollution district or the State Air Resources Control Board. In general, the air emissions from reverse osmosis desalination plant consist only of discharges of a degasifier. The production of electricity for use in desalination plants, however, would increase air emissions (Woodward-Clyde 1994), although they likely would not be significant because any existing fossil fuel-fired power plant that provides electricity for the Project would have to comply with all ambient air quality standards and applicable air permit conditions, such as emission offsets. Short-term combustive and fugitive dust emissions would result from construction of the desalination plant and any conveyance pipelines. Depending on the mix of equipment used, construction activities could exceed the relevant air pollution control district's daily significance thresholds, which would be a significant impact. Short-term impacts of this alternative would be mitigable to less than significant by implementing standard operating practices to ensure that fugitive dust (PM_{10}) emissions are minimized (e.g., applying water to areas where vehicles and equipment operate on bare soil and cover inactive soil stockpiles or treat them with soil binders, such as crusting agents or water them to keep moist) and implementing measures to reduce peak daily NO_x emission impacts (e.g., using alternative diesel fuels, such as diesel emulsions or biodiesels, extending the duration of the construction period to reduce daily equipment usage, and maximizing the use of diesel-powered construction equipment manufactured after year 1995). Air quality impacts would be greater than under the Project.

Biological Resources — Marine resources in the vicinity of a desalination plant could be affected by the constituents present in the concentrate discharges, by the concentrate discharge method used, and by the process of feed water intake. Coastal Act Sections 30230 and 30231 provide for the maintenance, enhancement, and restoration of marine resources and biological productivity (California Coastal Commission 2003).

All desalination plants use chlorine or other biocides, which are hazardous to marine resources, to clean pipes and other equipment and sometimes to pretreat the feed water. The SWRCB does not permit chlorine or other biocides to be discharged directly to the ocean. Consequently, these chemicals would have to be neutralized before discharge (California Coastal Commission 2003). Concern over the potential adverse effects to marine resources of desalination plant discharges is tempered by the following factors: total volume of concentrate being released; the constituents of the concentrate discharge; and, the amount of dilution prior to release. The high salt concentration of the concentrate and resulting localized fluctuations in salinity levels may kill organisms near the outfall that cannot tolerate either high salinity levels or fluctuations in the levels. In addition, discharges from desalination plants would be denser than seawater and could sink to the ocean floor, potentially causing adverse impacts to benthic communities. These effects may be considerably reduced if desalination plant concentrate discharges are

combined with sewage treatment plant discharges (which are less dense than seawater) or are diluted by mixing with power plant cooling water discharges. At this time, however, there is considerable uncertainty about how well desalination plant discharges, either alone or combined with other discharges, would be diluted in seawater. Metals in the concentrate discharge may become concentrated in the upper few micrometers of the ocean (the microlayer), which could be toxic to fish eggs, marine organisms, and larvae that are located there. Impacts to biological resources could be significant but likely could be mitigated to less than significant by measures such as treating water prior to discharge. These impacts would be greater than those of the Project, which would not directly affect biological resources.

Construction activities also could result in disturbance to sensitive habitat and wildlife species. Impacts would be significant but could be mitigable to less than significant by measures such as modifying construction timing, avoiding construction sites when sensitive species are present, and restoring disturbed habitat. These impacts would be greater than those of the Project, which would not directly affect biological resources.

Cultural Resources — Depending on the location of individual sites, construction of the seawater desalination facility and conveyance pipelines could have a significant impact on cultural resources. This impact would be mitigable to less than significant by conducting a survey to identify whether cultural resources are present prior to construction and taking appropriate measures to avoid or reduce impacts. These may include relocating construction sites to avoid the cultural resources or performing testing, evaluation, and data recovery if relocating the sites is not feasible. The Project would not directly impact cultural resources; thus, impacts would be greater under this alternative.

Geology, Soils, and Mineral Resources —The limited construction required would not result in the substantial loss of availability of a known mineral resource. The seawater desalination facility and water conveyance pipelines could be subject to geologic hazards, including seismic hazards, expansive soils, and unstable ground units depending on site locations. Construction also could result in erosion and siltation. These impacts would be mitigable to less than significant through appropriate siting and the implementation of appropriate engineering practices and BMPs. The Project would not directly impact geology and soils; thus, impacts would be greater under this alternative.

Hazards and Hazardous Materials — The desalination plant would require the use of hazardous materials, such as chlorine, caustic soda (sodium hydroxide), acid, dechlorination chemicals, and carbon dioxide. An accidental release of these chemicals could have adverse effects on plant personnel, the general public, and plant and, possibly, aquatic life depending on the location of the facility (Woodward-Clyde 1991). Impacts could be significant but would be mitigable to less than significant through compliance with federal, state, and local laws and regulations. These regulations stipulate minimum standards for design of facilities, storage requirements, spill prevention procedures, emergency response and contingency plans, risk, management, and employee training procedures. The proposed desalination facility would have to adhere to pertinent regulations including the Uniform Building Code, the Uniform Fire Code, and related regulations related to risk management (Woodward-Clyde 1991). The Project would not directly impact hazards and hazardous materials; thus, impacts would be greater under this alternative.

Land Use and Planning — Depending on site location, the desalination facility could result in conflicts with existing land uses or with future development plans. The facility and associated pipeline also could result in environmental impacts that would conflict with relevant adopted plans and policies. Impacts could be significant but likely could be mitigated to less than significant through the implementation of measures such as those described elsewhere in this section. These impacts would be greater than those of the Project, which would not directly affect land use or planning.

Noise — Noise would result from the construction of new facilities and the operation of pumps and an emergency generator. Impacts could be significant if sensitive receptors were located nearby. Impacts could be mitigated to less than significant through the implementation of measures such as limiting construction to daylight hours on weekdays, using muffled construction equipment, and enclosing pumps and the generator. The Project would not directly impact noise; thus, impacts would be greater under this alternative.

Population and Housing — Constructing and operating a desalination plant and pipeline would not displace population or housing, nor would it directly induce population growth. Impacts would be comparable to the Project.

Public Services — Constructing and operating a desalination plant and pipeline would place minimal demands on fire and police protection and would not affect schools or library services. No new public services facilities would be required as a result of this alternative. Impacts would be negligible and would be comparable to those of the Project.

Recreation — Depending on the site selected, coastal recreation and access could be restricted, and impacts could be significant. They could be mitigated to less than significant through the implementation of measures such as selecting sites that are not used for recreational purposes and providing public access where appropriate. Impacts could be greater than those of the Project since it would not affect recreational opportunities.

Transportation and Circulation — Constructing and operating the desalination facility and pipeline would result in increased traffic associated with the transportation of materials, equipment, and employees to and from the site(s). Existing traffic levels on surrounding freeways and roads leading to the facility would determine the level of impact on transportation, but impacts likely would be less than significant or mitigable to less than significant through scheduling of deliveries, use of flagpersons where needed, and other standard traffic control measures. Construction of pipelines could result in temporary lane closures or other short-term traffic disruptions, but this would be less significant because standard procedures would have to be followed to allow safe access through the construction area. The Project would not directly impact transportation and circulation; thus, impacts would be greater under this alternative.

Utilities/Service Systems — Constructing and operating the desalination facility and pipeline would generate some materials (e.g., construction materials, filters, and office materials) that would require disposal in a landfill. The significance of the impact would depend upon the amount of materials generated and the availability of disposal space. Electrical power would be needed to operate the desalination plant and water pumps. Impacts likely would be less than significant. This alternative would have greater impacts to solid waste disposal than the

Project; the impacts to electrical power generation likely would be comparable to those of the Project.

Water Resources — Construction could result in erosion and short-term water quality impacts to nearby water bodies. This impact could be significant but would be mitigable to less than significant through the implementation of BMPs. Effluent discharge could affect the water quality of coastal areas, but this impact would be mitigable to less than significant through compliance with permitting conditions imposed by the RWQCB. These impacts would be greater than the Project and would be significant, although incorporation of standard mitigation measures would reduce the severity of impacts. The Project would not directly cause erosion; thus, this impact would be greater under this alternative. The less than significant impacts to the resources associated with the SWP from changes in the timing of water use would not occur since no water would be transferred, nor would the less than significant impacts to groundwater and water quality in the WRMWSD.

7.3.4 Alternative 4, Transfer of a Smaller Table A Amount (Smaller Table A Amount)

Under this alternative, CLWA would acquire a smaller amount of SWP Table A Amount than under the Project. A transfer of approximately 20,000 AF of SWP Table A Amount was analyzed since it is the approximate mid-point between the amount that would be transferred under the Project and the No Project Alternative. Existing facilities would be used, as described for the Project.

Since the demand for high quality surface water is expected to increase in southern California as a result of anticipated growth, the remaining SWP Table A Amount (21,000 AF) could be acquired and transferred to other (unidentified) portions of urbanized southern California. The Table A Amount not acquired by CLWA would likely be acquired by other agencies with growing urban water demands. However, the timing, amount, and location of the transfer(s) as well as the associated impacts are speculative and are not evaluated under this alternative.

Impacts

Growth inducement and growth-related impacts within the CLWA service area generally would be as described for the Project but would be reduced proportionately. This alternative, therefore, would reduce the significant indirect impacts of the Project in the CLWA service area. Direct impacts of this alternative are described below and compared to those of the Project.

Aesthetic/Visual Resources – As described for the Project, no direct impacts to aesthetic/visual resources would occur.

Agricultural Resources — As described for the Project, no direct impacts to agricultural resources would occur.

Air Quality — This alternative would result in lower air emissions from power plants that provide electricity for pumping than the Project since approximately half of the water would be transported.

Biological Resources — As described for the Project, no direct impacts to biological resources would occur.

Cultural Resources —The same types of impacts on cultural resources from minor seasonal changes in the volume of water stored in San Luis Reservoir would occur as described for the Project, but would be lessened since less water would be transferred.

Geology, Soils, and Mineral Resources — The same types of impacts on erosion from minor seasonal changes in the volume of water stored in San Luis Reservoir would occur as described for the Project, but would be lessened since less water would be transferred.

Hazards and Hazardous Materials — The same types of impacts associated with hazardous materials from water treatment would occur as described for the Project, but lesser quantities would be required.

Land Use and Planning — As described for the Project, no direct impacts to land use and planning would occur.

Noise — As described for the Project, no direct impacts to noise would occur.

Population and Housing — As described for the Project, no direct impacts to population and housing would occur.

Public Services — As described for the Project, no direct impacts to public services would occur.

Recreation — As described for the Project, no direct impacts to recreation would occur.

Transportation and Circulation — As described for the Project, no direct impacts to transportation and circulation would occur.

Utilities/Service Systems — Less electrical power would be required for this alternative than for the Project, since less water would be transported and treated. Impacts would remain less than significant.

Water Resources — Like the Project, this alternative would have a beneficial impact to the CLWA service area's water supply, although less water would be provided. Thus, less benefit would result from this alternative. The less than significant impacts to the resources associated with the SWP from changes in the timing of water use would be lessened since less water would be transferred. Similarly, the less than significant impacts to groundwater and water quality in the WRMWSD would be lessened, as well.

Assuming groundwater resources are managed so that long-term groundwater extractions do not exceed long-term groundwater recharge, the water resource impacts from this alternative would be similar to those of the Project. However, if local groundwater resources were utilized on a long-term basis in excess of the long-term groundwater recharge to supply water during periods of drought or if overall water demand exceeded supply, significant impacts to water resources would occur.

As was the case in the No Project Alternative, local groundwater resources and other water management actions (including local and out-of-region conjunctive groundwater management, groundwater banking and mandatory conservation measures) may play a larger role in the satisfaction of future water demands. Should water demands exceed supplies, groundwater resources would likely be stressed, especially during periods of extended drought, and deliveries may be limited or reduced depending on demands. Under the Lower Table A alternative, individual landowners may be more likely to assert their rights to confined groundwater resources beneath their land, drill groundwater production wells and seek development rights based on that water supply, however these impacts are not specifically quantified, evaluated or assumed. Since the Smaller Table A alternative does not identify a level of regional water demand, specific impacts on water resources and other water dependent indirect impacts (e.g. biological impacts to wetland habitats) cannot be specifically determined. In the absence of appropriate regional management of groundwater resources, the indirect impacts on local water resources from the Smaller Table A alternative could be similar to or greater than those from the Project, and would be significant.

7.3.5 Alternative 5, Transfer of a Larger Table A Amount (Larger Table A Amount)

Under this alternative, CLWA would acquire a larger SWP Table A Amount than under the Project. Such an alternative would require the use of a larger proportion of the SWP facilities and capacities than described for the Project, and would attempt to reduce or avoid the effects of reductions in SWP supplies (during periods of drought) on local groundwater resources. In order to provide an analysis of impacts of a transfer greater than the Project (transfer of 41,000 AF of Table A Amount), a transfer of approximately 60,000 AF of SWP Table A Amount was established for this alternative. This Table A Amount is potentially available from other KCWA member units who have expressed interest in reducing their Table A Amount and have completed CEQA analysis of the sale of this contract right (e.g., Belridge Water Storage District, Berrenda Mesa Water District, and Lost Hills Water District [BWSD 1998; BMWD 1996]). Existing facilities would be used, as described for the Project.

Impacts

Indirect Impacts

If development within the CLWA service area were held to the level that could be served by the Project, indirect impacts to most environmental resources would be the same as those described for the Project. This might occur if, for example, the additional Table A Amount (i.e., the incremental 20,000 AF above the Project Table A Amount) were used in lieu of groundwater pumping. Under this assumption, the larger Table A Amount (approximately 50 percent greater than the Project amount, or approximately 20 percent greater than the total CLWA Table A Amount with the Project) also would be used to avoid some of the adverse impacts during periods of reduced deliveries from the SWP to local groundwater and water-dependent biological resources that are described in Chapter 4. The additional Table A Amount would provide approximately 20 percent more water (under each of the hydrologic conditions described) than would be delivered by the total CLWA Table A Amount with the Project, thereby reducing the potential impact by about 20 percent (i.e., when the total Table A Amount is considered, or 50 percent if only the Project increment is considered).

If local governments approved development within the CLWA service area beyond a level that could be supported by the 41,000 AF of Table A Amount for the Project, indirect, growth-related impacts described in section 4.0 could increase proportionately.

Direct Impacts

Aesthetic/Visual Resources – As described for the Project, no direct impacts to aesthetic/visual resources would occur.

Agricultural Resources — As described for the Project, no direct impacts to agricultural resources associated with the SWP, WRMWSD, or the CLWA service area would occur. Prior environmental analyses by KCWA member units (e.g., BWSD 1998) have concluded that the sale of approximately this total amount of SWP Table A Amount would result in less than significant impacts to agricultural resources within areas served by the selling water district(s).

Air Quality — This alternative would result in greater air emissions from power plants that provide electricity for pumping than the Project since approximately 50 percent more water would be transported (approximately 210 million kWh per year would be required). As described for the Project, any existing fossil fuel-fired power plant that provides electricity for the Project would have to comply with all ambient air quality standards and applicable air permit conditions, such as emission offsets. Therefore, air quality impacts due to the generation of electrical power for this alternative would be less than significant.

Biological Resources — As described for the Project, no direct impacts to biological resources would occur.

Cultural Resources —The same types of impacts on cultural resources from minor seasonal changes in the volume of water stored in San Luis Reservoir would occur as described for the Project, but would be somewhat greater since more water would be transferred.

Geology, Soils, and Mineral Resources — The same types of impacts on erosion from minor seasonal changes in the volume of water stored in San Luis Reservoir would occur as described for the Project, but would be somewhat greater since more water would be transferred.

Hazards and Hazardous Materials — The same types of impacts associated with hazardous materials from water treatment would occur as described for the Project, but greater quantities would be required.

Land Use and Planning — As described for the Project, no direct impacts to land use and planning would occur.

Noise — As described for the Project, no direct impacts to noise would occur.

Population and Housing — As described for the Project, no direct impacts to population and housing would occur.

Public Services — As described for the Project, no direct impacts to public services would occur.

Recreation — As described for the Project, no direct impacts to recreation would occur.

Transportation and Circulation — As described for the Project, no direct impacts to transportation and circulation would occur.

Utilities/Service Systems — More electrical power would be required for this alternative than for the Project, since more water would be transported and treated (approximately 210 million kWh per year would be required). This is approximately 4-5 percent of the total electrical power used by the 25 SWP pumping and generating plants in 1998, which was a year in which 100 percent of Contractors' allocations were available and therefore power demand was high. It is approximately 2-3 percent of the electrical power used in 2000 (a 90 percent allocation year for the SWP). According to the California Energy Commission (CEC 2002b), for the foreseeable future, the addition of capacity will exceed increase in peak demand both within California and in the Northwest, Southwest, and Rocky Mountain regions. While various factors may trigger calls for load curtailments, supply reserve margins should be adequate to meet the reasonably foreseeable demands. Direct impacts would be greater than the Project, but would remain less than significant.

Water Resources — Like the Project, this alternative would have a beneficial impact to the CLWA service area's water supply, including a greater benefit to groundwater resources.

Assuming groundwater resources are managed so that long-term groundwater extractions do not exceed long-term groundwater recharge, the groundwater resource impacts from the Larger Table A alternative would be similar to those of the Project. In addition, the increased SWP Table A Amount transfer would result in additional water being delivered to the CLWA service area in years of lower SWP water deliveries. Provided the same amount of anticipated development occurred within the CLWA service area as under the Project, this increased delivery in drier years would reduce potential impacts to groundwater resources. However, if a more likely scenario occurs in which continued demand for additional housing in the Santa Clarita Valley results in incrementally greater development being approved by local government and if the additional 19,000 AF of Table A Amount supported this additional development, no benefit to the local groundwater resources would be realized and no enhanced water delivery capability would be developed. As with the Project, if local groundwater resources were utilized on a long-term basis in excess of the long-term groundwater recharge to supply water during periods of drought or if water demand exceeded supply, significant impacts to water resources would occur.

7.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 7.4-1 compares the direct and indirect environmental impacts of each of the alternatives carried forward for detailed analysis with those of the Project. Scenarios 1 and 2 of Alternative 1, the No Project Alternative, would reduce or avoid the significant indirect (growth-related) impacts of the Project in the CLWA service area, but these impacts could occur in another area if projected growth were re-located elsewhere. Each alternative would result in greater direct impacts since new groundwater wells, treatment facilities, and associated pipelines would be required. Additionally, each of these scenarios could result in significant unavoidable impacts to groundwater supply and groundwater quality. This alternative would not augment CLWA's water supply and therefore would not meet the Project objectives. Since the direct impacts of

the No Project Alternative would be substantially greater than the Project and since it would not meet Project objectives, this alternative is not considered environmentally superior.

Table 7.4-1. Comparison of Direct and Indirect Environmental Impacts of Alternatives with Project Impacts

	ALTERNATIVE											
	No Project				*Increased Groundwater Extractions*		*Desalination/ Exchange*		*Smaller Table A Amount*		*Larger Table A Amount*	
Resource Area	*Moratorium Scenario**		*Build-Out Scenario*									
	Dir.	Ind.	Dir.	Ind.	Dir.	Ind.	Dir.	Ind.	Dir.	Ind.	Dir.	Ind.
Aesthetic/Visual Resources	+	--	+	-	+	=	+	=	=	-	=	+
Agricultural Resources	+	--	+	-	+	=	+	=	=	-	=	+
Air Quality	+	--	+	-	+	=	+	=	=	-	+	+
Biological Resources	+	--	+	-	+	=	+	=	=	-	=	+
Cultural Resources	+	--	+	-	+	=	+	=	-	-	+	+
Geology, Soils, and Mineral Resources	+	--	+	-	+	=	+	=	-	-	+	+
Hazards and Hazardous Materials	+	--	+	-	+	=	+	=	-	-	+	+
Land Use and Planning	+	--	+	-	+	=	+	=	=	-	=	+
Noise	+	--	+	-	+	=	+	=	=	-	=	+
Population and Housing	=	-	=	—	=	=	=	=	=	-	=	+
Public Services	=	--	=	-	=	=	=	=	=	-	=	+
Recreation	=	--	=	-	=	=	+	=	=	-	=	+
Transportation and Circulation	+	--	+	-	+	=	+	=	=	-	=	+
Utilities and Service Systems	-	--	-	-	-	=	+	=	-	-	+	+
Water Resources	+	--/+	+	-/+	+	=	+	=	-	-	+	+

* Under the Moratorium Scenario, indirect, growth-related impacts would not occur in the CLWA service area, but could occur elsewhere if projected growth were relocated.
= Alternative's impacts comparable to Project
- Alternative would reduce Project impacts
-- Alternative would avoid Project impacts
+ Alternative's impacts greater than the Project
-/+ Alternative would reduce or avoid some impacts, increase other impacts

Alternative 2, the Increased Groundwater Extractions Alternative, would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant

growth-related impacts. It would result in greater direct impacts to many environmental resources because new groundwater wells, treatment facilities, and pipelines would have to be constructed. It also would result in a significant, unavoidable impact to groundwater supply, whereas the Project would result in a beneficial impact to groundwater supply through recharge. This alternative would not augment CLWA's water supply for its customers and therefore would not meet the Project objectives. Because the direct impacts of the Increased Groundwater Extractions Alternative would be substantially greater than the Project and since it would not meet Project objectives, this alternative is not considered environmentally superior.

Alternative 3, the Desalination/Exchange Alternative, would result in the same indirect impacts as the Project and thus would not reduce or avoid the Project's significant growth-related impacts. It would result in greater direct impacts to many environmental resources from the construction and operation of a new desalination plant and pipeline. This alternative would augment CLWA's water supply since desalinated water would be exchanged with another water agency's SWP Table A Amount, which would be conveyed to existing CLWA facilities, and therefore would meet the Project objectives. Because the direct impacts of the Desalination/Exchange Alternative would be substantially greater than the Project, however, this alternative is not considered environmentally superior.

Alternative 4, the Smaller Table A Amount Alternative, would reduce the potentially significant indirect impacts of the Project and would result in similar or lessened direct impacts, as well. This alternative would not meet one of the two Project objectives, however, which is to "Augment CLWA's SWP Table A Amount to meet water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area." Thus, while this alternative would result in lessened direct and indirect impacts, it does not meet an important basic Project objective[2] and is not considered the environmentally superior alternative.

Alternative 5, the Larger Table A Amount Alternative, could increase the significant indirect impacts of the Project and would result in similar or greater direct impacts, as well. It would meet the Project objectives but would result in greater environmental impacts than the Project and is not considered environmentally superior.

The Project is identified as the environmentally superior alternative that meets Project objectives.

2 Under CEQA Guidelines 15126.6, an EIR must describe a range of reasonable alternatives that would feasibly attain most of the basic objectives of the proposed project but would avoid or substantially lessen significant impacts of the project.

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10.0 LIST OF ACRONYMS AND GLOSSARY OF TERMS

ACRONYMS

AF	acre-feet
AF/acre	acre-feet per acre
AFY	acre-feet per year
AQMP	Air Quality Management Plan
APCD	Air Pollution Control District
ARB	California Air Resources Board
BE	Bookman-Edmonston Engineering
BMP	Best Management Practice
BMWD	Berrenda Mesa Water District
BWSD	Belridge Water Storage District
CAA	Clean Air Act
CAAA	California Clean Air Act
CAAQS	California Ambient Air Quality Standards
CA DHS	California Department of Health Services
Cal OSHA	California Occupational Safety and Health Administration
CalTrans	California Department of Transportation
CCR	California Code of Regulations
CCWA	Central Coast Water Authority
CDEC	California Data Exchange Center
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfs	cubic feet per second
CHP	California Highway Patrol
CIP	Capital Improvements Plan
CIWMB	California Integrated Waste Management Board
CLWA	Castaic Lake Water Agency
CMP	Conservation Management Practice
CNEL	Community Noise Equivalent Level

CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	carbon monoxide
CPA	Citizens Planning Association of Santa Barbara County
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
cy	cubic yard
D-1641	Water Right Decision 1641
dB	decibel
° F	degree Fahrenheit
DEIR	Draft Environmental Impact Report
DMS	Development Monitoring System
DOGGR	California Department of Conservation, Division of Oil, Gas and Geothermal Resources
DOT	U.S. Department of Transportation
DTSC	California Department of Toxic Substances Control
DU/Ac	dwelling units per acre
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ESA	Federal Endangered Species Act
ESFP	Earl Schmidt Filtration Plant
FEIR	Final EIR
FMMP	Farmland Mapping and Monitoring Program
GMC	Growth Management Chapter
HAA5	Haloacetic Acids
HCP	Habitat Conservation Plan
HOV	high occupancy vehicle
ICU	intersection capacity utilization
IWRP	Integrated Water Resources Plan
JPOD	Joint Points of Diversion

1	KCESSD	Kern County Engineering and Survey Services Department
2	KCFD	Kern County Fire Department
3	KCVFHCP	Kern County Valley Floor Habitat Conservation Plan
4	KCWA	Kern County Water Agency
5	kWh	kilowatt hour
6	LACSD	Los Angeles County Sanitation Districts
7	LADRP	Los Angeles Department of Regional Planning
8	LADWP	Los Angeles Department of Water and Power
9	LARWQCB	Los Angeles Regional Water Quality Control Board
10	L_{dn}	Day/Night Average Sound Level
11	L_{eq}	Energy-equivalent sound/noise descriptor
12	LOS	Level of Service
13	M&I	municipal and industrial
14	MAF	million acre-feet
15	MCE	Maximum Credible Earthquake
16	MCL	Maximum Containment Level
17	MCLG	Maximum Contaminant Level Goal
18	mgd	million gallons per day
19	$\mu g/m^3$	micrograms per cubic meter
20	$\mu g/L$	micrograms per liter
21	mg/l	milligrams per liter
22	ml	millileters
23	MND	Mitigated Negative Declaration
24	MOU	Memorandum of Understanding
25	MPN	most probable number
26	MW	megawatt
27	MWD	Metropolitan Water District of Southern California
28	NAAQS	National Ambient Air Quality Standards
29	NCCP	Natural Community Conservation Plan
30	NCWD	Newhall County Water District
31	NEA	Northwest Economic Associates
32	NEPA	National Environmental Policy Act
33	NH_3	ammonia

1	NO_2	nitrogen dioxide
2	NO_3	nitrate
3	NOE	Notice of Exemption
4	NOP	Notice of Preparation
5	NPDES	National Pollution Discharge Elimination System
6	NTU	nephelometric turbidity unit
7	OEHHA	California Office of Environmental Health Hazard Assessment
8	O_3	ozone
9	PCL	Planning and Conservation League
10	PG&E	Pacific Gas & Electric Company
11	PHG	Public Health Goal
12	$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
13	PM_{10}	particulate matter less than 10 microns in diameter
14	ppb	parts per billion
15	ppm	parts per million
16	ppt	parts per trillion
17	PRC	Public Resource Code
18	RCPG	Regional Comprehensive Plan and Guide
19	RCRA	Resource Conservation and Recovery Act
20	RO	reverse osmosis
21	ROC	reactive organic compound
22	ROD	Record of Decision
23	ROG	reactive organic gas
24	ROI	region of influence
25	RTP	Regional Transportation Plan
26	RVWTP	Rio Vista Water Treatment Plant
27	RWQCB	Regional Water Quality Control Board
28	SCAB	South Coast Air Basin
29	SCAG	Southern California Association of Governments
30	SCAQMD	South Coast Air Quality Management District
31	SCVJSS	Santa Clarita Valley Joint Sewerage System
32	SCWC	Santa Clarita Water Company
33	SDIP	South Delta Improvements Program

SDWA	Safe Drinking Water Act
SEA	Significant Ecological Area
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Unified Air Pollution Control District
SoCal Gas	Southern California Gas Company
SOAR	Save Open-Space and Agricultural Resources
SO_2	sulfur dioxide
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
THM	Trihalomethane
TMDL	Total Maximum Daily Load
TRVFHCP	Tejon Ranch Valley Floor Habitat Conservation Plan
TSCA	Toxic Substances Control Act
TTHM	Total Trihalomethanes
UCMR	Unregulated Contaminant Monitoring Rule
USACE	United States Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UWMP	Urban Water Management Plan
VCFCD	Ventura County Flood Control District
VWC	Valencia Water Company
WR	Water Right
WRMWSD	Wheeler Ridge-Maricopa Water Storage District

GLOSSARY OF TERMS

acre-foot	Volume of water (43,560 cubic feet, or 325,900 gallons) that would cover one acre to a depth of one foot.
affected environment	Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as a result of a proposed human action.
Agricultural Contractor	A public water agency that has contracted with DWR for the delivery of SWP water for "Agricultural Use", as defined in the contractor's Water Supply Contract. Agricultural Contractors can use SWP water for purposes other than agricultural uses. (DWR 1962.)
aquifer	Any underground formation that stores, transmits and yields water to wells and springs.
Article 21 water	Water that DWR makes available when water and capacity are available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors demands are low, and only under specific conditions that do not occur on an annual basis. This type of water is identified in Article 21 of the Water Supply Contracts. It is the same as, but replaced, unscheduled surplus water as part of the Monterey Amendment. Additionally, Article 21 water was defined under the Monterey Amendment as "interruptible water," but it is more commonly referred to as "Article 21 water."
average year	For purposes of analyzing water supplies in the EIR, three hydrologic conditions were identified and evaluated: average year, single dry year and multiple dry year. The average year represents the average quantity of water available to the Contractor, based on the 73 years of DWRSIM model results.
candidate species	Plant or animal species not yet officially listed as threatened or endangered, but which is undergoing status review by the Service.
carryover water	SWP Table A water that is allocated to, and paid for by, a Contractor in one year, but is stored in San Luis Reservoir (when storage is available) for use by that Contractor in a following year.

Contractor or Contractors	Urban and agricultural public water agencies that hold Water Supply Contracts with DWR for the delivery of SWP water (DWR 1962).
critical habitat	Specific areas with physical or biological features essential to the conservation of a listed species and that may require special management considerations or protection. These areas have been legally designated via *Federal Register* notices.
cumulatively considerable	When the incremental effects of an individual project are considerable when viewed in connection with the effect of past projects, the effects of other projects, and the effects of probably future projects.
cultural resource	Building, site, district, structure, or object significant in history, architecture, archeology, culture, or science.
direct groundwater recharge	Direct groundwater recharge is the process of recharging groundwater supplies by the percolation of surface water supplies into the groundwater basin, most commonly done through the use of groundwater recharge ponds.
DWR dry year purchase	Water from DWR's Dry Year Water Purchase Program, through which water is purchased by DWR in shortage years from willing sellers in areas that have available supplies, and is then sold by DWR to Contractors willing to purchase those supplies.
effluent	Solid, liquid or gaseous wastes that enter the environment as a by-product of human-oriented processes; or water that has undergone treatment to remove pollutants.
endangered species	A species or subspecies whose survival is in danger of extinction throughout all or a significant portion of its range.
erosion	Wearing away of earth rock by running water, glaciers, winds and waves.
expansive soils	Expansive soils shrink and swell in volume as a result of the wetting and drying of fine-grained, clay-rich sediments. Development on expansive soils can result in damage to overlying structures over a long period of time, due to continued movement of soil.
fallow land	Usually cultivated land that is allowed to lie idle during the growing season.
flexible storage	Storage available to Contractors that share in repayment of the costs of terminal reservoirs (Castaic and Perris lakes). These

	Contractors may withdraw water from their share of flexible storage, in addition to any other SWP supplies available to the Contractor. The Contractor must replace any water it withdraws from flexible storage within five years. Flexible storage was added to the Water Supply Contracts as part of the Monterey Amendment. CLWA may withdraw up to 4,684 AF of water from Castaic Lake as flexible storage. (DWR 1995)
groundwater	Water stored beneath the surface in open pore spaces and fractures in rock.
groundwater recharge	Refers to the addition to the water within the earth that occurs naturally from infiltration of rainfall and from water flowing over the earth materials that allow water to infiltrate below the land surface.
hydrology	Science dealing with natural runoff and its effect on streamflow.
impaired waters	Water bodies for which existing pollution controls are insufficient to attain or maintain water quality standards pursuant to section 303(d) of the Clean Water Act.
inert pollutant	A pollutant that does not react in the atmosphere.
in-lieu groundwater recharge	In-lieu groundwater recharge is the process of recharging groundwater supplies by using surface water instead of groundwater that would otherwise be extracted and used.
insolation	Solar radiation received at the surface of the earth.
Interruptible water	Same as Article 21 water, described above. Water that DWR makes available when water and capacity are available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors demands are low, and only under specific conditions that do not occur on an annual basis. This type of water is identified in Article 21 of the Water Supply Contracts, but it was more commonly referred to as "interruptible water" prior to the Monterey Amendment.
landslides	Landslides are ground failures that are dependent on the geology and slope of an area as well as the amount of rainfall and the potential for seismic activity. Areas most susceptible to landslides have high relief and an unstable accumulation of material. Areas least likely to have landslides are characterized by low relief, such as valleys.

lateral spreading	Lateral spreading is the separating or rupturing of the ground surface, generally associated with liquefaction, as a result of strong seismically induced ground shaking. Lateral spreading commonly occurs along drainage banks, cliff areas, or steep shoreline areas, where generally loose sediments collapse due to a lack of lateral support.
Lead Agency	The agency initiating and overseeing the preparation of an environmental impact statement.
liquefaction	Liquefaction occurs when saturated soils lose cohesive strength as a result of strong seismically induced ground shaking of saturated, generally fine-grained sediments (i.e., typically silty fine sands). Strong ground motion of such sediments causes pore water pressure in the soil to increase, thereby turning the soil from a solid to a liquid state.
maximum contaminant level (MCL)	The maximum possible level of a contaminant allowed in water delivered to any user of a public water system.
megawatt (MW)	One million watts of electrical power (capacity).
megawatt hour (MWh)	One million watt-hours of electrical energy.
minimum project yield	The dependable annual supply of the SWP to be made available to SWP Contractors, as determined by DWR. The minimum project yield was originally estimated to be 4,000,000 AFY, was increased to 4,230,000 AFY in 1964, and decreased to 4,185,000 AFY as part of the Monterey Amendment. Under a recent amendment, estimated amounts are no longer included in the Water Supply Contract. (The minimum project yield would be reduced under a scenario in which DWR implemented Article 18(b); such a scenario is evaluated as part of this EIR.)
M&I Contractor	A public water agency that has contracted with DWR for the delivery of SWP water for "Municipal and Manufacturing Use", as defined in the contractor's Water Supply Contract. M&I Contractors can use SWP water for purposes other than municipal and manufacturing uses. (DWR 1962.)
multiple dry year	For purposes of analyzing water supplies in the EIR, three hydrologic conditions were identified and evaluated: average year, single dry year and multiple dry year. The multiple dry year represents the amount of water available to the Contractor over the four consecutive years drought years of 1988 to 1991, based on the DWRSIM model results.
percolation	The vertical movement of water within the soil.

reliability	Water supply reliability or reliability refers to the amount of water that a Contractor can anticipate to be delivered at a specific place and time (DWR 2003b). Water supply reliability indicates a particular amount of water that can be delivered with a certain numerical frequency (e.g., the amount that can be delivered 1 in 10 years, or 10 percent of the time, etc.; DWR 2003b).
runoff	Rainfall or snow melt which is not absorbed by soil, evaporated, or transpired by plants, but finds its way into streams as surface flow.
scheduled surplus water	Water that DWR determined to be available, in addition to Table A supplies, which was scheduled for delivery throughout the year (in the same manner as Table A supplies). This water was generally available only during the early years of the SWP (when Contractor demands were low).
single dry year	For purposes of analyzing water supplies in the EIR, three hydrologic conditions were identified and evaluated: average year, single dry year and multiple dry year. The single dry year represents the amount of water available to the Contractor in the single year with the lowest total SWP deliveries, based on the DWRSIM model results, which was 1977. The single dry year is considered to be a worst-case scenario, with a probability of occurrence of once in 73 years, or about 1.4 percent of the time.
subsidence	Subsidence is the sinking and settling of surface sediment commonly as a result of an overdrawn water table or oil and gas over-development.
surplus water	SWP water that can be made available to Contractors when water and capacity are available in excess of SWP storage needs and Table A supplies. Note that surplus water terminology changed with implementation of the Monterey Amendment. Prior to the Monterey Amendment, surplus water was referred to as scheduled or unscheduled. With implementation of the Monterey Amendment, the category of scheduled surplus water was deleted and what was unscheduled surplus water is now referred to as Article 21 water. (DWR 1962; DWR 1995.)
SWP allocation or allocation	The percent of Table A amount, as determined by DWR, that each SWP Contractor can receive in any one year based on that year's supply availability and Contractor requests.
Table A amount	A term used in the Water Supply Contracts. The "Table A Amount" is the annual maximum amount of water to which a

	SWP Contractor has a contract right, and is specified in Table A of each Contractor's Water Supply Contract. The Table A Amount was previously referred to as "entitlement."
Table A water	SWP water allocated to a Contractor pursuant to its annual request for SWP water.
tributary	River or stream flowing into a larger river or stream.
Turnback Pool water	Water sold or purchased through the SWP Turnback Pool. The Turnback Pool is a program in which Contractors with allocated Table A supplies that are in excess of their needs in a given year may turn back that excess supply for purchase by other Contractors that need additional supplies that year. The Turnback Pool can make water available in all types of hydrologic years, although there is generally less excess water turned back in dry years.
unscheduled surplus water	Water that DWR made available when water and capacity were available in excess of SWP storage needs and Table A supplies. This water was only available for limited time periods, generally only in the winter or early spring when Contractors demands are low, and only under specific conditions that do not occur on an annual basis. This is the same as Article 21 water, which replaced this category of surplus as part of the Monterey Amendment.
User Input Program	A program implemented by the WRMWSD that allows water users within the district to deliver water into the WRMWSD distribution systems. The water user is then credited with an equal amount of water, less any losses, to be delivered to the user by WRMWSD within the same calendar year.
watershed	The drainage area upstream of a specified point on a stream.
Water Supply Contracts	Contracts between DWR and individual urban and agricultural public water agencies for the delivery of SWP water. (DWR 1962.)

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Years of Experience: 14 (Other Firms - 9)

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OTHER FIRMS

Nancy Clemm, P.E., Engineer, Consultant

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Appendix A

Notice of Preparation and Comments Received

NOTICE OF PREPARATION

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

PROJECT TITLE: Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-feet of State Water Project Table A Amount from Kern County Water Agency

LEAD AGENCY: Castaic Lake Water Agency

The proposed project is the transfer of 41,000 acre-feet (AF) of State Water Project (SWP) Table A amount from Kern County Water Agency (KCWA), and its member district the Wheeler Ridge-Maricopa Water Storage District (WRMWSD), to the Castaic Lake Water Agency (CLWA). The proposed project also establishes the right to use the 41,000 AF as part of CLWA's SWP Table A amount of 95,200 AF pursuant to a Trial Court judgment on remand described below. Also, the 41,000 AF has been delivered to CLWA from KCWA through agreements including KCWA and its member district, the WRMWSD, as well as the California Department of Water Resources (DWR). The proposed project also includes possession of SWP contractual rights that provide a means of water storage and delivery of water associated with the Table A amount to CLWA. The proposed project results in a total CLWA SWP Table A amount of 95,200 AF. The SWP water is being transported from points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The proposed project does not include the construction of any additional SWP facilities.

CLWA's prior environmental review of the project, the *Supplemental Water Project Environmental Impact Report* ("CLWA's 1999 EIR", State Clearinghouse No. 98041127), analyzing CLWA's Agreement ("Agreement") to transfer the 41,000 AF of SWP Table A amount, was ordered decertified by the Court of Appeal in January of 2002. *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal. App. 3d 1373 ("*Friends*"). The decision in *Friends* occurred because an EIR on which the CLWA's 1999 EIR has been tiered was itself ordered decertified as a result of an appellate court decision issued while *Friends* was on appeal. "All other contentions" concerning CLWA's 1999 EIR were found to be "without merit". The Court of Appeal specifically ordered the Trial Court to "issue a writ of mandate vacating the certification of the EIR", and to "retain jurisdiction until [CLWA] certifies an EIR complying with CEQA [the California Environmental Quality Act]," and "consider such orders it deems appropriate under Section 21168.9 [of the Public Resources Code]." The CLWA Board of Directors decertified CLWA's 1999 EIR on November 27, 2002.

On remand, the Trial Court refused to invalidate the Agreement, maintained its jurisdiction over the matter, and authorized the CLWA to utilize "any of the 41,000 AFY [acre-feet per year]," albeit, with certain limitations:

"Respondent [the CLWA] will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper."

The above Order was issued without prejudice to a renewed request by the Petitioner to invalidate the Agreement. Pursuant to the Trial Court's Order, the EIR will contain a complete no project alternative analysis pursuant to the requirements of the CEQA Guidelines Section 15126.6(e).

The Agreement has been approved by KCWA, WRMWSD and CLWA, as well as DWR. WRMWSD is the KCWA member district providing this Table A amount.

The 1998 factual baseline utilized in the CLWA 1999 EIR must be combined with new material information that reflects environmental conditions that may have changed since 1998, which will allow informed and reasoned decision-making by the lead agency, other public agencies, and the general public. New material information is noted in the various sections of Attachment 1 to the Notice of Preparation (NOP), and where appropriate will be expanded and included in the EIR.

Attachment 1 describes the proposed project, the project location, and provides additional information on the types of impacts that may occur as a result of the implementation of the proposed project. CLWA will be the Lead Agency under CEQA, and will prepare an Environmental Impact Report (EIR) for the proposed project. CLWA is requesting comments from interested parties regarding the scope and content of the EIR.

A scoping meeting will be held on Monday, February 10, 2003 at 7:00 p.m. at the CLWA offices located at 27234 Bouquet Canyon Road in Santa Clarita. The meeting will provide an opportunity for agencies and the public to comment on the scope and content of the EIR. Due to the time limits mandated by State law, comments must be received at the earliest possible date, ***but not later than 30 days*** after receipt of this notice. Please send your comments to:

Castaic Lake Water Agency
Attention: Dan Masnada, General Manager
27234 Bouquet Canyon Road
Santa Clarita, CA 91350-2173
Phone: 661-297-1600

January 22, 2003
Date

Dan Masnada
General Manager, Castaic Lake Water Agency

ATTACHMENT 1

PROJECT DESCRIPTION

The proposed project is the transfer of 41,000 acre-feet (AF) of State Water Project (SWP) Table A amount[1] from Kern County Water Agency (KCWA), and its member district the Wheeler Ridge-Maricopa Water Storage District (WRMWSD), to the Castaic Lake Water Agency (CLWA). The proposed project also establishes the right to use the 41,000 AF as part of CLWA's SWP Table A amount of 95,200 AF pursuant to a Trial Court judgment on remand described below. Also, the 41,000 AF has been delivered to CLWA from KCWA through agreements including KCWA and its member district, the WRMWSD, as well as the California Department of Water Resources (DWR). The proposed project also includes possession of SWP contractual rights that provide a means of water storage and delivery of water associated with the Table A amount to CLWA. The proposed project results in a total CLWA SWP Table A amount of 95,200 AF. The SWP water is being transported from points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The proposed project does not include the construction of any additional SWP facilities.

CLWA's prior environmental review of the project, the *Supplemental Water Project Environmental Impact Report* ("CLWA's 1999 EIR", State Clearinghouse No. 98041127), analyzing CLWA's Agreement ("Agreement") to transfer the 41,000 AF of SWP Table A amount, was ordered decertified by the Court of Appeal in January of 2002. *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal. App. 3d 1373 ("*Friends*"). The decision in *Friends* occurred because an EIR on which the CLWA's 1999 EIR has been tiered was itself ordered decertified as a result of an appellate court decision issued while *Friends* was on appeal. "All other contentions" concerning CLWA's 1999 EIR were found to be "without merit". The Court of Appeal specifically ordered the Trial Court to "issue a writ of mandate vacating the certification of the EIR", and to "retain jurisdiction until [CLWA] certifies an EIR complying with CEQA [the California Environmental Quality Act]," and "consider such orders it deems appropriate under Section 21168.9 [of the Public Resources Code]." The CLWA Board of Directors decertified CLWA's 1999 EIR on November 27, 2002.

On remand, the Trial Court refused to invalidate the Agreement, maintained its jurisdiction over the matter, and authorized the CLWA to utilize "any of the 41,000 AFY [acre-feet per year]," albeit, with certain limitations:

> "Respondent [the CLWA] will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper."

The above Order was issued without prejudice to a renewed request by the Petitioner to invalidate the Agreement. Pursuant to the Trial Court's Order, the EIR will contain a complete

1. "Table A" is a term used in the SWP Water Supply Contracts. The "Table A amount" is the amount of water to which a SWP Contractor is contractually entitled, and is specified in Table A to each Contractor's Water Supply Contract. (The Table A amount was previously referred to as "entitlement".) However, the amount of water actually available for delivery in any year may be an amount less than the Contractor's Table A amount due to hydrology and a number of other factors.

no project alternative analysis pursuant to the requirements of the CEQA Guidelines Section 15126.6(e).

The Agreement has been approved by KCWA, WRMWSD and CLWA, as well as DWR. WRMWSD is the KCWA member district providing this Table A amount.

CLWA will be, and is the proper lead agency for preparation of the EIR. CLWA has the principle responsibility for carrying out and implementing the proposed project since 1) a substantial portion of the proposed project occurs within the CLWA's jurisdiction and substantially affects the CLWA, 2) CLWA has been the major proponent of the project with the KCWA and WRMWSD and has assumed the primary task of effectuating the agreement, 3) CLWA has the expertise for implementing the proposed project, and 4) the proposed project, although involving SWP facilities, only concerns three agencies (CLWA, KCWA and WRMWSD) within a limited geographic area and does not implicate the entire statewide water rights or supply framework.

PROJECT LOCATION

The proposed project would utilize existing SWP facilities and could affect environmental resources in the CLWA, KCWA, and WRMWSD service areas (refer to Figure 1) as well as environmental resources associated with selected SWP facilities. The CLWA service area comprises approximately 195 square miles of land in northwestern Los Angeles County and eastern Ventura County. The KCWA service area includes all of the lands within Kern County, approximately 8,064 square miles. The WRMWSD service area comprises approximately 228 square miles of land in southern Kern County. The potentially affected SWP facilities include those SWP facilities that convey water to either CLWA or WRMWSD and include SWP facilities from the south Sacramento-San Joaquin Delta (Delta) facilities to Castaic Lake, including the California Aqueduct and associated pumping, storage and affected turnout facilities, along with San Luis Reservoir (refer to Figure 2). These potentially affected SWP facilities are collectively referred to as "SWP and associated facilities" within this Attachment.

BACKGROUND AND ENVIRONMENTAL SETTING

Castaic Lake Water Agency - CLWA is a special district water agency created by the California Legislature in 1962 to acquire and distribute SWP water. CLWA currently holds contractual rights to delivery of water from the California SWP and contains incorporated and unincorporated areas in, or adjacent to, the Santa Clarita Valley area of Los Angeles County and also extends into eastern Ventura County. Elevations in the service area range from approximately 800 feet to in excess of 3,000 feet above sea level. Land use in the service area ranges from the urbanized environment of the Santa Clarita Valley (including the City of Santa Clarita and several developed, unincorporated communities in northern Los Angeles County) to the undeveloped environment of the eastern Santa Susana and western San Gabriel Mountains. Interstate Highway 5 and California State Routes 14 and 126 provide regional access to the Santa Clarita Valley. The population of the CLWA service area was estimated at approximately 190,000 persons in 2000 based on U.S. Census Bureau data. Substantial portions of the CLWA service area also contain ecologically important vegetation and wildlife habitats including sensitive plant and animal species. Major vegetation/habitat types include oak woodlands, chaparral, coastal and/or

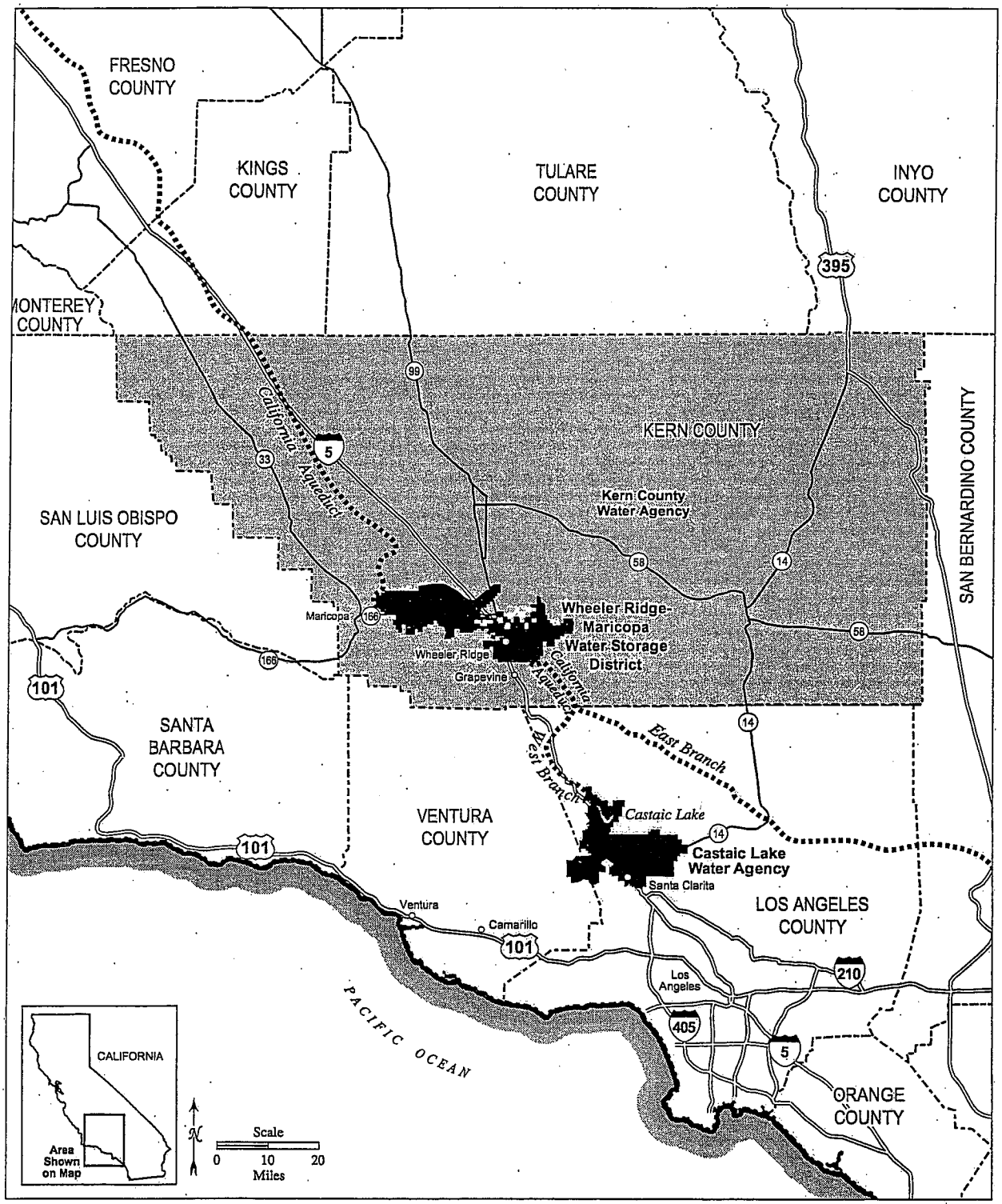
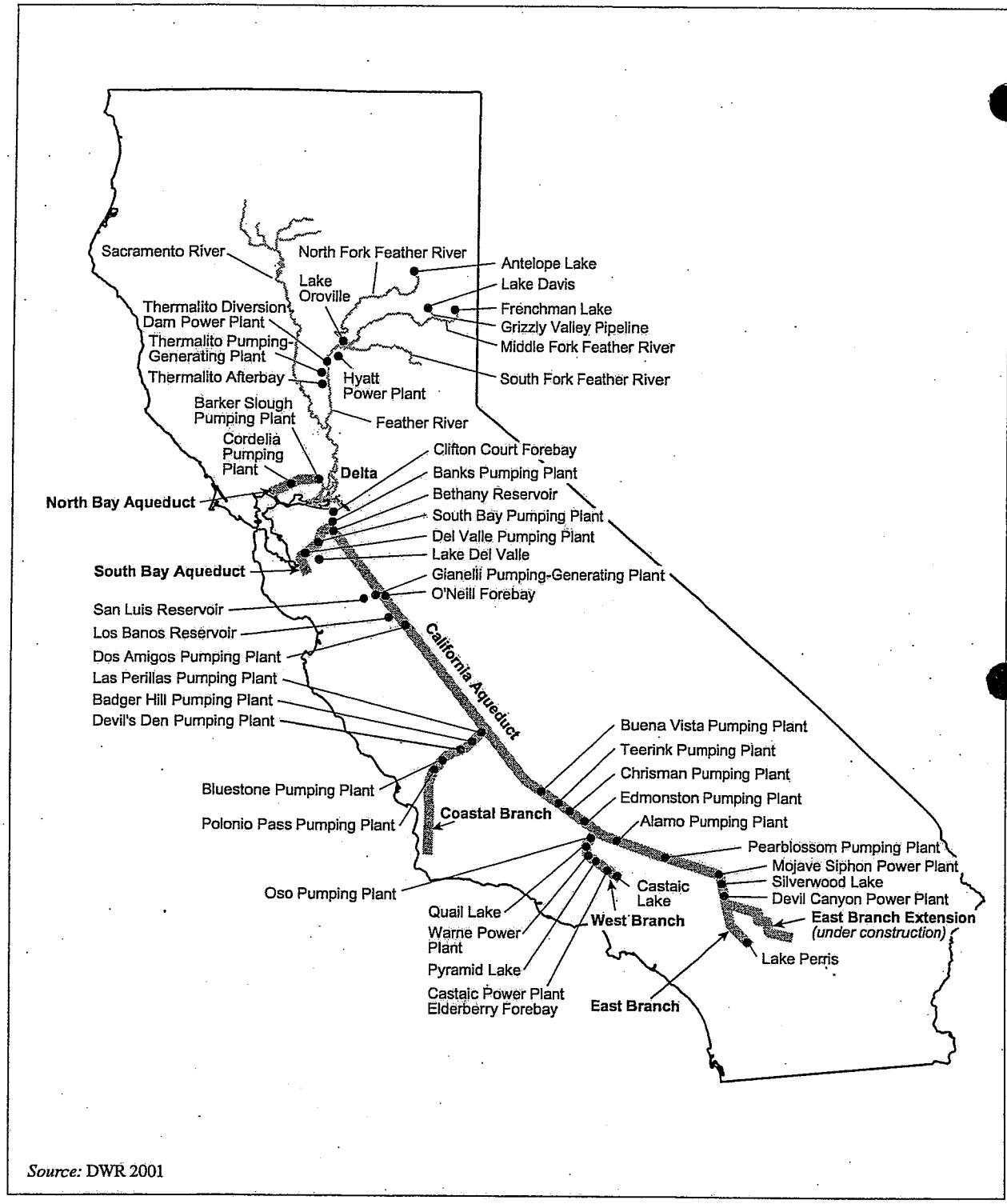


Figure 1. Regional Setting Including Kern County Water Agency, Wheeler Ridge-Maricopa Water Storage District, and Castaic Lake Water Agency Service Areas



Source: DWR 2001

Figure 2. Primary SWP Facilities

Riversidean (Venturan) sage scrub, non-native grassland, riparian scrub, and riparian woodlands. In addition, Castaic Lake, Castaic Lagoon, and limited areas along the Santa Clara River provide open water habitat. The Santa Clara River is a regionally significant habitat for native fish and other wildlife. The CLWA service area contains several Significant Ecological Areas designated for various sorts of protection by Los Angeles County.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - KCWA was created by the California Legislature in 1961 to secure and supply water to its local member districts in Kern County. In 1998, KCWA, together with its 14 member water districts, including WRMWSD, held approximately 1,088,000 AF of SWP contractual rights. KCWA serves municipal, industrial and agricultural water users in Kern County.

The KCWA service area contains primarily agricultural lands with some oil, urban and industrial development. Urban and industrial development is concentrated within the metropolitan Bakersfield area and rural communities are scattered throughout the service area. In 2000, the population of Kern County was 661,645 persons with approximately 231,560 housing units. The KCWA service area includes areas within the southern San Joaquin Valley, Tehachapi Mountain Range, Sierra Nevada Mountain Range, and the Antelope Valley. The EIR will primarily focus on the KCWA service area within the San Joaquin Valley; although, where appropriate, other areas will be discussed. Lands which are no longer subjected to irrigation support a grassland community of introduced plants such as red brome (*Bromus madritensis rubens*), common foxtail (*Hordeum glaucum*), wild oats (*Avena fatua*), and thistles or remnant grains from previous farming. Riparian, wetland and open water habitats are limited to short stretches along intermittent or ephemeral stream channels, agricultural ponds and drainage ditches, and along the California Aqueduct. The KCWA service area supports a variety of sensitive plant and animal species including, although not limited to, the Bakersfield smallscale (*Atriplex tularensis*), Bakersfield cactus (*Opuntia basilaris* var. *treleasei*), Giant kangaroo rat (*Dipodomys ingens*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), Blunt-nosed leopard lizard (*Gambelia sila*), and the San Joaquin kit fox (*Vulpes macrotis mutica*). Sensitive species within the KCWA service area will be further discussed in the EIR.

WRMWSD was formed in 1959, by an election of landowners as provided by Division 14 of the California Water Code. The service area mostly occupies the valley floor and smooth sloping foothill lands at the southern apex of the San Joaquin Valley between the Coast Mountain Range to the west and the Tehachapi Mountain Range to the south and east. The WRMWSD service area consists predominantly of agricultural lands, although small areas of industrial development and the unincorporated community of Lakeview are within the service area, along with the town site of Wheeler Ridge. Based on U.S. Census Bureau data, in 2000, the population of the WRMWSD service area was estimated to be 2,854 persons, or less than one percent of the population of Kern County. Agricultural production in WRMWSD service area includes nut orchards, grains, cotton, mixed produce and vineyards. Portions of the service area include fallowed lands, and some agricultural lands are also unplanted on a rotational basis as a part of normal agricultural practices. Other portions of the service area include fairly extensive areas of scrub vegetation and other plant and wildlife species as described above with respect to the KCWA service area. In addition, the WRMWSD service area supports a variety of sensitive plant and animal species including the species identified above with respect to the KCWA

service area. Sensitive species within the WRMWSD service area will be further discussed in the EIR.

WRMWSD obtains its water supplies from the SWP, through contract with KCWA, other surface water sources and groundwater sources, and delivers water to agricultural and industrial users within its service area. WRMWSD's contract right to SWP water through KCWA was approximately 238,000 AF in 1998. The WRMWSD also participates in groundwater recharge programs and groundwater banking outside of the service area.

State Water Project and Associated Facilities - The SWP is a large water supply, storage and distribution system authorized by an act of the California State Legislature in 1959. Today, the SWP includes 28 storage facilities, reservoirs and lakes; 20 pumping plants; six pumping-generating plants and hydroelectric power plants; and about 660 miles of aqueducts and pipelines. 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, the Central Coast, and Southern California. The SWP provides supplemental water to approximately 22 million persons and 750,000 acres of farmland. In addition to its primary purpose, the SWP is also operated to assist in the control of Feather River floodwaters, and to provide recreation, generate energy, and enhance fish and wildlife habitats.

The primary water source for the SWP is within the drainage of the Feather River, a tributary of the Sacramento River. Runoff released from Oroville Dam in Butte County flows down natural channels to the Delta. In the southern Delta, water is pumped from the Clifton Court Forebay by the Harvey O. Banks Delta Pumping Plant (Banks Pumping Plant) into the 444-mile-long California Aqueduct. The California Aqueduct travels along the west side of the San Joaquin Valley. The California Aqueduct conveys water to the primarily agricultural users in the San Joaquin Valley and the primarily urban regions of the San Francisco Bay Area, the Central Coast, and Southern California. Water from the California Aqueduct is delivered directly to contractors within the San Joaquin Valley, including WRMWSD and the other member districts of the KCWA, is stored in San Luis Reservoir, or continues down the aqueduct for delivery and/or storage in the Southern California area. (San Luis Reservoir, located approximately 60 miles south of the Banks Pumping Plant, is an off-stream storage reservoir for both SWP and Central Valley Project[2] water.) The California Aqueduct traverses the west side of the San Joaquin Valley through a series of four pumping plants before reaching the Edmonston Pumping Plant. The Edmonston Pumping Plant lifts the California Aqueduct water 1,926 feet to the Antelope Valley, where the California Aqueduct divides into the East and West Branches. Water intended for use in Southern California is conveyed through the West Branch to Castaic Lake and through the East Branch to Lake Perris.

OTHER PROJECTS

In addition to the proposed project, CLWA is also planning or considering several other separate projects that would be analyzed further in the EIR if they would create cumulative environmental impacts:

2. The Central Valley Project is a federal water supply project that supplies water to users in Northern California and the San Joaquin Valley.

- An EIR addressing the proposed transfer of up to 16,000 AF of SWP Table A amount from the KCWA and its member district, the Berrenda Mesa Water District (BMWD) to CLWA. The 16,000 AF project would increase CLWA's total SWP Table A amount from its current level of 95,200 AF to up to 111,200 AF and would also involve annexing lands into CLWA's service area. The EIR for the 16,000 AF project will also address establishment of a program to create a possible mechanism for new development to comply with laws requiring specified showings of long-term water availability.

- An EIR for the Earl Schmidt Filtration Plant (ESFP) Expansion project. The ESFP project would increase the plant's raw water treatment capacity from 33.6 million gallons per day to 56 million gallons per day, replace an existing raw water pumping station, and construct treatment process upgrades to meet existing and anticipated water treatment regulatory requirements. The ESFP project is expected to cover a portion of the increased demands through 2010, based on the adopted Los Angeles County growth forecast. CLWA prepared a NOP in June 2002 for the ESFP project.

- CLWA currently is in the process of engineering the Honby Extension/Storage Reservoir Project ("Honby Extension"), approved by CLWA in 1999. An existing Mitigated Negative Declaration (prepared in December 1998 and adopted by CLWA in early 1999 with Board Resolution No. 2034) titled, *Initial Study and Mitigated Negative Declaration for the Extension of Imported Water Transmission Systems in the Castaic Lake Water Agency Service Area*) addressed the Honby Extension and capital facilities. The Honby Extension project is a 33-inch, approximately 30,000 foot long waterline, originating near the intersection of Honby Avenue and Santa Clara Street where a new pump station also will be constructed. The pipeline will travel from the new pump station easterly and southerly, terminating in a new storage reservoir west of Rolling Hills Avenue and Warmuth Road.

- The CLWA Board has approved an Initial Study, Negative Declaration, and Notice of Determination for CLWA's 2002 Groundwater Banking Project. CLWA will temporarily store, for up to 10 years, up to 24,000 AF of its 2002 SWP water that exceeds the 2002 demand, for later withdrawal and delivery to the CLWA service area. The 24,000 AF would be placed in storage during 2002 in the Semitropic Water Storage District (SWSD) Groundwater Banking Project. SWSD would store the delivered water using its existing groundwater banking facilities or through in lieu storage, and would withdraw and return the water to CLWA within a ten-year period, in one or more future years in which CLWA's demand exceed supply.

- CLWA is considering a proposal to deliver 6,786 AF of water to United Water Conservation District via Pyramid Lake and Piru Creek. CLWA will undertake the appropriate environmental review prior to implementation of the project.

- The CLWA Board of Directors may, in the future, consider adoption of a recycled water master plan, which would provide for approximately 17,000 AF of recycled water to be used in lieu of treated potable water.

The CLWA Board of Directors may, in the future, consider adopting other water management actions including the construction of additional facilities, which, if appropriate, would be

considered in the cumulative impacts section of the EIR. Projects other than those for which CLWA is the proponent, including projects within the KCWA and WRMWSD service areas, or projects where KCWA and WRMWSD are the project proponent, and other projects in the CLWA service area, would also be identified in the EIR and considered in the cumulative impacts section of the EIR, as required by CEQA. In addition, actions occurring in the Delta area, including but not limited to the CALFED program, may affect the SWP and would be addressed in the cumulative impacts section of the EIR.

As noted above, the CLWA is considering and/or implementing several other projects, including the transfer of 16,000 AF of SWP Table A amount from BMWD to the CLWA and the expansion of the ESFP. While these other projects contribute to CLWA's overall water management, these projects are proceeding separately since the completion of each project does not depend on any other project being completed, and each project would cause unique environmental impacts. The separate projects do not constitute parts of phases of a larger project since each project involves its own timeframe and serves differing purposes. Thus, unlike situations where the larger project's purpose would be compromised without the completion of related projects, none of the projects' purposes here would be compromised by the failure of other projects. For instance, the establishment of the right to use the 41,000 AF as part of CLWA's SWP Table A amount of 95,200 AF does not depend on whether the ESFP expansion will be completed or completed within the currently anticipated timeframe.

Nevertheless, the proposed project EIR will examine the cumulative impacts of the proposed project in combination with other projects, including the 16,000 AF of SWP Table A transfer and the ESFP expansion project. The cumulative impact analysis will examine how each project's potential individual environmental impacts may be greater than the sum of its parts, and will provide possible mitigation measures to address these significant cumulative impacts, if any. Thus, the environmental impacts of the proposed project along with the other projects proposed by CLWA will not be determined in isolation.

ENVIRONMENTAL IMPACTS

Implementation of the proposed project would have the potential to have direct and indirect impacts on the physical environment within and adjacent to SWP facilities, and the service areas of KCWA, WRMWSD, and CLWA. The following discussions summarize the components of the proposed project that could affect environmental resources and potential impacts of the proposed project to environmental resources.

Castaic Lake Water Agency – Implementation of the proposed project would not directly require the construction of new CLWA facilities or modification of existing CLWA facilities, nor would it directly change the existing operation of CLWA facilities. Implementation of the proposed project would not directly require land disturbance nor would it directly change the existing land uses within the CLWA service area. Potential impacts of the proposed project within the CLWA service area would generally be associated with indirect effects of an increased water supply for users within the service area.

Substantial growth is expected in the Santa Clarita Valley. Future land use changes and/or new developments within the CLWA service area that could be implemented as a result of the

proposed project may result in potentially significant indirect impacts to environmental resources. Indirect impacts of the proposed project within the CLWA service area would result from land use changes, new developments, and associated population growth. These indirect, growth-related impacts of the proposed project are discussed below and will be addressed in the EIR.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities.

WRMWSD obtains its water supplies from the SWP, other surface water sources and groundwater sources, and delivers water to agricultural and industrial users within its service area. The WRMWSD also participates in groundwater recharge programs. Some of the landowners within the WRMWSD service area have executed long-term contracts with WRMWSD for the delivery of surface water, including SWP water, by the WRMWSD distribution system. These lands are collectively referred to as "contract lands" and principally rely on imported surface water. Lands in the service area that do not hold long-term contracts for surface water or "non-contract lands" principally rely on groundwater supplies to meet water demands. In addition, certain non-contract lands within the service area (generally those that have historically held contracts) can be delivered surface water, including SWP water, when available, utilizing the existing WRMWSD distribution system.

Since 1990, WRMWSD has not delivered its full pre-project SWP Table A amount (238,000 AF), nor has there been demand within the contract lands for this amount of water. In addition, from 1990 to 2000, the demand within the contract lands has not exceeded 197,000 AF (the amount of WRMWSD's SWP Table A amount with implementation of the proposed project). From 1990 to 2000, the demand within the contract lands has averaged approximately 156,100 AF, with a maximum of approximately 178,400 in 1998 and a minimum of approximately 112,600 AF in 1991. As previously noted, the WRMWSD participates in other water management actions, including groundwater recharge programs within the service area and groundwater banking programs outside of the service area. These water management actions are intended to supply the WRMWSD (or landowners within the WRMWSD) with additional water supplies when SWP supplies are insufficient to meet demands. WRMWSD estimates that it can deliver approximately 100,000 AF in four out of seven consecutive drought years through these other water management actions.

In summary, a combination of factors, which include varied water supply sources, historic water demand that is less than the amount of WRMWSD's Table A amount even following implementation of the proposed project, and landowners' flexibility to manage agricultural lands differently from year to year, indicate that implementation of the proposed project would result in less than significant direct and indirect impacts within the WRMWSD service area. As a result of long-term agricultural decisions and other water management practices used by farmers within the WRMWSD service area and by WRMWSD, implementation of the proposed project would not be expected to materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would the proposed project change existing land uses within the WRMWSD service area.

Water in WRMWSD service area would continue to be made available from a combination of historic and current water management actions including, historic modification of surface water supply contracts, improved irrigation efficiency, historic changes in water supply management, and continuation of agricultural management approaches. A variety of factors, including the cost and availability of different water sources, the anticipated crop market value, anticipated or existing crop subsidies, and other factors (such as labor cost, regulation of the use of certain chemicals, etc.) are considered in the determination to plant certain crops.

State Water Project and Associated Facilities - Implementation of the proposed project would not require the construction or modification of existing SWP facilities, nor would implementation of the proposed project substantially change the current operation of the SWP and associated facilities. Implementation of the proposed project would not change the operating criteria[3] of the SWP and associated facilities.

The proposed project would result in a slight change in the timing of deliveries associated with the 41,000 AF of SWP Table A amount, although the proposed project would not affect the total amount of supply available. The total amount of SWP supply available is a function of SWP diversions from the Delta (governed almost exclusively by hydrology, water quality standards in the Delta and other operational criteria), and the operation of San Luis Reservoir (operated to store water in months when Delta diversions exceed demands, and to provide supplemental supplies when Delta diversions are less than demands). As the proposed project would not result in changes to the SWP operating criteria, the amount and timing of Delta diversions would not change with implementation of the proposed project.

The proposed project would change the amount of water transported within the SWP facilities to the CLWA. In addition, implementation of the proposed project would slightly change the timing of storage of water associated with the project in San Luis Reservoir and Castaic Lake. Overall, implementation of the proposed project would transfer the 41,000 AF of Table A amount and water associated with this amount from WRMWSD to CLWA and would not substantially change the operations of the SWP.

Therefore, implementation of the proposed project is not expected to have significant direct or indirect impacts to environmental resources within the SWP and associated facilities. Increased use of energy for pumping water would occur south of the San Luis Reservoir but would be partially offset by additional power generation within this portion of the SWP system.

Environmental Resource Impacts

Direct and indirect impacts that may result from implementation of the proposed project are addressed below by environmental resource area and geographic area. Direct impacts are those impacts caused by the project and that occur at the same time and place. Indirect impacts are those changes in the environment not immediately related to the project, but caused by the project, and may be later in time or farther removed in distance, but are still reasonably

3. The operating criteria of the SWP are the rules, regulations and other policies under which DWR operates SWP facilities. Operating criteria include, although are not limited to, environmental regulations and operating criteria for diversions from the Sacramento-San Joaquin Delta, operations of Oroville and San Luis Reservoirs, and criteria for terminal reservoirs such as Castaic Lake.

foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. State CEQA Guidelines Section 15358.

Pursuant to CEQA, an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This information constitutes the "baseline" and it is sometimes necessary to provide more recent baseline information in order to meaningfully review a project's environmental impacts. Since the factual baseline for this project was prepared in 1998, the 1998 baseline must be combined with new material information that reflects environmental conditions that may have changed since 1998, which will allow informed and reasoned decision-making by the lead agency, other public agencies, and the general public. New material information is noted in the various sections of this Attachment, and where appropriate will be expanded and included in the EIR.

Aesthetic Impacts

Direct Impacts

Castaic Lake Water Agency - The Angeles National Forest, the Los Padres National Forest, and their ridgelines provide a visual backdrop for much of the Santa Clarita Valley. The Santa Clara River, traversing the City of Santa Clarita and the Santa Clarita Valley, is another important visual element. The topography of the Santa Clarita Valley is varied with numerous canyons and waterways. Within this natural setting, several unincorporated communities developed, which are not part of the City of Santa Clarita. Implementation of the proposed project would not require land disturbance nor would it have a direct impact on the existing land uses within the CLWA service area or cause other changes that would directly affect aesthetic resources including scenic vistas, scenic resources and visual character. In addition, implementation of the proposed project would not create or increase light or glare. As identified within the discussion of the SWP and associated facilities below, changes in the timing of SWP deliveries to Castaic Lake would not be expected to change the visual character of the lake or surrounding area. Therefore, no direct impacts to aesthetic resources within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Kern County designates most of the county as having a visual rating of Class II, meaning that the area is excellent visual space. The foothills provide a dramatic backdrop for the area and can be clearly viewed throughout the county due to the flat plains and vast open space. The undeveloped lands and agricultural operations contribute to the rural character typical of the San Joaquin Valley. Implementation of the proposed project would not materially affect irrigated acreage in the WRMWSD service area served by SWP water on an average annual basis, nor would it change existing land uses within the KCWA or WRMWSD service areas. No scenic vistas or scenic resources would therefore be adversely affected. The visual character of the area would remain rural and agricultural. In addition, implementation of the proposed project would not create or increase light or glare. Therefore, implementation of the proposed project is not

anticipated to result in direct impacts to aesthetic resources within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - From the southern Delta facilities to the Tehachapi Mountain Range, the undeveloped lands and agricultural operations contribute to the rural character that is typical of the San Joaquin Valley. Throughout the valley, the foothill areas and associated Coast Mountain Range to the west and Sierra Nevada Mountain Range to the east provide a dramatic backdrop. These foothill and mountain range areas can be viewed throughout the valley due to the relatively flat plains and vast open space. Within the Tehachapi Mountain Range to the SWP terminal reservoir at Castaic Lake, the visual resources of the area are similar to those described for the CLWA service area above. Minor changes in SWP storage and transport amounts would not be expected to have any significant adverse impacts to scenic vistas, scenic resources, and visual character. In addition, implementation of the proposed project would not create or increase light or glare. Therefore, no direct impacts are anticipated to occur to aesthetic resources within the SWP and associated facilities from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to aesthetic resources due to potential land use changes as a result of development in the CLWA service area that may be accommodated by an increased water supply. The potential development in the CLWA service area that may be supported by the proposed project could involve substantial alteration of topography, removal of an unknown number of trees, and construction of residences and other structures that may adversely affect scenic vistas and scenic resources. As a result, views from roadways and other developed and undeveloped areas could be altered. The visual alteration would be primarily a change of visual character from a natural landscape to a manmade or urban landscape. The project could cause and/or result in an increase in the amount of glare and night lighting in a presently undeveloped area. These indirect impacts are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas or other changes that could affect aesthetic resources including scenic vistas, scenic resources, visual character, or light and glare. Therefore, indirect impacts to aesthetic resources within the KCWA and WRMWSD service areas are not anticipated to result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, no indirect impacts to aesthetic resources including scenic vistas, scenic resources, visual character, or light and glare are anticipated to result from implementation of the proposed project.

Agricultural Impacts

Direct Impacts

Castaic Lake Water Agency - Agricultural and grazing areas within the CLWA service area are predominately located in the western portion of the service area along the State Route 126 corridor and adjacent hills in both Los Angeles and Ventura counties. Approximately 3,250 acres of active irrigated agriculture exist within the CLWA service area. Los Angeles County does not participate in the Williamson Act program. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. The proposed project would not directly convert agricultural areas to other non-agricultural uses, nor would it directly conflict with zoning for agricultural use or conflict with a Williamson Act contract. Therefore, no direct impacts to agricultural resources within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - In 1998, Kern County had approximately 1,705,730 acres enrolled in Williamson Act contracts, or approximately 32 percent of the county area, and approximately 10 percent of the statewide Williamson Act lands (Department of Conservation 1998). In 1998, the WRMWSD service area contained approximately 146,620 acres of land (WRMWSD 2001). Land uses included the following: farmed area (94,269 acres or 64.3 percent); fallow lands (17,979 acres or 12.3 percent); miscellaneous and other lands, defined as developed but non-farmed areas within cultivated lands, such as farm roads, farmsteads, reservoirs, airstrips, cotton gins, tank farms, utility yards, etc. (8,201 acres or 5.6 percent); and native vegetation/non-developed lands (26,171 acres or 17.8 percent) (WRMWSD 2001). As a result of long-term agricultural decisions and other water management practices used by farmers within the WRMWSD service area and by WRMWSD, implementation of the proposed project would not be expected to materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. In addition, the proposed project would not directly convert agricultural areas to other non-agricultural uses, nor would it directly conflict with zoning for agricultural use or conflict with a Williamson Act contract. Implementation of the proposed project would result in the reduction of WRMWSD's SWP Table A amount and therefore, a reduction in the amount of SWP Table A water that could be delivered to the WRMWSD service area. As water in WRMWSD service area would continue to be made available from a combination of historic and current water and agricultural management actions, implementation of the proposed project is anticipated to result in a less than significant impact to agricultural resources within the KCWA and WRMWSD service areas. Because all potential agricultural impacts cannot be strictly categorized as either direct or indirect when they relate to potential changes in water supply, agricultural issues in KCWA and WRMWSD are also discussed under the indirect impact section.

State Water Project and Associated Facilities - SWP water is used to irrigate approximately 750,000 acres of farmland with the state. In 1998, the SWP delivered approximately 1,745,000 AF of Table A water, of which, approximately 871,000 AF was delivered to agricultural users (DWR 2001). An additional 10,300 AF of unscheduled (Article 21) water was delivered to agricultural users in 1998 (DWR 2001). Agricultural resources are not specifically associated with the SWP system or its associated facilities. Implementation of the proposed project would not require

the construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities. In addition, implementation of the proposed project would not change the overall SWP supply, but would shift water that could have previously been requested by, and delivered to, WRMWSD to CLWA. The proposed project would not directly convert agricultural areas to other non-agricultural uses, nor would it directly conflict with zoning for agricultural use or conflict with a Williamson Act contract. Therefore, implementation of the proposed project is not anticipated to result in direct impacts to agricultural resources served by the SWP.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to agricultural resources due to potential land use changes as a result of future development in the CLWA service area potentially accommodated as a result of additional water supplies. Future development within the CLWA service area could utilize the additional proposed water supply and may require changes to zoning designations to allow residential, commercial and other uses in areas currently or previously used for agricultural purposes. The potential therefore exists for changes to agricultural lands, agricultural designations or zoning due to development within the CLWA service area and for conversion of Important Farmland designated by the State, which could result in significant impacts.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District – Due to a combination of factors which are discussed in the Environmental Impact section above, and which will be discussed further in the EIR, the project is anticipated to result in a less than significant indirect impact to agricultural resources within the WRMWSD service area. Due to the agricultural nature of the WRMWSD, water users within the service area have substantial flexibility to manage land uses, and therefore, water use, from year to year. A variety of factors, including the cost and availability of different water sources, the anticipated crop market value, anticipated or existing crop subsidies, and other factors (such as labor cost, regulation of the use of certain chemicals, etc.) are considered in the determination to plant certain crops. In addition, as the proposed project would not directly or indirectly result in land use changes within the KCWA or WRMWSD service areas, the proposed project would not convert agricultural areas to other non-agricultural uses, nor would it conflict with zoning for agricultural use or conflict with a Williamson Act contract.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project would not convert agricultural areas to other non-agricultural uses, nor would it conflict with zoning for agricultural use or conflict with a Williamson Act contract. Therefore, no indirect impacts to agricultural resources are anticipated to result from implementation of the proposed project.

Air Quality Impacts

Direct Impacts

Castaic Lake Water Agency - The CLWA service area is located in the Santa Clarita Valley, which is in the northwestern portion of the South Coast Air Basin (SCAB). The area of the SCAB that

encompasses the CLWA service area is presently in "extreme" nonattainment for ozone, and "serious" nonattainment for carbon monoxide and particulate matter less than 10 microns in diameter. The South Coast Air Quality Management District is responsible for regulating emission sources within the SCAB, and has developed the *1997 Air Quality Management Plan* and the *1999 Revised Ozone Plan* to bring the region into attainment of the state and national ambient air quality standards. Implementation of the proposed project would not require construction of facilities, or directly result in land disturbance, nor would it directly change the existing land uses within the CLWA service area or cause other changes that could materially affect air quality. In addition, implementation of the proposed project would not obstruct the implementation of any air quality plan in the SCAB, violate or contribute to the violation of an air quality standard, result in a cumulatively considerable increase of any pollutant for which the SCAB is in nonattainment for, create odors, or result in the exposure of sensitive receptors to substantial pollution concentrations. Therefore, no direct impacts to air quality within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - The San Joaquin Valley floor areas of the KCWA and the WRMWSD are located in the southernmost region of the San Joaquin Valley Air Basin (SJVAB). The Kern County portion of the SJVAB is presently in non-attainment for ozone and particulate matter less than 10 microns in diameter. The San Joaquin Valley Unified Air Pollution Control District is responsible for regulating stationary sources of emissions within the SJVAB, and has developed rules and air quality attainment plans designed to reduce emissions to a level that will bring the region into attainment. With implementation of the proposed project, WRMWSD would continue to make water available from a combination of historic and current water and agricultural management actions within the service area. Implementation of the proposed project is not anticipated to obstruct the implementation of any air quality plan in the SJVAB, violate or contribute to the violation of an air quality standard, result in a cumulatively considerable increase of any pollutant for which the SJVAB is in nonattainment for, create odors, or result in the exposure of sensitive receptors to substantial pollution concentrations. In addition, implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. Therefore, implementation of the proposed project is anticipated to result in a less than significant impact to air quality within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - The California Aqueduct and associated facilities of concern are predominately located within the SCAB and SJVAB. These air basins are discussed above. Implementation of the proposed project would not require the construction or modification of existing SWP facilities, nor would implementation of the proposed project substantially change the current operation of the SWP and associated facilities. In addition, implementation of the proposed project would not change the operating criteria of the SWP and associated facilities. Pumping of water south of the WRMWSD turnouts to CLWA would require additional energy use and could result in increased air emissions caused by increases in energy production or use. Although, power plants providing energy supplies are required to have air quality permits and to mitigate air quality impacts. Implementation of the proposed project would not obstruct the implementation of any air quality plan in the SCAB or the SJVAB, violate or contribute to the violation of an air quality standard, result in a cumulatively considerable increase of any pollutant for which the SCAB or the SJVAB is in nonattainment for,

create odors, or result in the exposure of sensitive receptors to substantial pollution concentrations. Therefore, no direct impacts to air quality are anticipated to result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts on air quality due to potential land use changes as a result of development in the CLWA service area. The potential development in the CLWA service area that may be supported by this project could result in a substantial amount of grading and other construction activities that would create temporary impacts on air quality including construction vehicle emissions and the creation of fugitive dust. Following construction, increased local traffic would substantially increase regional motor vehicle emissions and other emissions related to development of manufacturing, industrial, commercial facilities and infrastructure of various types could occur. These indirect impacts have the potential to obstruct the implementation of any air quality plan in the SCAB, violate or contribute to the violation of an air quality standard, result in a cumulatively considerable increase of any pollutant for which the SCAB is in nonattainment for, create odors, or result in the exposure of sensitive receptors to substantial pollution concentrations, and therefore, are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, no aspect of the proposed project is anticipated to obstruct the implementation of any air quality plan in the SJVAB, violate or contribute to the violation of an air quality standard, result in a cumulatively considerable increase of any pollutant for which the SJVAB is in nonattainment for, create odors, or result in the exposure of sensitive receptors to substantial pollution concentrations. Therefore, indirect impacts to air quality are anticipated to be less than significant as a result of implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, no aspect of the proposed project is anticipated to obstruct the implementation of any air quality plan in the SCAB or the SJVAB, violate or contribute to the violation of an air quality standard, result in a cumulatively considerable increase of any pollutant for which the SCAB or the SJVAB is in nonattainment for, create odors, or result in the exposure of sensitive receptors to substantial pollution concentrations. Therefore, no indirect air quality impacts are anticipated to result from implementation of the proposed project.

Biological Impacts

Direct Impacts

Castaic Lake Water Agency - For the most part, the CLWA service area encompasses the Santa Clara River Valley, the east extension of the Santa Susana Mountains, the westernmost reaches of the San Gabriel Mountains, and the southern slopes of the Sierra Pelona. The principal natural features of the Santa Clarita Valley are the Santa Clara River, Castaic Valley, San Francisquito Canyon, Bouquet Canyon, Placerita Canyon, and Hasley Canyon. Although

substantial portions of the Santa Clarita Valley have been developed, a large portion of the lands within the CLWA service area still supports ecologically important vegetation and wildlife habitats including sensitive plant and animal species. Major vegetation/habitat types include oak woodlands (distinct stands of valley oak [*Quercus lobata*], coast live oak [*Quercus agrifolia*], and interior live oak [*Quercus wislizeni*] can be distinguished), chaparral, coastal and/or Riversidean (Venturan) sage scrub, non-native grassland, riparian scrub (characterized by mulefat and/or shrubby willows), and riparian woodlands (characterized by large willows [*Salix* sp.] and cottonwoods [*Populus fremontii*], including densely forested areas). In addition to the above habitats, there is open water habitat provided by Castaic Lake, Castaic Lagoon, and limited areas along the Santa Clara River. The Santa Clara River is a regionally significant habitat for native fishes and other wildlife.

The CLWA service area contains several Significant Ecological Areas designated for various sorts of protection by Los Angeles County. No habitat conservation plans, natural community conservation plans or similar plans have been adopted in the CLWA service area.

Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area or cause other changes that would create direct impacts to biological resources within the CLWA service area. In addition, implementation of the proposed project would not directly result in habitat modifications including the modification of sensitive habitat types such as riparian or wetland habitats, interfere with the movement or migration of wildlife species, impede the use of wildlife nursery sites, or conflict with local policies and ordinances protecting biological resources. Therefore, no direct impacts to biological resources within the CLWA service area would result from implementation of the proposed project. Castaic Lake is addressed under the discussion of SWP and associated facilities below.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Most of the lands in the KCWA and WRMWSD service areas are cultivated agricultural areas. Lands which are no longer subjected to irrigation support a grassland community of introduced plants such as red brome, common foxtail and wild oats. More recently, non-irrigated lands have more non-native species such as thistles or remnant grains from previous farming. The predominant habitat on lands not cultivated is grassland characterized by introduced annual grasses and forbs (Lower Sonoran grassland [Moe and Twisselmann 1995], California prairie [Williams 1998], or non-native grassland [Holland 1986]). Within the WRMWSD service area, there are also fairly extensive areas of scrub vegetation typically dominated by saltbush (*Atriplex* spp.). Riparian, wetland and open water habitats are limited to short stretches along intermittent or ephemeral stream channels, agricultural ponds and drainage ditches, and along the California Aqueduct. The KCWA and WRMWSD service areas support a variety of sensitive plant and animal species.

Implementation of the proposed project would not directly result in habitat modifications including the modification of sensitive habitat types such as riparian or wetland habitats, interfere with the movement or migration of wildlife species, impede the use of wildlife nursery sites, or conflict with local policies and ordinances protecting biological resources. With implementation of the proposed project, WRMWSD would continue to make water available from a combination of historic and current water and agricultural management actions within

the service area. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area, nor would it change existing land uses within the WRMWSD service area. Therefore, implementation of the proposed project is anticipated to result in a less than significant impact to biological resources within the KCWA and WRMWSD service areas.

The project would not conflict with any natural community conservation plans in the KCWA or WRMWSD service areas, since none have been adopted. A habitat conservation plan is being developed for the San Joaquin Valley floor within Kern County and in the vicinity of Tejon Ranch in the WRMWSD service area. In addition, a habitat conservation plan has been developed for the Bakersfield area. It is not anticipated that the project would conflict with these plans, the status of which would be described in the EIR.

State Water Project and Associated Facilities - The California Aqueduct begins in the southern Delta near the City of Tracy. Within the Delta region, agricultural lands occupy approximately 72 percent of the total land area with grassland and rural, open-water, wetland, and riparian habitats occupying the majority of the remaining area (CALFED 1999). The Delta region provides habitat for numerous sensitive plant communities and special status plant and animal species.

South of the SWP facilities in the Delta, the California Aqueduct traverses predominately the west side of the San Joaquin Valley to the Tehachapi Mountain Range in the southern end of the valley. The dominant land use within the San Joaquin Valley consists of agricultural and agricultural related uses. The aqueduct within the San Joaquin Valley is a concrete lined canal with a few short segments of enclosed pipe, and biological resources within the aqueduct are limited to common fish species, mostly introduced, and a variety of invertebrate species which may occupy the water column. Other upland species and birds may utilize the aqueduct in some locations for drinking water or to forage for fish and invertebrates. At the southern end of the San Joaquin Valley, the open canal structure of the aqueduct changes principally to a buried pipeline, which traverses the Tehachapi Mountains in a southerly direction and eventually empty water into Castaic Lake. No biological resources are associated with the piped portion of the aqueduct because it is a closed system.

San Luis Reservoir was constructed as an off-stream storage reservoir. Water is pumped from the O'Neil Forebay into the main reservoir during the winter and spring. The reservoir supports a large variety of fish and wildlife species, including sensitive species, both within the water column and in the surrounding riparian habitat. The dominant shoreline vegetation of the reservoir is grassland, making up approximately 70 percent of the shoreline. The remaining 30 percent of the shoreline vegetation consists of montane hardwood (USBR 1997).

Castaic Lake is a terminal water storage facility for the SWP located at the confluence of Castaic Creek and Elizabeth Lake Canyon Creek. The lake supports a large variety of fish and wildlife species, including sensitive species, both within the water column and in the surrounding riparian habitat. Adjacent to the lake, vegetation consists of dry upland scrub and chaparral communities on the steep slopes above the water. The steep banks along almost the entire perimeter of the lake and fluctuating water levels prevent the establishment of shoreline vegetation; therefore, there is minimal shoreline and aquatic vegetation associated with the lake.

Scattered willows (*Salix* sp.) and mulefat (*Bacharis salicifolia*) exist in areas with more gradually sloped banks.

Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Due to the variety of water management criteria, and as implementation of the proposed project would deliver water to CLWA that could otherwise have been delivered to WRMWSD, or used in other water management activity within the KCWA or other areas served by the SWP, the total amount of water diverted from the Delta would not change with implementation of the proposed project. Water exportation from the Delta is accomplished while maintaining the Delta water quality standards and other related operating criteria, and implementation of the proposed project would not change these established operating criteria. As is currently the case, runoff would be captured when available and stored in SWP and local facilities, and used to meet SWP demand based on current SWP operating criteria and management practices. Implementation of the proposed project would not change these current operating criteria and management practices. In addition, changes to the timing and amount of water stored in both San Luis Reservoir and Castaic Lake are expected to be minimal and within the historic and current lake level fluctuations. Implementation of the proposed project would not directly result in habitat modifications including the modification of sensitive habitat types such as riparian or wetland habitats, interfere with the movement or migration of wildlife species, impede the use of wildlife nursery sites, conflict with local, regional and state-wide policies and ordinances protecting biological resources, or conflict with an adopted habitat conservation plan or natural community conservation plan. Therefore, implementation of the proposed project is anticipated to result in a less than significant impact to biological resources associated with the SWP and associated facilities.

Indirect Impacts

Castaic Lake Water Agency - Potential urban development within the CLWA service area that may be accommodated by this additional water supply could adversely impact plant and animal communities due to the potential for extensive grading and construction activities, hillside development, and the amount of overall urbanization that could occur. Potential land use changes may result in a substantial adverse affect to sensitive species, result in habitat modifications including the modification of sensitive habitat types such as riparian or wetland habitats, interfere with the movement or migration of wildlife species, impede the use of wildlife nursery sites, and conflict with local policies and ordinances protecting biological resources. The project would not conflict with any habitat conservation plan or natural community conservation plan in the CLWA service area, as none have been adopted. Potential indirect impacts to biological resources that may result from future land use changes are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District – As implementation of the proposed project would not change land use within the KCWA or WRMWSD service areas, the proposed project would not result in habitat modifications including the modification of sensitive habitat types such as riparian or wetland habitats, interfere with the movement or

migration of wildlife species, impede the use of wildlife nursery sites, conflict with local policies and ordinances protecting biological resources including adopted and anticipated habitat conservation plans, or otherwise result in changes that may affect biological resources. Therefore, implementation of the proposed project is anticipated to result in a less than significant indirect impact to biological resources within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities – As implementation of the proposed project would not change the operating criteria of the SWP and associated facilities, implementation of the proposed project would not result in habitat modifications including the modification of sensitive habitat types such as riparian or wetland habitats, interfere with the movement or migration of wildlife species, impede the use of wildlife nursery sites, conflict with local, regional and state-wide policies and ordinances protecting biological resources, or conflict with adopted habitat conservation plans or natural community conservation plans, or otherwise result in changes that may affect biological resources. Any changes in delivery schedules and amounts would be not expected to have indirect impacts on biological resources as changes are expect to be within the current and historic operation of the SWP and associated facilities. Therefore, implementation of the proposed project is anticipated to result in a less than significant indirect impact to biological resources in connection with the SWP and associated facilities.

Cultural Impacts

Direct Impacts

Castaic Lake Water Agency - The CLWA service area is located in Ventura and Los Angeles counties, where at least four distinct ethno-linguistic groups were living at the time of first European contact, including the Tataviam, the Ventureño Chumash, the Emigdiano Chumash, and the Castac Chumash. Native American archaeological sites from various time periods exist within the CLWA service area, especially along the Piru and Castaic drainage systems, at the Vasquez Rocks and Escondido Canyon, and along major ridgelines (Science Applications International Corporation 1998). Historic resources documented in the CLWA service area are usually associated with major routes of travel, water courses, and early homesteading practices in and around Newhall (Scientific Resource Surveys 1988). Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area or cause other direct changes that could affect cultural resources. Nor would implementation of the proposed project cause a change in the significance of a historic or cultural resource, directly destroy a unique paleontological resource or unique geologic feature, or disturb human remains. No direct impacts to cultural resources within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - The KCWA and WRMWSD service areas are located in Kern County. Several ethnographic groups were scattered throughout what is now Kern County, including the Southern Valley Yokuts, Kitanemuk, Castac Chumash (Heizer 1978). Kern County contains numerous Native American sites; however, no Native American archaeological or cultural resources are known to exist in the cultivated areas of the WRMWSD service area. The cultivated areas are considered to have

a low to moderate cultural resource sensitivity. No historic resources are recorded in the cultivated areas of the WRMWSD service area.

Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. The proposed project would not cause a change in the significance of a historic or cultural resource, directly destroy a unique paleontological resource or unique geologic feature, or disturb human remains. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area. Therefore, implementation of the proposed project is anticipated to result in a less than significant impact to cultural resources within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - The California Aqueduct is a 444-mile-long concrete-lined canal running between the Delta and Lake Perris, the oldest sections of which were built in the early 1960s. The aqueduct and its branches pass through Contra Costa, Alameda, San Joaquin, Stanislaus, Merced, Fresno, Kings, Kern, Santa Barbara, San Luis Obispo, Los Angeles, and San Bernardino counties, and includes the areas traditionally inhabited by the Miwok, Northern Valley Yokuts, Southern Valley Yokuts, Chumash, Tataviam, Gabrielino, Serrano, Cahuilla and other neighboring tribes. No prehistoric, historic, or paleontological resources are located within the aqueduct.

San Luis Reservoir is located in the San Joaquin Valley, in land that was traditionally inhabited by the Northern Valley Yokuts at the time of first European contact. There may be historic, prehistoric, or paleontologic sites either along the reservoir margins or located on submerged knolls. Any sites located below the full pool level of the reservoir are subject to periodic inundation for short or long periods of time depending on location, due to normal reservoir operations. The creation of the Castaic Dam and lake facility in 1972 inundated cultural resources. No historic resources are recorded in the area; however, no systematic survey of the lake margins was conducted prior to the construction of the dam. Therefore, there may be unrecorded historic, prehistoric, or paleontologic sites either along the lake margins or located on submerged knolls.

Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Changes in SWP water storage, transport amounts and delivery schedules could result in minor changes in water flows in the California Aqueduct and other conveyance facilities and may change water reservoir levels. These changes would be within current and historic operational ranges, and would not be expected to have any significant adverse direct impacts on cultural resources within the SWP and associated facilities. As implementation of the proposed project would not directly require construction, change land use, or change SWP operating criteria, implementation of the proposed project is not anticipated to result in a change in the significance of a historic or cultural resource, directly destroy a unique paleontological resource or unique geologic feature, or disturb human remains. Therefore, implementation of the proposed project is anticipated to

result in a less than significant impact to cultural resources within the SWP and associated facilities.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to cultural resources due to potential land use changes as a result of development in the CLWA service area. The potential development in the CLWA service area that may be supported by this project could result in disturbance to archaeological and historic resources as a result of grading and construction activities and other land use changes as well as erosion along natural and manmade slopes. These disturbances may result in the change in the significance of a historic or cultural resource, may destroy a unique paleontological resource or unique geologic feature, and may result in the disturbance of human remains. Potential impacts to cultural resources that may result from land use changes are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Most agricultural lands have been previously disturbed by cultivation activities or construction of agricultural structures and irrigation systems. Implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, and therefore, is not anticipated to indirectly cause a change in the significance of a historic or cultural resource, destroy a unique paleontological resource or unique geologic feature, disturb human remains, or otherwise indirectly affect cultural resources. Implementation of the proposed project is anticipated to result in a less than significant indirect impact to cultural resources within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project is not anticipated to indirectly cause a change in the significance of a historic or cultural resource, destroy a unique paleontological resource or unique geologic feature, disturb human remains, or otherwise indirectly affect cultural resources. Implementation of the proposed project is anticipated to result in a less than significant indirect impact to cultural resources within the SWP and associated facilities.

Geology and Soil Impacts

Direct Impacts

Castaic Lake Water Agency - The CLWA service area encompasses the relatively flat-lying Santa Clarita Valley and portions of the surrounding hills and mountains. The geology of the CLWA service area consists of a relatively thick sequence of Plio-Pleistocene Saugus Formation, locally overlain by recent alluvial deposits. Areas within the CLWA service area may be subject to landslides, liquefaction, lateral spreading, subsidence, soil erosion, soil expansion, and other geologic hazards. Two faults, the active San Gabriel fault and the potentially active Holser fault, traverse the CLWA service area. The active San Andreas fault is located approximately 18 miles northeast of the central portion of the Santa Clarita Valley, and the San Fernando and Sierra Madre faults are also located in the vicinity of the CLWA service area. Implementation of the proposed project would not require land disturbance nor would it directly change the

existing land uses within the CLWA service area, and therefore, would not directly expose people or structures to geologic hazards including rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, liquefaction and landslides. Nor would implementation of the proposed project directly result in substantial soil erosion, or be located on an unstable or expansive geologic unit or soil. In addition, the proposed project does not include the construct of structures or changes in land use that would result in impacts from septic tanks or alternative wastewater disposal systems. Therefore, no direct impacts to geologic resources within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - The topography within the KCWA areas within the San Joaquin Valley and the WRMWSD service area is generally flat with rolling foothills and several ephemeral creeks. Sand and clay loams characterize the soils present in the WRMWSD service area. As the topography of the WRMWSD service area is generally flat to gently sloping, landslide potential is low. In addition, soils within the WRMWSD service area are generally not subject to expansion, subsidence, liquefaction and lateral spreading. Numerous earthquake faults have been identified in the vicinity of the WRMWSD service area. Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated acreage in the WRMWSD service area served by SWP water on an average annual basis, nor would it change existing land uses within the WRMWSD service area. Therefore, implementation of the proposed project is not anticipated to directly expose people or structures to geologic hazards including rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, liquefaction and landslides. Nor would implementation of the proposed project directly result in substantial soil erosion, or be located on an unstable or expansive geologic unit or soil. In addition, the proposed project does not include the construction of structures or changes in land use that would result in impacts from septic tanks or alternative wastewater disposal systems. Therefore, implementation of the proposed project is anticipated to result in a less than significant impact to geologic resources within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - Geologic features for the areas traversed by the SWP, or containing SWP facilities within the San Joaquin Valley, are generally similar to those described for the KCWA and WRMWSD service areas above. Geologic features for the areas traversed by the SWP, or containing SWP facilities within and south of the Tehachapi Mountain Range, are generally similar to those described for the CLWA service area above. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Changes in SWP water storage, transport amounts, and delivery schedules could result in minor changes in water flows in the California Aqueduct and other conveyance facilities and could result in changes to water levels within San Luis Reservoir and Castaic Lake. These changes are expected to be within current and historic operational ranges, and would not be expected to have significant impacts to geology and soils within the SWP and associated facilities. Implementation of the proposed project is not

anticipated to directly expose people or structures to geologic hazards including rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, liquefaction and landslides. Nor would implementation of the proposed project directly result in substantial soil erosion, or be located on an unstable or expansive geologic unit or soil. In addition, the proposed project does not include the construction of structures or changes in land use that would result in impacts from septic tanks or alternative wastewater disposal systems. Therefore, no direct impacts to geologic resources within the SWP and associated facilities would result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to geologic resources due to potential land use changes as a result of development in the CLWA service area. Potential future development within the CLWA service area that could be served by this additional water supply could include areas with rugged topography. Slopes could range from relatively flat in some of the drainage channels to very steep on some of the canyon sides. Due to the existence of rugged topography and steep slopes, landslides have occurred in the area, and other areas of unstable slopes likely exist. Some of the lower elevation drainages have a potential for high groundwater and mudflows. Development would generally be served by the extension of existing sewer systems or would require soils and geologic studies to determine capability to adequately support alternative wastewater disposal systems. Potential development within the CLWA service area could require extensive grading and earthwork that would substantially alter the landforms and topography. Grading would require removal of vegetation and further destabilization of slopes during the construction period. This could lead to accelerated erosion and sedimentation in local drainages. Additionally, portions of the CLWA service area are within a seismically active region, and potential land use changes could expose people or structures to loss, injury or death involving seismic activity and seismic related ground failures. These indirect impacts are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, implementation of the proposed project would not indirectly expose people or structures to geologic hazards from seismic activities and seismic related ground failures, result in substantial soil erosion, be located on an unstable or expansive geologic unit or soil, or include the construction of structures or changes in land use that would result in impacts from septic tanks or alternative wastewater disposal systems. Due to the variability and flexibility of agricultural management practices and varied water sources, implementation of the proposed project is anticipated to result in a less than significant indirect impact to geologic resources.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, implementation of the proposed project would not indirectly expose people or structures to geologic hazards from seismic activities and seismic related ground failures, result in substantial soil erosion, be located on an unstable or expansive geologic unit or soil, or include the construction of structures or changes in land use that would result in impacts from septic tanks or alternative wastewater disposal systems.

Therefore, no indirect impacts to geologic resources are anticipated to result from implementation of the proposed project.

Hazards and Hazardous Materials Impacts

Direct Impacts

Castaic Lake Water Agency - As much of the CLWA service area is urbanized, it contains a range of industries and commercial enterprises that use, have used, or produced hazardous materials and/or hazardous wastes. Numerous fuels, chemicals, and other hazardous materials and hazardous wastes are also transported via roadways and railways. In addition, numerous hazardous materials/waste sites are present in the CLWA service area. A wide variety of potential safety hazards are present throughout the CLWA service area including open water bodies, and active industrial and commercial areas. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. No aspect of the proposed project would directly create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, create a hazard to the public or the environment through the reasonably foreseeable upset or accident involving the release of hazardous materials, emit hazardous emissions or handle hazardous materials with one-quarter mile of an existing or proposed school, be located on an existing hazardous materials site, or impair or physically interfere with an adopted emergency plan. As no airport land use plans, public use airports, or private airports are located within the CLWA service area, implementation of the proposed project would not create safety or other hazards as a result of proximity to an airport. In addition, as no construction or land use changes would directly result from implementation of the proposed project, the proposed project would not expose people or structures to a significant risk involving wildfires. Due to the incremental increase in the use of hazardous materials for additional water treatment requirements, the proposed project is anticipated to result in a less than significant impact to hazards and hazardous materials within the CLWA service area.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Substantial portions of the KCWA and WRMWSD service areas are used for agricultural purposes. Agricultural operations use pesticides and fertilizers, some of which are considered hazardous materials. Industrial facilities and other entities in the KCWA and WRMWSD service areas use a wide variety of hazardous materials including fuels and solvents. A wide variety of potential safety hazards are present throughout the KCWA and WRMWSD service areas including open water bodies, agricultural equipment storage areas, and active industrial and commercial areas.

Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. No increase in transport or use of hazardous materials or hazardous substances releases would occur. The project would not result in construction within a hazardous materials site, airport land use plan area or the vicinity of a private airstrip and would not disrupt an emergency plan or cause increased risk of wildland fires. Therefore, implementation of the proposed project

is not anticipated to result in a direct impact to hazards or hazardous materials within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - Hazardous material use, hazardous waste production and potential hazards for the San Joaquin Valley area is similar to that described above for the KCWA and WRMWSD service areas. Hazardous material use, hazardous waste production and potential hazards for the SWP areas within the Tehachapi Mountain Range to Castaic Lake is similar to that described for the CLWA service area above. SWP facilities utilize a variety of fuels, solvents and other hazardous materials at the various facilities. Numerous fuels, chemicals, and other hazardous materials and hazardous wastes are also transported via roadways and railways that run adjacent to or traverse the California Aqueduct or other SWP facilities.

Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Changes in the amount of water transported by the SWP between the WRMWSD turnouts and the CLWA turnouts could increase hazardous materials use related to increased pumping requirements. Changes in delivery schedules could result in changes in water flows in the California Aqueduct and other conveyance facilities and could result in changes in water levels within San Luis Reservoir and Castaic Lake. As such, these changes would be within current and historic fluctuations and would not be expected to increase hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, increase hazards to the public or the environment through the reasonably foreseeable upset or accident involving the release of hazardous materials, increase hazards from hazardous emissions or the handling hazardous materials with one-quarter mile of an existing or proposed school, increase hazards from being located on an existing hazardous materials site, increase safety hazards from being in the proximity of an airport land use plan, public use airports or private airports, or increase hazards as a result of wildfires. In addition, implementation of the proposed project is not anticipated to impair or physically interfere with an adopted emergency plan. Therefore, implementation of the proposed project is not anticipated to result in a direct impact to hazards and hazardous materials within the SWP and associated facilities.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts as a result of increases in hazards and hazardous materials due to potential land use changes from development in the CLWA service area. Historic as well as present hydrocarbon exploration and extraction activities have resulted in soil contamination from spills or disposal of hazardous materials in the ground within the CLWA service area. Depending on the specific location, development within the CLWA service area potentially served by this additional water supply may require the removal or remediation of any such contamination before property development could commence. Increases in water treatment would result in greater use of hazardous or toxic materials used. In addition, potential indirect project effects associated with growth may create increased risks such as hazardous substance releases, changes in emergency response needs, and similar public health and safety hazards. In addition, potential land use changes may create a hazard to the public or the

environment through the routine transport, use, or disposal of hazardous materials, create a hazard to the public or the environment through the reasonably foreseeable upset or accident involving the release of hazardous materials, emit hazardous emissions or handle hazardous materials within one-quarter mile of an existing or proposed school, be located on an existing hazardous materials site, impair or physically interfere with an adopted emergency plan, or increase hazards as a result of wildfires. These impacts are considered potentially significant. No lands within the CLWA service area are located within an airport land use plan, nor are they located in the vicinity of a public airport, public use airport or private airstrip.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, implementation of the proposed project would not indirectly create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, create a hazard to the public or the environment through the reasonably foreseeable upset or accident involving the release of hazardous materials, emit hazardous emissions or handle hazardous materials within one-quarter mile of an existing or proposed school, be located on an existing hazardous materials site, impair or physically interfere with an adopted emergency plan, increase safety hazards from being in the proximity of an airport land use plan, public use airports or private airports, or increase hazards as a result of wildland fires. Therefore, no indirect impacts to hazards and hazardous materials would result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, implementation of the proposed project would not indirectly create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, create a hazard to the public or the environment through the reasonably foreseeable upset or accident involving the release of hazardous materials, emit hazardous emissions or handle hazardous materials within one-quarter mile of an existing or proposed school, be located on an existing hazardous materials site, impair or physically interfere with an adopted emergency plan, increase safety hazards from being in the proximity of an airport land use plan, public use airports or private airports, or increase hazards as a result of wildland fires. Therefore, no indirect impacts are anticipated to hazards and hazardous materials would result from implementation of the proposed project.

Hydrology and Water Quality Impacts

The implementation of the proposed project will be evaluated taking into consideration contract terms with and without the Monterey Amendments[4]. For example, under certain water shortage conditions without the Monterey Amendments in place, the amount of water delivered to holders of agricultural Table A amount in a particular year can be reduced first, prior to holders of Municipal and Industrial (M&I) Table A amount being affected. Whereas, under the Monterey Amendments, holders of both agricultural and M&I Table A amounts would, under defined shortage conditions, be subject to proportional reductions.

In *Planning and Conservation League, et al. v. Department of Water Resources* (2000) 83 Cal. App. 4th 892, the Court issued a writ of mandate ordering that the certification of the EIR for the Monterey Agreement be vacated since the Court found that the EIR failed to comply with CEQA. Although the Court ordered the decertification of the EIR, the Court did not invalidate nor stay the implementation of the Monterey Agreement. In the meantime, the trial court is continuing to retain jurisdiction over the CEQA litigation, which is currently in settlement by the parties.

Direct Impacts

Castaic Lake Water Agency - The primary surface water drainage course in the CLWA service area is the Santa Clara River. Surface water resources include the Santa Clara River, Bouquet

4. The Monterey Amendment envisioned a long-term restructuring of the SWP Water Supply Contracts to reflect the compromises and give and take of the mediated settlement. The Monterey Amendment does not result in an increase in total SWP supplies but instead settles the dispute regarding how any available supplies are allocated, and also provides flexibility and cooperation among the SWP Contractors in more efficient use of existing facilities to better manage the available supplies. The Monterey Amendment has the following major provisions:
   - All SWP water supplies are allocated among SWP Contractors in proportion to their Table A amount.
   - Agricultural SWP Contractors have reduced their cumulative Table A amount by 45,000 AF.
   - Agricultural SWP Contractors (including KCWA) committed to make available 130,000 AF of Table A amount for permanent transfer to urban SWP Contractors on a willing buyer-willing seller basis.
   - The Kern Fan Element property would be transferred to agricultural SWP Contractors so that they may use it for water banking and other purposes.
   - SWP Contractors who are unable to use all of their allocated supply in a certain year may place any excess in a "turn-back pool" that will be available for sale at fixed rates, thereby making that water available to other SWP Contractors and allowing the selling Contractor to recover some of their fixed costs.
   - SWP Contractors are provided rate reductions or credits, starting in 1997 and continuing through 2035, based on formulas set forth in the Monterey Amendment.
   - In addition, the Monterey Amendment deleted a provision in the SWP Water Supply Contracts generally referred to as Article 18(b) that would reduce SWP Contractor's Table A amounts by an amount determined by DWR in the event that a "permanent shortage" were to exist.

   The Monterey Amendment has three primary objectives: (1) to increase the reliability of all SWP Contractors' water supplies; (2) to stabilize the rate structure to improve the financial viability of the SWP; and (3) to increase water management flexibility for all SWP Contractors. A permanent transfer of agricultural Table A amount to an area with urban development potential, such as that analyzed in this document, is one of the ways these objectives are intended to be met.

Reservoir, and Castaic Lake. Primary flood hazard areas occur in and along natural drainage channels, such as the Santa Clara River and its tributaries, and in areas where sheetflow may occur during high intensity rainfall (CLWA 1988; Slade 1986). CLWA receives SWP water through the terminus of the West Branch of the California Aqueduct at Castaic Lake.

The existing local water supply in the CLWA service area is groundwater extracted from the Alluvial aquifer and from the underlying Saugus Formation aquifer. Although the Alluvial aquifer is the smaller of the two-aquifer systems, as measured by storage capacity, most water wells within the CLWA service area are drilled into this aquifer. The Alluvial aquifer has supplied about 30,000 to 40,000 acre-feet per year (AFY) in normal weather years, and 30,000 to 35,000 AFY in dry years (CLWA 2000, Slade 2002). The Saugus Formation contains much greater quantities of groundwater than the Alluvial aquifer. Approximately 1.65 million AF of potentially usable groundwater is present from depths of 500 to 2,500 feet in the Saugus Formation. The principal source of recharge to the Saugus Formation is from precipitation on exposed outcrops and direct infiltration from the overlying alluvium (Slade 2002). Preliminary estimates of the combined potential recharge to the Saugus Formation from these two sources range from 20,000 to 22,000 AFY in wet periods, and from 11,000 to 13,000 AFY in dry periods. The Saugus Formation has supplied about 7,500 to 15,000 AFY in normal weather years, and 11,000 to 15,000 AFY in dry years (CLWA 2000). No long-term continuous or permanent decline in either water levels or the amount of groundwater in storage has occurred under the historical range of pumping (Slade 2002). Based on the volume of water in storage and the history of aquifer performance, extractions from the Saugus Formation could be increased from 15,000 to 25,000 AFY, and ultimately to 35,000 AFY on an infrequent basis (Slade 2002).

Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. No aspect of the proposed project would (1) directly violate a water quality standard, wastewater discharge requirement or otherwise deplete water quality, (2) deplete groundwater supplies or interfere with groundwater recharge, (3) alter the existing drainage pattern of an area that would result in erosion, siltation or flooding, (4) create or contribute runoff which would exceed stormwater system capacity or generate polluted runoff, (5) place housing or structures within the 100-year floodplain, (6) create inundation by tsunami or mudflow, or (7) increase risk of inundation by seiche. Therefore, no direct impacts to hydrology and water quality within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - KCWA is the entity that holds the SWP contract within Kern County. In 1998, KCWA, together with its 14 member water districts, including WRMWSD, held approximately 1,088,000 AF of SWP contract rights. KCWA serves municipal, industrial and agricultural water users in Kern County. WRMWSD obtains water from the SWP, local sources and groundwater sources. WRMWSD receives SWP water through turnouts along the California Aqueduct, and delivers this water through the existing WRMWSD conveyance system to lands within its service area. Lands within the service area that do not hold contracts for SWP water rely on groundwater to meet demands (although, excess SWP water can be delivered to these certain areas through existing conveyance facilities).

Sandy Creek, Bitterwater Creek, Santiago Creek, Pleitito Creek, Pleito Creek, Salt Creek, Tecuya Creek, Grapevine Creek, Pastoria Creek, Tunis Creek, El Paso Creek, Liveoak Creek, and Caparell Creek flow from the south into the WRMWSD; and Tejon Creek flows from the east into the WRMWSD. Most of these creeks are intermittent and do not provide significant water for irrigation or conveyance for irrigation water.

The WRMWSD service area overlies the Kern County groundwater basin. The Kern County groundwater basin is part of the main San Joaquin Valley groundwater basin. The Kern County groundwater basin is, itself, composed of smaller basins, referred to as sub-basins. The sub-basins underlying WRMWSD are the Wheeler Front and the White Wolf sub-basins. Generally both basins contain water of sufficient quality for agricultural use. Deep groundwater wells in the WRMWSD service area were initially drilled in the mid-1940s. Until the early 1970s, groundwater was the primary water supply in the southern Kern County area and, as a result, the groundwater levels declined by 150 to 200 feet from levels observed in the 1940s. Use of the SWP water has generally allowed the groundwater levels to rise to levels equal to or above levels observed in the late 1960s and early 1970s.

No aspect of the proposed project would (1) directly violate a water quality standard, wastewater discharge requirement or otherwise deplete water quality, (2) deplete groundwater supplies or interfere with groundwater recharge, (3) alter the existing drainage pattern of an area that would result in erosion, siltation or flooding, (4) create or contribute runoff which would exceed stormwater system capacity or generate polluted runoff, (5) place housing or structures within the 100-year floodplain, or (6) create inundation by seiche, tsunami or mudflow. With implementation of the proposed project, WRMWSD would continue to make water available from a combination of historic and current water and agricultural management actions within the service area. Implementation of the proposed project would not materially affect irrigated acreage in the WRMWSD service area served by SWP water on an average annual basis, nor would it change existing land uses within the WRMWSD service area. Therefore, implementation of the proposed project is anticipated to result in a less than significant impact to hydrology and water quality within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - The SWP is the largest state-built, multi-purpose water project in the country, and includes 28 storage facilities, reservoirs and lakes; 20 pumping plants; six pumping-generating plants and hydroelectric power plants; and about 660 miles of aqueducts and pipelines. In general, the SWP is operated to fill storage reservoirs during the high runoff months of the winter and early spring. Under current operating criteria SWP diversions from the Delta are significantly reduced as of April 15 of each year. San Luis Reservoir, located approximately 60 miles south of the Banks Pumping Plant, is an off-stream storage reservoir with a total capacity of over two million AF (slightly more than half of the capacity is allocated to the SWP, and the remainder is allocated to the Central Valley Project). The SWP is operated to store as much water as possible in San Luis Reservoir prior to April 15. The stored water is then used during the high-demand summer and fall months to supplement the more limited pumping from the Delta in meeting contractor demands. Therefore, San Luis Reservoir water levels vary considerably during the year to provide storage of water in the winter months for later use in the summer months. Castaic Lake is operated to provide regulatory storage to meet peak deliveries during the summer months for those contractors that

receive water from the lake, and to provide an emergency supply in the case of a major supply system outage. Castaic Lake has a storage volume of approximately 323,700 AF.

Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. No aspect of the proposed project would (1) directly violate a water quality standard, wastewater discharge requirement or otherwise deplete water quality, (2) deplete groundwater supplies or interfere with groundwater recharge, (3) alter the existing drainage pattern of an area that would result in erosion, siltation or flooding, (4) create or contribute runoff which would exceed stormwater system capacity or generate polluted runoff, (5) place housing or structures within the 100-year floodplain, or (6) create inundation by seiche, tsunami or mudflow.

The proposed project involves the contractual transfer of SWP Table A amount as described in both CLWA and KCWA's water supply contracts. However, the proposed project would not change the annual aggregate amount of SWP water (Table A or other water class types) available for use by any SWP contractor. The proposed project includes changes in the amount of SWP Table A amounts available to KCWA (in particular WRMWSD), and CLWA as well as associated changes in the location and timing of SWP deliveries and changes in the utilization of conveyance and storage facilities.

Due to the variety of water management criteria, and as implementation of the proposed project would deliver water to CLWA that could otherwise have been delivered to WRMWSD, the total amount of water diverted from the Delta would not change with implementation of the proposed project. Water exported from the Delta must comply with established water quality standards and other operating criteria, and implementation of the proposed project would not change these established operating criteria.

Minor changes in SWP storage and transport amounts could occur within SWP facilities as a result of the proposed project. There is a potential for differences in monthly storage and release schedules, and pumping as a result of the change from agricultural to M&I use and the delivery of water further south within the SWP system. SWP water pumped from the Delta is stored in SWP and local facilities for later delivery. Releases from San Luis Reservoir could change based upon changes in timing of deliveries from agricultural to M&I use. Overall, implementation of the proposed project is anticipated to result in a less than significant impact to the SWP and associated facilities.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to hydrology and water quality due to potential land use changes as a result of development in the CLWA service area. Indirect effects within CLWA include potential changes in the use of local groundwater supplies. Increased availability of SWP supplies resulting from the proposed project could indirectly affect the use of local groundwater in the Santa Clarita Valley. Although the amount of the SWP Table A amount would increase, the SWP supply available to CLWA in any one year following the Table A amount transfer may vary due to hydrologic and weather

conditions, and the amount of delivery may vary due to local water demands and CLWA's ability to take the total amount of its annual delivery (i.e., due to limited local storage). This could result in increased use of groundwater in certain years and could also change (both potentially increasing and decreasing) the amount of groundwater recharge in some years.

The EIR would evaluate the potential effects of growth that could be served by the proposed project, with regard to its effects on hydrology and water quality for existing lands within the CLWA service area. The potential development of lands within the CLWA service area would increase the amount of impervious surface (roads, buildings, other paved areas). This could reduce percolation of rainwater to groundwater, alter surface flows and drainage, and increase the amount and rate of stormwater runoff through storm sewers or other engineered drainages. Increases in erosion and siltation could also result from land use changes. Projected increases in runoff could, in some cases, exceed existing capacities requiring additional engineered drainages or other alterations in on and off-site locations of development and increasing polluted runoff.

There is also the potential for growth to affect the 100-year floodplain, including, redirecting flood flows as a result of elevating lands above the floodplain, construction within the floodplain, or other similar measures that could slow or redirect flood flows. Depending upon the location of future growth served by the project and design factors, people or structures could be exposed to a significant risk of loss, injury or death involving flooding and inundation by seiche or mudflow.

The Santa Clarita Valley has water supplies from sources in addition to SWP water, including groundwater. In 1997, perchlorate, a toxic substance, was found in the groundwater of the Saugus Formation near the site of an old munitions factory in the Santa Clarita Valley. Four Saugus production wells and one Alluvial production well have been shut down due to perchlorate contamination. Water agencies are evaluating several methods of safely removing perchlorate from the groundwater. The proposed project and the effects associated with growth are not expected to have a significant adverse effect on perchlorate concentrations in the groundwater, however, the EIR will address potential effects of the proposed project on perchlorate concentrations in the groundwater.

Runoff from development in the CLWA service area would eventually drain into the Santa Clara River. Wastewater produced on these lands would be treated in existing and future water reclamation facilities. Discharges from these facilities would also be discharged into the Santa Clara River in compliance with existing discharge permits. The identification of excessive chloride concentrations has resulted in inclusion of Reaches 7 and 8 of the Santa Clara River in the Clean Water Act Section 303(d) List of impaired water bodies. This list identifies water quality-limited water bodies and pollutants of concern for which a total maximum daily load (TMDL) must be developed[5]. The Regional Water Quality Control Board is currently in the process of development of a TMDL plan for the Santa Clara River.

The proposed project would not be expected to substantially increase chloride concentrations in surface water runoff in the Santa Clarita Valley. However, the proposed project would result in an increase in wastewater effluent volume (and therefore increased total chloride load) into the

5. A TMDL is a number that represents the assimilative capacity of water for a particular pollutant, or the amount of a particular pollutant that water can receive without impacting its beneficial uses.

Santa Clara River. It is anticipated that development planned in the CLWA service area would be similar to existing uses in the Santa Clarita Valley (i.e., primarily residential) and therefore would be expected to produce wastewater with similar water quality characteristics, although the overall volume of wastewater would increase. The potential for the proposed project to have a significant impact on surface waters of the Santa Clarita Valley with respect to chloride concentrations would be evaluated in the EIR.

Overall, implementation of the proposed project has the potential to have significant indirect impacts to hydrology and water quality within the CLWA service area.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Implementation of the proposed project is unlikely to result in indirect impacts to hydrology and water quality within the KCWA and WRMWSD service areas. WRMWSD participates in groundwater recharge programs that are intended to augment surface water supplies when supply is insufficient to meet demand. Due to the flexibility of water management practices associated with agricultural lands, implementation of the proposed project is anticipated to result in a less than significant impact to hydrology and water quality within the KCWA and WRMWSD service areas. In addition, as implementation of the proposed project would not result in land use changes, the proposed project is not anticipated to result in indirect impacts that would (1) violate a water quality standard, wastewater discharge requirement or otherwise deplete water quality, (2) deplete groundwater supplies or interfere with groundwater recharge, (3) alter the existing drainage pattern of an area that would result in erosion, siltation or flooding, (4) create or contribute runoff which would exceed stormwater system capacity or generate polluted runoff, (5) place housing or structures within the 100-year floodplain, or (6) create inundation by seiche, tsunami or mudflow.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project would not result in indirect impacts that would (1) violate a water quality standard, wastewater discharge requirement or otherwise deplete water quality, (2) deplete groundwater supplies or interfere with groundwater recharge, (3) alter the existing drainage pattern of an area that would result in erosion, siltation or flooding, (4) create or contribute runoff which would exceed stormwater system capacity or generate polluted runoff, (5) place housing or structures within the 100-year floodplain, or (6) create inundation by seiche, tsunami or mudflow. Due to the slight changes in the SWP storage and transport amounts that could occur as a result of the proposed project, indirect impacts are considered to be less than significant.

Land Use and Planning Impacts

Direct Impacts

Castaic Lake Water Agency - The CLWA service area includes portions of unincorporated Los Angeles County, the City of Santa Clarita (including previously unincorporated communities of Newhall, Saugus, Valencia and Canyon Country), the communities of Stevenson Ranch, Castaic, Val Verde and unincorporated portions of eastern Ventura County. Land uses in the CLWA service area include urban uses such as higher density residential, commercial, industrial and

public/institutional uses, rural or lower density residential development, agricultural and open space uses, and national forest lands. Portions of the valley have development constraints due to steep terrain and potential flooding. Adopted plans and policies of local governments and planning bodies with jurisdiction in the CLWA service area include those adopted by the Southern California Association of Governments, Los Angeles County, Ventura County, and the City of Santa Clarita.

In addition, CLWA and certain local water purveyors developed and adopted a revised Urban Water Management Plan in 2000. This plan is a management tool, providing a framework for action but not functioning as detailed project development or action. The plan presents information about the water demand, water supply, water conservation, water recycling, and reliability planning in the CLWA service area.

Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. In addition, implementation of the proposed project would not directly divide an established community, or conflict with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating environmental effects. The project would not conflict with any habitat conservation plan or natural community conservation plan in the CLWA service area, as none have been adopted. Therefore, no direct impacts to land uses and planning within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Land use within Kern County is primarily agricultural with some oil and mineral development. Urban development is concentrated in the metropolitan Bakersfield area; rural communities are scattered throughout the county. Land use in unincorporated portions of Kern County is under the jurisdiction of the county, with the exception of non-jurisdictional lands such as those owned by federal or state governments. In 1998, the WRMWSD service area contained approximately 146,620 acres (WRMWSD 2001). Land uses included the following: farmed area (94,269 acres or 64.3 percent); fallow lands (17,979 acres or 12.3 percent); miscellaneous and other lands, defined as developed but nonfarmed areas within cultivated lands, such as farm roads, farmsteads, reservoirs, airstrips, cotton gins, tank farms, utility yards, etc. (8,201 acres or 5.6 percent); and native vegetation/non-developed lands (26,171 acres or 17.8 percent) (WRMWSD 2001).

Implementation of the proposed project would not require or promote the adoption or modification of existing land uses or land use plans within the KCWA and WRMWSD service areas. In addition, implementation of the proposed project would not directly divide an established community, or conflict with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating environmental effects. With implementation of the proposed project, WRMWSD would continue to make water available from a combination of historic and current water and agricultural management actions within the service area. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. Therefore, no direct impacts to land use and planning within the KCWA or WRMWSD service areas are anticipated to result from implementation of the proposed project.

The project would not conflict with any natural community conservation plans in KCWA or WRMWSD service areas, since none have been adopted. A habitat conservation plan is being developed for the San Joaquin Valley floor within Kern County and in the vicinity of Tejon Ranch in the WRMWSD service area. In addition, a habitat conservation plan has been developed for the Bakersfield area. It is not anticipated that the project would conflict with these plans, the status of which would be described in the EIR.

State Water Project and Associated Facilities - Land use and planning directly associated with SWP facilities is under the jurisdiction of DWR or its designee for such things as facilities, easements, etcetera. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Implementation of the proposed project would not directly divide an established community, or conflict with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating environmental effects. As no construction or land use changes would result with implementation of the proposed project, the project is not anticipated to conflict with any adopted habitat conservation plan or natural community conservation plan. Therefore, no direct impacts to land use and planning within the SWP and associated facilities are anticipated to result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to land use and planning due to potential land use changes as a result of development in the CLWA service area. Potential development within the CLWA service area served by this additional water supply could, in some cases, require changes to zoning designations to accommodate residential, commercial, and other uses or to increase the density or intensity of allowed uses. Depending on the location and type of development, there is the potential for new development to physically divide an established community. Without adequate mitigation, there also is a potential for some conflicts with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating environmental effects. Land use changes would not conflict with an adopted habitat conservation plan or natural community conservation plan as no habitat conservation plan or natural community conservation plan exist in the CLWA service area.

As a result of the proposed increased SWP water supply associated with this project, land development projects would potentially be accommodated within the CLWA service area. The approval of these development projects requires land use approvals by local governments. Potential land use changes are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, the proposed project is not anticipated to divide an established community, conflict with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating environmental effects, or conflict with an adopted or anticipated habitat conservation plan or natural community conservation plan. Therefore, no

indirect impacts to land use and planning are anticipated to result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project is not anticipated to divide an established community, conflict with adopted land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating environmental effects, or conflict with an adopted habitat conservation plan or natural community conservation plan. Therefore, no indirect impacts to land use and planning are anticipated to result from implementation of the proposed project.

Mineral Resource Impacts

Direct Impacts

Castaic Lake Water Agency - Much of the CLWA service area is classified as potential sand and gravel mineral resource areas. Most of the floodplain of the Santa Clara River drainage system is classified by the California Department of Mines and Geology as Zone MRZ-2, which is an area where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. Tertiary sedimentary rocks in the CLWA service area are also considered alternative sources of aggregate. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. The proposed project would not directly result in the loss of availability of a known mineral resource or the loss of availability of a locally important mineral resource, and therefore no direct impacts to mineral resources within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Numerous oil wells, groundwater wells and gravel mining operations are scattered throughout the KCWA and WRMWSD service areas. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. The proposed project would not directly result in the loss of availability of a known mineral resource or the loss of availability of a locally important mineral resource. Therefore, no direct impacts to mineral resources within the KCWA or WRMWSD service areas are anticipated to result from implementation of the proposed project.

State Water Project and Associated Facilities - Numerous oil wells, groundwater wells and gravel mining operations are scattered throughout the regions traversed or containing SWP facilities. Any mineral resources directly associated with SWP facilities would be under the jurisdiction of DWR or its designee. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. The proposed project would not directly result in the loss of availability of a known mineral resource or the loss of availability of a locally important mineral resource. Therefore, no direct impacts to

mineral resources within the SWP and associated facilities are anticipated to result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to mineral resources due to potential land use changes as a result of development in the CLWA service area. Hydrocarbon resources occur in portions of the Santa Clarita Valley. Most wells were developed in the 1940s and 1950s. Many of these wells have been abandoned. Since the proposed project may also remove an impediment to growth, there may be indirect impacts related to increased gravel mining and production caused by a growth-related demand for aggregate to build roads and other infrastructure. To the extent that future development will result in the loss of availability of a known mineral resource that is of value to the residents of the region and state or the loss of availability of a locally important mineral resource recovery site, impacts would be significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, the proposed project would not result in the loss of availability of a known mineral resource or the loss of availability of a locally-important mineral resource. Therefore, no indirect impacts to mineral resources would result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project would not directly result in the loss of availability of a known mineral resource or the loss of availability of a locally-important mineral resource. Therefore, no indirect impacts to mineral resources would result from implementation of the proposed project.

Noise Impacts

Direct Impacts

Castaic Lake Water Agency - The CLWA service area includes developed urban areas, primarily within the City of Santa Clarita and developed portions of unincorporated Los Angeles County, as well as lower density residential or rural/agricultural areas, including portions of eastern Ventura County. Common sources of noise are highways, railroads, buses, and aircraft. The Union Pacific Railroad, Interstate 5, State Route 14 and Highway 126 traverse the Santa Clarita Valley and contribute to ambient noise levels. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. No aspect of the proposed project would expose persons to or generate noise levels in excess of established standards, expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, or cause a substantial permanent temporary or periodic increase in ambient noise levels. No lands within the CLWA service area are located within an airport land use plan, nor are they located in the vicinity of a public airport, public use airport or private airstrip. Therefore, no direct noise impacts within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Noise within Kern County is primarily related to agricultural and vehicular uses in rural areas, and within areas of urban development routine noise related primarily to vehicular traffic and other noises commonly associated with residential, commercial, industrial, public facilities, recreation and other developed uses. Land use within the WRMWSD service area is predominantly agricultural use (farming and grazing), undeveloped lands or open space. The main noise sources are from agricultural uses and vehicular traffic (particularly along Interstate 5, U.S. 99 and State Highway 166).

Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Therefore, no aspect of the proposed project is anticipated to expose persons to or generate noise levels in excess of established standards, expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, or cause a substantial permanent temporary or periodic increase in ambient noise levels. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. The project would not expose people residing or working in the KCWA or WRMWSD service areas to excessive noise levels associated with lands subject to an airport land use plan, or in the vicinity of a public airport, public use airport or private airstrip. Therefore, implementation of the proposed project is not anticipated to result in direct impacts to noise within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - Noise associated the SWP and related facilities can vary from minimal amounts along the aqueduct to higher levels of noise due to vehicular traffic and other noises commonly associated with pumping facilities, recreational facilities, highways, and other noise generating uses along and associated with the operation of the aqueduct and related facilities. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Therefore, no aspect of the proposed project is anticipated to expose persons to or generate noise levels in excess of established standards, expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, cause a substantial permanent temporary or periodic increase in ambient noise levels, or expose people to excessive noise levels in the vicinity of a public airport, public use airport or private airstrip. No direct noise impacts within the SWP and associated facilities are anticipated to result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect noise impacts due to potential land use changes as a result of development in the CLWA service area. Potential development within the CLWA service area that could be served by this additional water supply could substantially alter the land uses from vacant land, low density and agricultural uses to urban uses (residential, commercial and other uses) with associated activities, traffic, and noise sources which could change ambient noise levels on a temporary or permanent basis. In addition, potential land use changes could expose persons to or generate noise levels in excess of established standards,

expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, or cause a substantial permanent temporary or periodic increase in ambient noise levels. These impacts are considered potentially significant. The CLWA service area is not located within an airport land use plan, nor is it in the vicinity of a public airport, public use airport or private airstrip.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, the proposed project is not anticipated to expose persons to or generate noise levels in excess of established standards, expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, cause a substantial permanent temporary or periodic increase in ambient noise levels, or expose people to excessive noise levels in the vicinity of a public airport, public use airport or private airstrip. Therefore, no indirect noise impacts would result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project is not anticipated to expose persons to or generate noise levels in excess of established standards, expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, cause a substantial permanent temporary or periodic increase in ambient noise levels, or expose people to excessive noise levels in the vicinity of a public airport, public use airport or private airstrip. Therefore, no indirect noise impacts would result from implementation of the proposed project.

Population and Housing Impacts

Direct Impacts

Castaic Lake Water Agency - In 1998, it was estimated that there was approximately 177,000 persons, 57,000 housing units, and 59,000 jobs in the Santa Clarita Valley (SCAG 1998). These estimates reflect increases of approximately 9-10 percent since 1994 when there were approximately 162,000 persons, 52,000 households, and 53,000 jobs in the Santa Clarita Valley (SCAG 1998). The population of the CLWA service area was estimated at approximately 190,000 persons in 2000 based upon the U.S. Census. Los Angeles County projects a population of 270,000 persons, 93,400 housing units, and 111,000 jobs by the year 2010. Compared to the 1998 estimates, the 2010 projections anticipate an increase of 53 percent for population, 64 percent for housing, and 88 percent for jobs. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. The proposed project would not result in increased employment or make other changes in activities that would directly affect population and housing. In addition, the proposed project would not directly displace a substantial number of people or existing houses. Therefore, no direct impacts to population and housing within the CLWA service area are anticipated to result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - The population of Kern County in 1990 was 543,477 persons, and 661,645 persons in 2000 (U.S. Census Bureau 2000). From 1990 to 2000, the population grew approximately 21 percent. Based on Census

data, in 2000, Kern County contained approximately 231,560 housing units, as compared to approximately 198,640 housing units in 1990. The WRMWSD service area consists predominantly of agricultural lands, although small areas of industrial development and the unincorporated community of Lakeview are within the service area, along with the town site of Wheeler Ridge. Based on U.S. Census Bureau data, the population of the WRMWSD service area in 1990 was estimated to be 3,029 persons, or less than one percent of the population of Kern County. In 2000, the population of the WRMWSD service area was estimated to be 2,854 persons, or less than one percent of the population of Kern County. The WRMWSD service area does not contain large areas of residential development.

Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. In addition, the proposed project would not directly induce substantial population growth, nor would it displace a substantial number of people or existing houses. Therefore, no direct impacts to population and housing within the KCWA or WRMWSD service areas would result from implementation of the proposed project.

State Water Project and Associated Facilities - As the SWP and associated facilities are a statewide water distribution system, there are no population and housing resources directly associated with the SWP facilities. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. The proposed project would not directly induce substantial population growth, nor would it displace a substantial number of people or existing houses. Therefore, no direct impacts to population and housing within the SWP and associated facilities would result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to population and housing due to potential land use changes as a result of accommodation of development in the CLWA service area. The project is considered to be growth inducing because it would remove an obstacle to growth by providing additional SWP water to CLWA that could be used to serve existing as well as future water users. Further, it is possible that future land use development approvals for lands that could be served as a result of the project would include amendments to the existing general plans, zoning, and adopted growth forecasts, which could be considered growth inducing. These impacts are considered potentially significant. Potential development within the CLWA service area served by the proposed additional water supply could create a large number of new housing units, employment increases and associated population. While it is possible that new development in certain areas could in some cases result in the displacement of older dwellings or relocation of individuals, no substantial redevelopment or relocation is anticipated. Growth inducement and growth related indirect impacts are potentially significant and will be addressed further in the EIR.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, the proposed project would not induce substantial population growth, nor would it displace a substantial number of people or existing houses. Therefore, no indirect impacts to population and housing would result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project would not induce substantial population growth, nor would it displace a substantial number of people or existing houses. Therefore, no indirect impacts to population and housing would result from implementation of the proposed project.

Public Services Impacts

Direct Impacts

Castaic Lake Water Agency - Public services within the CLWA service area are provided by a variety of state, regional and local agencies including, although not limited to the following: California Department of Forestry, California Highway Patrol, County of Los Angeles, County of Ventura, and the City of Santa Clarita. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. In addition, the proposed project would not create direct changes in demand for public services that would require the construction or modification of governmental facilities to maintain acceptable response service ratios, response times or other performance objectives. Therefore, no direct impacts to public services within the CLWA service area would result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Public services within the KCWA and WRMWSD service areas are provided by a variety of state, regional and local agencies including, although not limited to: California Department of Forestry, California Highway Patrol, Kern County, and the City of Bakersfield. Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. In addition, the proposed project would not create direct changes in the demand for public services that would require the construction or modification of governmental facilities to maintain acceptable response service ratios, response times or other performance objectives. Therefore, no direct impacts to public services within the KCWA or WRMWSD service areas would result from implementation of the proposed project.

State Water Project and Associated Facilities - Public services associated with the SWP facilities are provided by a variety of state, regional and local agencies including, although not limited to the following, California Department of Forestry and California Highway Patrol. Implementation

of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. The proposed project would not create direct changes in the demand for public services that would require the construction or modification of governmental facilities to maintain acceptable response service ratios, response times or other performance objectives. Therefore, no direct impacts to public services within the SWP and associated facilities would result from implementation of the proposed project.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to public services due to potential land use changes as a result of development in the CLWA service area. Potential development within the CLWA service area that could be served by this additional water supply could increase the population within the CLWA service area. As a result, additional demands could be generated for public facilities (e.g., fire stations, police stations, schools, parks, or other facilities) and services that could result in expansion of facilities or construction of new facilities that could have potentially significant impacts on the environment. These impacts are considered potentially significant. Potential development within the CLWA service area accommodated by this additional water supply could increase human activity in high fire hazard areas. Development plans would be required to incorporate or address adequate fire protection infrastructure, fire stations and water systems, as well as other fire protection techniques such as adequate clear zones.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas or create increased demands for public services, no indirect impacts to public services would result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project would not indirectly create changes in the demand for public services. Therefore, no indirect impacts to public services would result from implementation of the proposed project.

Recreation Impacts

Direct Impacts

Castaic Lake Water Agency - Recreational resources in the CLWA service area consist of state, county/regional and local parks, and designated regional and local recreational trails. The Los Angeles County Department of Parks and Recreation provides local parks and recreation facilities for northwestern Los Angeles County residents and provides regional parks for all residents of the county. The Ventura County Parks Department provides this function for eastern Ventura County portions of the CLWA service area. The City of Santa Clarita provides local parks within the city boundaries. Regional recreation areas under the control of the federal government include the Angeles National Forest, the Los Padres National Forest, and the Santa Monica Mountains National Recreation Area. Implementation of the proposed project

would not require land disturbance nor would it directly change the existing land uses within the CLWA service area or directly create increased demands for recreation. In addition, the proposed project would not directly increase the use of exiting recreational facilities, nor does the project require or include the construction or modification of recreational facilities. Therefore, no direct impacts to recreation resources within the CLWA service area are anticipated to result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Parks and/or recreation services within Kern County are under the jurisdiction of the county, eight recreation and park districts, other special districts, cities, school districts, the state and federal governments, and private organization. Three state parks, Fort Tejon State Historical Park, Tule Elk State Reserve, and Red Rock Canyon State Park, and two national forests, Los Padres National Forest and Sequoia National Forest, along with other federal lands, are located, in total or in part, within Kern County. Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. Therefore, implementation of the proposed project would not create changes in demand for recreation, nor does the project require or include the construction or modification of recreational facilities. No direct impacts to recreation resources within the KCWA or WRMWSD service areas are expected to result from implementation of the proposed project.

State Water Project and Associated Facilities - The SWP facilities provide year-round recreational opportunities including fishing, boating, swimming, camping, hiking, and wildlife viewing within both the California Aqueduct (limited to fishing at designated locations only) and associated reservoirs. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. With implementation of the proposed project, and depending on the volume and schedule of water deliveries to CLWA, reservoir levels in San Luis Reservoir and Castaic Lake could change, which could in turn affect recreation use. Although, changes in lake levels at both San Luis Reservoir and Castaic Lake as a result of implementation of the proposed project are expected to be minor, and are not expected to have a substantial adverse effect on the environment or recreation facilities. Other changes in SWP facilities, such as changes in aqueduct flow associated with implementation of the proposed project are not expected to affect recreation in a manner that would alter the environment. As implementation of the proposed project is not anticipated to result in substantial changes that would adversely affect recreation, and, as implementation of the proposed project would not change the SWP operating criteria, the proposed project is anticipated to result in a less than significant impact to recreation resources within the SWP and associated facilities. In addition, the proposed project would not directly increase the use of exiting recreational facilities, nor does the project require or include the construction or modification of recreational facilities.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to recreation resources due to potential land use changes as a result of development in the CLWA service area. Opportunities for recreation on developed sites and natural recreation such as hiking, jogging, bicycling, water-based recreation and horseback riding are available within the CLWA service area. Potential development within the CLWA service area accommodated by this additional water supply could have impacts on these and other existing recreation opportunities within the CLWA service area. Increased demand on recreational facilities could exacerbate existing shortfalls in local and regional park space. Residential development is subject to applicable requirements to provide public park sites or in-lieu fees based on population-based ratios (e.g., Quimby Act requirements). These impacts are considered potentially significant given the potential for increased demand and impacts to the environment from facility expansion, such as construction of developed recreation areas.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, the proposed project would not increase the use of existing recreational facilities, nor does the project require or include the construction or modification of recreational facilities. Therefore, no indirect impacts to recreation resources would result from implementation of the proposed project.

State Water Project and Associated Facilities - Implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities. As a result of land use changes within the CLWA service area, the proposed project may increase the recreational use of Castaic Lake. This increase is not anticipated to require the construction or modification of recreational facilities, and therefore, would result in less than significant indirect impact to recreational resources within the SWP and associated facilities.

Traffic/Transportation Impacts

Direct Impacts

Castaic Lake Water Agency - The circulation system in the Santa Clarita Valley is limited by the topography of the area including steep slopes, canyons, and the Santa Clara River. Local roadways are under the jurisdiction of the City of Santa Clarita and/or Los Angeles and Ventura counties. The primary agency responsible for the planning, design, construction, and operation of regional transportation systems in the Santa Clarita Valley is the California Department of Transportation (CalTrans) District 7. Greyhound, Amtrak, and Santa Clarita Transit provide passenger bus service within the CLWA service area. The closest commercial airport to the CLWA service area is the Burbank Glendale Pasadena Airport, approximately 15 miles from the City of Santa Clarita. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses or traffic generating activities within the CLWA service area. Therefore, no direct impacts to transportation and traffic within the CLWA service area are anticipated to result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Planning, design, construction, and operation of regional transportation systems in the Kern County area are primarily the responsibility of CalTrans, District 6. General aviation airports are scattered throughout Kern County, but the major commercial airport is Meadows Field, located northwest of Bakersfield. Passenger bus and train service are available to and from Bakersfield, provided by Greyhound and Amtrak. The WRMWSD is served by several major transportation routes service area, although the service area does not contain any commercial or general aviation airport facilities, nor is it served by scheduled passenger rail or bus services. Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated agriculture in the WRMWSD service area served by SWP water, nor would it change existing land uses within the WRMWSD service area. Therefore, implementation of the proposed project would not materially affect traffic generating activities within the KCWA and WRMWSD service area, and is anticipated to result in a less than significant impact to transportation and traffic within the KCWA and WRMWSD service areas.

State Water Project and Associated Facilities - The SWP and associated facilities are served by, lie adjacent to, or are traversed by, several major transportation routes. Numerous general aviation airports exist within the regions traversed by the SWP and associated facilities. Passenger bus and rail service are generally available in the urbanized areas traversed by the SWP and associated facilities. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Therefore, implementation of the proposed project would not affect traffic generating activities within the SWP and associated facilities, and would have no direct impacts to transportation and traffic within, or related to, the SWP and associated facilities.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to transportation and traffic due to potential land use changes as a result of development in the CLWA service area. Potential development within the CLWA service area that could be served by this additional water supply could result in a substantial increase in vehicle trips within and adjacent to the CLWA service area. Increased vehicle trips would affect local and regional roads resulting in an increase in traffic congestion, and may exceed of level of service standards and volume to capacity ratios on roads. In addition, increased vehicle trips may result in increased hazards due to a design failure or incompatible uses. Land use and associated traffic changes may also result in inadequate emergency access, inadequate parking capacity and conflict with adopted policies, plans, or programs supporting alternative transportation. These impacts are considered potentially significant. Changes in demand for air travel and changes in air traffic patterns are anticipated to be less than significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes or other traffic

generating activities within the KCWA or WRMWSD service areas, no indirect impacts to transportation and traffic are expected to result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, the proposed project would not indirectly result in changes to traffic generating activities. Therefore, no indirect impacts to transportation and traffic are expected to result from implementation of the proposed project.

Utilities & Service System Impacts

Direct Impacts

Castaic Lake Water Agency - Utilities and service systems associated with the CLWA service area are provided by a variety of state, regional and local agencies, along with a variety of private agencies. Implementation of the proposed project would not require land disturbance nor would it directly change the existing land uses within the CLWA service area. No aspect of the proposed project would directly exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, require or result in the construction of new storm water drainage facilities or expansion of existing facilities, exceed water supplies available to serve the project, exceed existing wastewater treatment capacity, exceed existing landfill capacity; and/or not comply with federal, state, and local statutes and regulations related to solid waste. No direct impacts to utilities and service systems within the CLWA service area are anticipated to result from implementation of the proposed project.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - Utilities and service systems associated with the KCWA and WRMWSD service areas are provided by a variety of state, regional and local agencies, along with a variety of private agencies. Implementation of the proposed project would not require the construction of new facilities or modification of existing KCWA and WRMWSD facilities, nor would implementation of the proposed project change the existing operation of these facilities. Implementation of the proposed project would not materially affect irrigated acreage in the WRMWSD service area served by SWP water on an average annual basis, nor would it change existing land uses within the WRMWSD service area. No aspect of the proposed project would directly exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, require or result in the construction of new storm water drainage facilities or expansion of existing facilities, exceed water supplies available to serve the project, exceed existing wastewater treatment capacity, exceed existing landfill capacity; and/or not comply with federal, state, and local statutes and regulations related to solid waste. Therefore, no direct impacts to utilities and service systems within the KCWA or WRMWSD service areas are expected to result from implementation of the proposed project.

State Water Project and Associated Facilities - Utilities and service systems associated with the SWP facilities are provided by a variety of state (including DWR), regional and local agencies, along with a variety of private agencies. Energy needed to operate the SWP comes from a combination

of SWP hydroelectric facilities, the Reid Gardner coal-fired generation plant, and power purchased from other utilities. As part of the operation of the SWP, DWR both buys and sells energy under long and short-term contracts. Implementation of the proposed project would not result in construction or modification of existing SWP facilities. In addition, implementation of the proposed project would not substantially change the current operation of the SWP and associated facilities, nor would it change the operating criteria of the SWP and associated facilities. Current and future availability of a reliable supply of electricity at a stable cost to consumers is uncertain given the current energy environment. Energy utilized to deliver water associated with the proposed project to CLWA rather than KCWA would vary depending on the amount of SWP water delivered to CLWA in any one year. Some power would be recovered at the Warne and Castaic power plants, as water flows down the California Aqueduct from the south side of the Tehachapi Mountain Range to Castaic Lake. The proposed project may result in less than significant environmental impacts with respect to energy requirements to transport water that could have been delivered to WRMWSD to CLWA. These potential impacts will be further evaluated in the EIR.

No aspect of the proposed project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, require or result in the construction of new storm water drainage facilities or expansion of existing facilities, exceed water supplies available to serve the project, exceed existing wastewater treatment capacity, exceed existing landfill capacity; and/or not comply with federal, state, and local statutes and regulations related to solid waste.

Indirect Impacts

Castaic Lake Water Agency - There is the potential for indirect impacts to utilities and service systems due to potential land use changes as a result of development in the CLWA service area. Potential development within the CLWA service area that could be served by this additional water supply could increase the population within the CLWA service area. As a result, additional demands could be generated for utilities and service systems including water and wastewater treatment, storm water drainage facilities, solid waste disposal/landfills, energy and other utilities. These impacts are considered potentially significant.

Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District - As the implementation of the proposed project would not result in land use changes within the KCWA or WRMWSD service areas, no indirect impacts to utilities and service systems would result from implementation of the proposed project.

State Water Project and Associated Facilities - As implementation of the proposed project would not result in construction or modification of existing SWP facilities, nor would it change the operating criteria of the SWP and associated facilities, no indirect impacts to utilities and service systems would result from implementation of the proposed project.

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ACRONYMS

AF	acre-feet
AFY	acre-feet per year
BMWD	Berrenda Mesa Water District
CEQA	California Environmental Quality Act
CLWA	Castaic Lake Water Agency
EIR	Environmental Impact Report
ESFP	Earl Schmidt Filtration Plant
DWR	California Department of Water Resources
KCWA	Kern County Water Agency
M&I	Municipal and Industrial
NOP	Notice of Preparation
SCAB	South Coast Air Basin
SJVAB	San Joaquin Valley Air Basin
SWP	State Water Project
SWSD	Semitropic Water Storage District
TMDL	total maximum daily load
USBR	United States Department of the Interior, Bureau of Reclamation
WRMWSD	Wheeler Ridge-Maricopa Water Storage District

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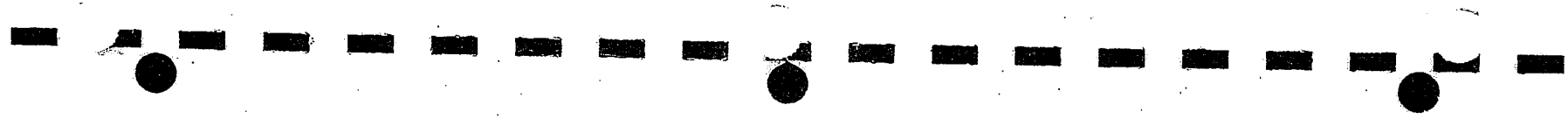
PUBLIC COMMENTS ON THE NOP



STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
120 SO. SPRING ST.
LOS ANGELES, CA 90012
PHONE: (213) 897-4429
FAX: (213) 897-1337

RECEIVED
JAN 30 2003

Flex your power!
Be energy efficient!

IGR/CEQA No. 030162AL
Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-feet of State Water Project Table A Amount from Kern County Water Agency
Vic. LA-5 / Various Locations

January 28, 2003

Mr. Dan Masnada
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350-2173

Dear Mr. Masnada:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed project is the transfer of 41,000 acre-feet of State Water Project Table A amount from Kern County Water Agency, and its member district the Wheeler Ridge-Maricopa Water Storage District, to the Castaic Lake Water Agency, CLWA.

Please discuss the transportation method for transferring the water to Castaic Lake Water Agency. Additionally, please discuss the potential indirect traffic impact and mitigation as a result of potential development within and adjacent to the CLWA service area that could be served by this additional water supply.

If you have any questions, please feel free to contact me at (213) 897-4429 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 030162AL.

Sincerely,

STEPHEN J. BUSWELL
IGR/CEQA Branch Chief

Steve Buswell/AL

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS
Main Office
818 West Seventh Street
12th Floor
Los Angeles, California
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t (213) 236-1800
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Orange County: Charles Smith, Orange County • Ron Bates, Los Alamitos • Art Brown, Buena Park • Lou Bone, Tustin • Cathryn DeYoung, Laguna Niguel • Richard Dixon, Lake Forest • Alta Duke, La Palma • Shirley McCracken, Anaheim • Bev Perry, Brea • Tod Ridgeway, Newport Beach
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San Bernardino County: Paul Biane, San Bernardino County • Bill Alexander, Rancho Cucamonga • Lawrence Dale, Barstow • Lee Ann Garcia, Grand Terrace • Susan Longville, San Bernardino • Gary Ovitt, Ontario • Deborah Robertson, Rialto
Ventura County: Judy Mikels, Ventura County • Glen Becerra, Simi Valley • Carl Morehouse, San Buenaventura • Toni Young, Port Hueneme
Riverside County Transportation Commission: Robin Lowe, Hemet
Ventura County Transportation Commission: Bill Davis, Simi Valley

RECEIVED
FEB 21 2003
By

February 19, 2003

Mr. Dan Masnada
General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350 - 2173

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre Feet of State Water Project Table A Amount from Kern County Water Agency – SCAG No. I 20030030**

Dear Mr. Masnada:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre Feet of State Water Project Table A Amount from Kern County Water Agency** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Notice of Preparation** and have determined that the proposed Project is regionally significant per SCAG mandates for regionally significant projects that directly relate to policies and strategies contained in the Regional Comprehensive Plan and Guide (RCPG) and Regional Transportation Plan (RTP). CEQA requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and **regional plans (Section 15125 [d])**. If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided.

Policies of SCAG's Regional Comprehensive Plan and Guide and Regional Transportation Plan, which may be applicable to your project, are outlined in the attachment. **We expect the Draft EIR to specifically cite the appropriate SCAG policies and address the manner in which the Project is consistent with applicable core policies or supportive of applicable ancillary policies. Please use our policy numbers to refer to them in your Draft EIR. Also, we would encourage you to use a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the policy with the Proposed Project.**

Please provide a minimum of 45 days for SCAG to review the Draft EIR when this document is available. If you have any questions regarding the attached comments, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

COMMENTS ON THE PROPOSAL TO DEVELOP A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT TRANSFER SCAG NO. I 20030030

PROJECT DESCRIPTION

The proposed Project considers the transfer of 41,000 acre-feet (AF) of State Water Project (SWP) Table A amount from Kern County Water Agency (KCWA), and its member district the Wheeler Ridge-Maricopa Water Storage District, to the Castaic Lake Water Agency (WRMWSD). The proposed Project also establishes the right to use the 41,000 acre-feet as part of Castaic Lake Water Agency's State Water Project Table A amount of 95,200 acre-feet pursuant to a Trial Court judgement on remand. Also, the 41,000 AF has been delivered to CLWA from KCWA through agreements including KCWA and its member district, the WRMWSD, as well as the California Department of Water Resources (DWR).

The proposed Project also includes possession of SWP contractual rights that provide a means of water storage and delivery of water associated with the Table A amount to CLWA. The proposed project results in a total CLWA SWP Table A amount of 95,200 AF. The SWP water is being transported from points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The proposed project does not include the construction of any additional SWP facilities.

CONSISTENCY WITH REGIONAL COMPREHENSIVE PLAN AND GUIDE POLICIES

The **Growth Management Chapter (GMC)** of the Regional Comprehensive Plan and Guide (RCPG) contains the following policies that are particularly applicable and should be addressed in the Draft EIR for the Castaic Lake Water Agency Supplemental Water Project Tansfer.

3.03 The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL

STANDARD OF LIVING

The Growth Management goals to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, strengthen the regional strategic goal to stimulate the regional economy. The evaluation of the proposed project in relation to the following policies would be intended to guide efforts toward achievement of such goals and does not infer regional interference with local land use powers.

3.09 Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.

3.10 Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL QUALITY OF LIFE

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.18 Encourage planned development in locations least likely to cause environmental impact.

3.20 Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.

3.21 Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.

3.22 Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.

3.23 Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would

reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.

GMC POLICIES RELATED TO THE RCPG GOAL TO PROVIDE SOCIAL, POLITICAL, AND CULTURAL EQUITY

The Growth Management Goal to develop urban forms that avoid economic and social polarization promotes the regional strategic goal of minimizing social and geographic disparities and of reaching equity among all segments of society. The evaluation of the proposed project in relation to the policy stated below is intended guide direction for the accomplishment of this goal, and does not infer regional mandates and interference with local land use powers.

3.27 *Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.*

REGIONAL TRANSPORTATION PLAN

The **Regional Transportation Plan (RTP)** also has goals, objectives, policies and actions pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. Among the relevant goals, objectives, policies and actions of the RTP are the following:

Core Regional Transportation Plan Policies

4.02 *Transportation investments shall mitigate environmental impacts to an acceptable level.*

4.04 *Transportation Control Measures shall be a priority.*

4.16 *Maintaining and operating the existing transportation system will be a priority over expanding capacity.*

AIR QUALITY CHAPTER CORE ACTIONS

The **Air Quality Chapter** core actions related to the proposed project includes:

5.07 Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.

5.11 Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.

OPEN SPACE CHAPTER ANCILLARY GOALS

Public Health and Safety

9.04 Maintain open space for adequate protection of lives and properties against natural and man-made hazards.

9.05 Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.

9.06 Minimize public expenditure for infrastructure and facilities to support urban type uses in areas where public health and safety could not be guaranteed.

Resource Protection

9.08 Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.

WATER QUALITY CHAPTER RECOMMENDATIONS AND POLICY OPTIONS

The **Water Quality Chapter** core recommendations and policy options relate to the two water quality goals: to restore and maintain the chemical, physical and biological integrity of the nation's water; and, to achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

11.02 Encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.

11.05 Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.

11.06 Clean up the contamination in the region's major groundwater aquifers since its water supply is critical to the long-term economic and environmental health of the region. The financing of such clean-ups should leverage state and federal resources and minimize significant impacts on the local economy.

11.07 Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.

CONCLUSIONS

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA.

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Roles and Authorities

THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG) is a ***Joint Powers Agency*** established under California Government Code Section 6502 et seq. Under federal and state law, SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency (RTPA), and a Metropolitan Planning Organization (MPO). SCAG's mandated roles and responsibilities include the following:

SCAG is designated by the federal government as the Region's ***Metropolitan Planning Organization*** and mandated to maintain a continuing, cooperative, and comprehensive transportation planning process resulting in a Regional Transportation Plan and a Regional Transportation Improvement Program pursuant to 23 U.S.C. '134, 49 U.S.C. '5301 et seq., 23 C.F.R. '450, and 49 C.F.R. '613. SCAG is also the designated ***Regional Transportation Planning Agency,*** and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080 and 65082 respectively.

SCAG is responsible for developing the demographic projections and the integrated land use, housing, employment, and transportation programs, measures, and strategies portions of the ***South Coast Air Quality Management Plan,*** pursuant to California Health and Safety Code Section 40460(b)-(c). SCAG is also designated under 42 U.S.C. '7504(a) as a ***Co-Lead Agency*** for air quality planning for the Central Coast and Southeast Desert Air Basin District.

SCAG is responsible under the Federal Clean Air Act for determining ***Conformity*** of Projects, Plans and Programs to the State Implementation Plan, pursuant to 42 U.S.C. '7506.

Pursuant to California Government Code Section 65089.2, SCAG is responsible for ***reviewing all Congestion Management Plans (CMPs) for consistency with regional transportation plans*** required by Section 65080 of the Government Code. SCAG must also evaluate the consistency and compatibility of such programs within the region.

SCAG is the authorized regional agency for ***Inter-Governmental Review*** of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12,372 (replacing A-95 Review).

SCAG reviews, pursuant to Public Resources Code Sections 21083 and 21087, Environmental Impacts Reports of projects of regional significance for consistency with regional plans [California Environmental Quality Act Guidelines Sections 15206 and 15125(b)].

Pursuant to 33 U.S.C. '1288(a)(2) (Section 208 of the Federal Water Pollution Control Act), SCAG is the authorized ***Areawide Waste Treatment Management Planning Agency.***

SCAG is responsible for preparation of the ***Regional Housing Needs Assessment,*** pursuant to California Government Code Section 65584(a).

SCAG is responsible (with the Association of Bay Area Governments, the Sacramento Area Council of Governments, and the Association of Monterey Bay Area Governments) for preparing the ***Southern California Hazardous Waste Management Plan*** pursuant to California Health and Safety Code Section 25135.3.

Revised July 2001

COUNTY OF LOS ANGELES
DEPARTMENT OF PARKS AND RECREATION

RECEIVED
MAR 06 2003
By

March 4, 2003

Mr. Dan Masnada, General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350-2173

Dear Mr. Masnada:

NOTICE OF PREPARATION FORCASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT FROM KERN COUNTY WATER AGENCY

The Above stated Notice of Preparation for the Castaic Lake Water Agency Supplemental Water Project has been reviewed for its potential impact on the Parks and Recreation facilities. Transferring the water through the California Aqueduct will not impact the facilities under the jurisdiction of this Department as described in the Notice of Preparation. However, we would appreciate review of the Draft and Final Environmental Impact Reports for internal information with this Department.

Thank you for including this Department in the review of the Notice of Preparation. If we may be of further assistance, you may contact Ms. Lillie Lowery, Departmental Facilities Planner I, at (213) 738-3235.

Sincerely,

Lillie Lowery

Lillie Lowery, Departmental Facilities Planner I For
Joan Rupert, Section Head
Environmental and Grants Section

C: Lillie Lowery, DPR

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
www.ladpw.org

JAMES A. NOYES, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: W-0

February 3, 2003

Mr. Dan Masnada, General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350-2173

LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 36, VAL VERDE
NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT
COMMENTS

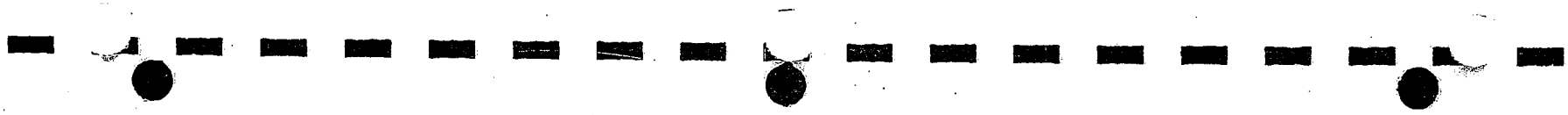
Thank you for the opportunity to review your Notice of Preparation of a Draft Environmental Impact Report for the transfer of 41,000 acre-feet of State Water Project Table A Amount from Kern County Water Agency to you. We have no comments to offer.

Very truly yours,

JAMES A. NOYES
Director of Public Works

for BRIAN D. HOOPER
Assistant Deputy Director
Waterworks and Sewer Maintenance Division

GMP:lb
WW3262



COUNTY OF LOS ANGELES
FIRE DEPARTMENT
1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 890-4330

RECEIVED
MAR 0 3 2003
By

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

February 28, 2003

Dan Masnada, General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Dear Mr. Masnada:

NOTICE PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT CASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT, TRANSFER OF 41,000-ACRE FEET OF STATE WATER PROJECT TABLE A AMOUNT FROM KERN COUNTY WATER AGENCY, "CITY OF CASTAIC" -- (EIR #1586/2003)

The Notice of Preparation for the Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project has been reviewed by the Planning Section, Land Development Unit, and Forestry Division of the County of Los Angeles Fire Department. The following are their comments:

LAND DEVELOPMENT UNIT:

The County of Los Angeles Fire Department, Land Development Unit appreciates the opportunity to comment on this project. However, this project does not propose structures or any other improvements that appear to have a significant impact that requires a comment from the Land Development Unit.

Should any questions arise regarding subdivision, water systems, or access please contact Inspector J. Scott Greenelsh at (323) 890-4235.

FORESTRY DIVISION:

The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed in the Environmental Impact Report.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

David R. Leininger

DAVID R. LEININGER, CHIEF, FORESTRY DIVISION
PREVENTION BUREAU

DRL:lc

County of Los Angeles Public Library
7400 East Imperial Hwy., P.O. Box 7011, Downey, CA 90241-7011
(562) 940-8461, TELEFAX (562) 803-3032

MARGARET DONNELLAN TODD
COUNTY LIBRARIAN

February 25, 2003

Castaic Lake Water Agency
Attn: Dan Masnada, General Manager
27234 Bouquet Canyon Road
Santa Clarita, CA 91350-2173

CASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT TRANSFER FROM KERN COUNTY WATER AGENCY REQUEST FOR COMMENTS

Dear Mr. Masnada:

This is in response to your request for comments on the above-referenced project. We have reviewed the material and are providing the following comments concerning library service.

The project area is in the Santa Clarita Valley Bookmobile service area, located at 22704 West Ninth St., Santa Clarita, CA 91321. The expansion project does not propose development of new residential units, therefore, there will be no impact on library service. Impact on library service is based on an increase in population, which triggers the need for additional facility space, books, and other materials. Any increase in population would create an impact on library service.

Thank you for the opportunity to respond to the Notice of Preparation. If you have any questions or need additional information please call me at (562) 940-8455.

Sincerely,

Michele Mathieu

Michele Mathieu
Administrative Assistant

:mm

c: Margaret Donnellan Todd
David Flint

LEROY D. BACA, SHERIFF

County of Los Angeles
Sheriff's Department Headquarters
4700 Ramona Boulevard
Monterey Park, California 91754-2169
(805) 255-1121

RECEIVED
JAN 2003
COUNTY OF LOS ANGELES CALIFORNIA

January 27, 2003

Castaic Lake Water Agency
Attn: Dan Masnada, General Manager
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Dear Mr. Masnada:

NOTICE OF PREPARATION
CASTAIC LAKE WATER AGENCY
TRANSFER OF 41,000 ACRE-FEET OF STATE WATER

I am in receipt of your letter dated January 22, 2003, regarding the Castaic Lake Water Agency and its acquisition of 41,000 acre feet of water from the Kern County Water Agency.

I have reviewed the document and do not anticipate any impacts on our agency as a result of the implementation of this project.

If you have any further questions please feel free to call me at (661) 255-1121 ext. 5101 or Deputy Patrick Rissler at ext. 5159.

Sincerely,

LEROY D. BACA, SHERIFF

Donald A. Rodriquez, Captain
Santa Clarita Valley Station

DAR:par

A Tradition of Service

county of ventura

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APR 14 2003
By

PUBLIC WORKS AGENCY
RONALD C. COONS
Agency Director

Transportation Department
Wm. Butch Britt, Director
Water Resources & Development Department
John C. Crowley, Director
Central Services Department
Lane B. Holt, Director
Environmental & Energy Resources Department
Kay Martin, Director
Watershed Protection District
Jeff Pratt, Director
Engineering Services Department
Alec T. Pringle, Director

April 8, 2003

Castiac Lake Water Agency
Mr. Dan Masnada, General Manager

27234 Bouquet Canyon Rd.
Santa Clarita, Ca 91350

SUBJECT: Supplemental Water Project Transfer, 41,000 Acre Feet of Water from Kern County Water Agency to Castaic Water Agency, State Water Project

Dear Mr. Masnada :

The Ventura County Watershed Protection District (District) has reviewed the submittal for the transfer of water from Kern County Water Agency to the Castiac Water Agency. The project has no existing or proposed direct connections to District jurisdictional facilities and does not indicate any encroachments to District Rights of Way. The District has no comments with respect to flood control and NPDES issues. If you have questions regarding this review, please call the undersigned at 654-2906.

Very truly yours,

Kevin Keivanfar, P.E.
Permit Engineer, Permit Section
Flood Control Department

KK/tt

LOG NO. 20030122-006

Friends of the Santa Clara River

660 Randy Drive, Newbury Park, California 91320-3036 • (805) 498-8328

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California Native Plant Society
L.A./Santa Monica Mountains Chapter

Santa Clarita Organization for Planning the Environment (SCOPE)

Sierra Club
Angeles Chapter
Los Padres Chapter

Surfrider Foundation

Audubon Society
Ventura Chapter

Ventura County Environmental Coalition

February 20, 2003

Castaic Lake Water Agency
Attention: Dan Masnada, General Manager
27234 Bouquet Canyon Road
Santa Clarita, CA 91350-2173

Re: Notice of Preparation, EIR for 41,000 Acre-feet Transfer from Kern County Water Agency, Dated January 22, 2003

Dear Mr. Masnada,

Friends of the Santa Clara River (FSCR) offers the following comments on the referenced Notice of Preparation (NOP).

The Castaic Lake Water Agency (CLWA) is not the proper Lead Agency to prepare an Environmental Impact Report (EIR) for this project under the California Environmental Quality Act.

The 1995 Monterey Agreement between the California Department of Water Resources (DWR) and water contractors of the State Water Project was put in place to control transfers of the type described in the subject document. There is at present no Monterey Agreement EIR because of the PCL decision of September 2000, which held that the Monterey Agreement EIR prepared by CCWA was inadequate. The court held that the DWR was the proper Lead Agency for this Agreement because only the DWR has the statewide perspective needed to evaluate the environmental impacts to the entire water distribution system.

The EIR for the 41,000 acre-feet transfer must tier from a certified Monterey Agreement EIR, which does not currently exist. This was indeed suggested by the Second Appellate District Court decision of January 2002 in the case brought against CLWA by FSCR. Page 19 of this decision states that "Respondent may be able to cure the PCL problem by awaiting action by the state DWR complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or Addendum to EIR (Guidelines 15162, 15163, 15164) tiering on a new Monterey Agreement EIR.".

Since CLWA cannot legally be the Lead Agency for the subject transfer, the only legitimate way for CLWA to proceed with EIR preparation is to await DWR's preparation and certification of a Monterey Agreement EIR.

Thank you for the opportunity to comment.

Sincerely,

Ron Bottorff, Chair

cc: California Department of Water Resources

RECEIVED
2/24/03
LP

SCOPE

Santa Clarita Organization for Planning and the Environment

TO PROMOTE, PROTECT AND PRESERVE THE ENVIRONMENT, ECOLOGY AND QUALITY OF LIFE IN THE SANTA CLARITA VALLEY

POST OFFICE BOX 1182, SANTA CLARITA, CA 91386

2-23-03

Attn: Dan Masnada, General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Rd.
Santa Clarita, Ca. 91350-2173

Re: Notice of Preparation - 41,000 AF Water Transfer EIR

Dear Mr.Masnada:

We are concerned that your Notice of Preparation ignores the ruling by the 2nd District Appellate Court set which set aside the original EIR in this matter. That EIR was set aside because the Monterey Agreement EIR on which it was tiered had been set aside. The new Monterey Agreement EIR has not yet been completed, therefore CLWA must wait to complete their new document until this program EIR is completed.

Further, we protest your Agency's continued reliance on this 41,000AF transfer in your Urban Water Management Plan and to support, new, additional and unapproved development. Such actions make a mockery of the EIR process. No valid evaluation of impacts can be discussed, if you are proceeding with the project no matter what is disclosed. This is illegal and is not supported by Judge Yaffee's decision.

An EIR that purports to address all impacts statewide, thus eliminating the need for a program EIR on the Monterey Agreement, must be prepared by the Dept. of Water Resources as the lead agency. The 3rd District Appellate Court, in its decision on the Monterey Agreement EIR, found that Central Coast Water Agency, was the wrong lead agency. We urge you not to attempt to move forward using the same judicial error for which a previous action, very well known to you, was set aside as it will be a waste of the public's time and money.

We therefore ask that you do not proceed with this EIR as the lead agency, since this action is clearly illegal. If you wish to proceed, then the Dept. of Water Resources must be the lead agency for the EIR.

Sincerely,

Pat Saletore

Pat Saletore
Faxed to 661 297-1611

SIERRA CLUB
FOUNDED 1892
Angeles Chapter

3435 Wilshire Boulevard
Suite 320
Los Angeles, CA 90010-1904

(213) 387-4287 phone
(213) 387-5383 fax
www.angeles.sierraclub.org

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FEB 25 2003
By

2-22-03

Castaic Lake Water Agency
Attn: Dan Masnada, General Manager
27234 Bouquet Canyon Rd.
Santa Clarita, Ca. 91350-2173

Re: Notice of Preparation
41,000 AF Water Transfer EIR

Dear Sir:

As you are well aware, the 2nd District Appellate Court set aside the original EIR in this matter because the Monterey Agreement EIR on which it was tiered had been set aside. The new Monterey Agreement EIR has not yet been completed, therefore CLWA must wait to complete their new document until this program EIR is completed.

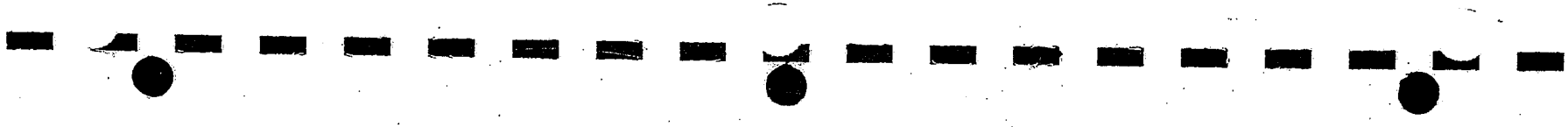
Further, if the water transfer EIR purports to address all impacts statewide, thus eliminating the need for a program EIR on the Monterey Agreement, then the Dept. of Water Resources must be the lead agency. The 3rd District Appellate Court, in its decision on the Monterey Agreement EIR, found that Central Coast Water Agency (then headed by yourself, Mr. Masnada), was the wrong lead agency. The Sierra Club finds it incredible that you would attempt to move forward using the same judicial error for which a previous action, very well known to you, was set aside. You are wasting the public's time and money.

We therefore ask that you do not proceed with this EIR as the lead agency, since this action is clearly illegal. If you wish to proceed, then the Dept. of Water Resources must be the lead agency for the EIR.

Sincerely,

Dr. Gordon LaBedz
Conservation Chair

Faxed to 661 297-1611
Hard copy to follow by regular mail



In re: Castaic Lake Water Agency)
Supplemental Water Project)
Transfer of 41,000 Acre-feet)
Water Project Table A Amount from)
Kern County Water Agency EIR.)
)
)
)

Public Comment Hearing Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-feet Water Project Table A Amount from Kern County Water Agency EIR, at Castaic Water Agency, 27234 Bouquet Canyon Road, Santa Clarita, California, scheduled for 7:00 p.m., Monday, February 10, 2003, before Lisa DiGiovanni, Certified Shorthand Reporter No. 11969.

BARKLEY
Court Reporters

A P P E A R A N C E S

LISBETH A. SPRINGER, A.I.C.P.
SCIENCE APPLICATIONS INTERNATIONAL CORPORATION
525 Anacapa Street
Santa Barbara, California 93101
(805) 564-6154
springerl@saic.com

ALSO PRESENT:
ALICIA GASDICK
DAN MASNADA

BARKLEY
Court Reporters

SANTA CLARITA, CALIFORNIA

MONDAY, FEBRUARY 10, 2003; 7:32 P.M.

MS. SPRINGER: My name is Lisbeth Springer. We are here to open the scoping meeting for the Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-feet Water Project Table A Amount from Kern County Water Agency EIR. The date is February 10th, 2003. No members of the public are present to provide comments. It's 7:32, and since no one has appeared from the public to provide comments, we will go ahead and close the scoping meeting.

(Meeting adjourned at 7:32 p.m.)

BARKLEY
Court Reporters

Appendix B

Biological Resources

Table 1. Sensitive Plant Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 1 of 3)

Scientific Name/ Common Name	*Regulatory Status Federal/State/CNPS*	*Habitat and Regional Occurrence*[1]
Federally or State-Listed Rare, Threatened or Endangered Species		
Atriplex tularensis Bakersfield smallscale	FSC/E/1B	Chenopod scrub; possibly extinct, the only recent reported occurrence at Kern Lake Preserve (within the WRMWSD) may be *A. serenana* and not *A. tularensis* (CNPS 2001); KCVFHCP.
Caulanthus californicus California jewel-flower	E/E/1B	Sandy soils in chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; historically reported from within the WRMWSD about 8 miles north of Taft, but believed to be extirpated from this location (CNDDB 2002); KCVFHCP.
Eremalche kernensis Kern mallow	E/-/1B	Chenopod scrub, valley and foothill grassland; KCVFHCP.
Eriastrum hooveri Hoover's eriastrum	T/-/4	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; possible in grassland-scrub habitats; KCVFHCP.
Fritillaria striata Striped adobe-lily	FSC/T/1B	Usually clay soils in cismontane woodland, valley and foothill grassland; known only from Kern and Tulare counties, reported from the Tejon Ranch area within the WRMWSD; KCVFHCP.
Monolopia (= Lembertia) congdonii San Joaquin woollythreads	E/-/1B	Chenopod scrub, valley and foothill grassland; KCVFHCP.
Opuntia basilaris var. *treleasei* Bakersfield beavertail cactus	E/E/1B	Chenopod scrub, cismontane woodland, valley and foothill grassland; several reported occurrences in the WRMWSD (CNDDB 2002); KCVFHCP.
Pseudobahia peirsonii San Joaquin adobe sunburst	T/E/1B	Found in adobe clay soils in cismontane woodland, valley and foothill grassland in Kern, Tulare and Fresno counties; KCVFHCP.
Federal Species of Special Concern and Species Listed by CNPS		
Antirrhinum ovatum Oval-leaved snapdragon	-/-/4	Clay or gypsum, often alkaline soils in chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland.
Atriplex cordulata Heartscale	FSC/-/1B	Found in saline or alkaline, sandy soils in chenopod scrub, meadows and seeps, valley or foothill grassland; reported from within the WRMWSD in the vicinity of the Buena Vista Lake Bed (CNDDB 2002); KCVFHCP.
Atriplex depressa Brittlescale	FSC/-/1B	Alkaline, clayey soils in chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools.
Atriplex vallicola Lost Hills crownscale	FSC/-/1B	Chenopod scrub, valley and foothill grasslands, vernal pools, alkaline soils; KCVFHCP.
Calochortus striatus Alkali mariposa lily	FSC/-/1B	Chaparral, chenopod scrub, Mojavean desert scrub, alkaline meadows and ephemeral washes; reported from the Buena Vista Aquatic Recreation Area (CNDDB 2002) within the WRMWSD.

Table 1. Sensitive Plant Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 2 of 3)

Scientific Name/ Common Name	*Regulatory Status Federal/State/CNPS*	*Habitat and Regional Occurrence*[1]
Calycadenia villosa Dwarf calycadenia	FSC/-/1B	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; believed extirpated from Kern County (CNPS 2001).
Canbya candida Pygmy poppy	-/-/4	Joshua tree "woodland," Mojavean desert scrub, pinyon and juniper woodland.
Cirsium crassicaule Slough thistle	FSC/-/1B	Chenopod scrub, marshes and swamps (sloughs), riparian scrub in Kings, Kern and San Joaquin counties; KCVFHCP.
Clarkia tembloriensis ssp. *calientensis* Vasek's clarkia	FSC/-/1B	Valley and foothill grassland; endemic to Kern County, known from three occurrences near Caliente Creek; KCVFHCP.
Cordylanthus mollis ssp. *hispidus* Hispid bird's-beak	FSC/-/1B	Alkaline areas in meadows and seeps, playas, valley and foothill grasslands; believed extirpated from much of the lower San Joaquin Valley, reported from the Tulare Basin within the WRMWSD (CNDDB 2002).
Delphinium recurvatum Recurved larkspur	FSC/-/1B	Cismontane woodland, chenopod scrub, valley and foothill grassland; reported from the WRMWSD (CNDDB 2002); KCVFHCP.
Erodium macrophyllum Round-leaved filaree	-/-/2	Cismontane woodland, valley and foothill grassland; reported from Wind Wolves Preserve within the WRMWSD (CNDDB 2002).
Eschscholzia lemmonii ssp. *kernensis* Tejon poppy	FSC/-/1B	Valley and foothill grassland; endemic to Kern County, reported from several occurrences within the WRMWSD (CNDDB 2002).
Heterotheca shevockii Shevock's golden-aster	-/-/1B	Sandy soils in chaparral, cismontane woodland; endemic to Kern County, known only from the lower Kern River canyon in the Greenhorn Mountains.
Layia leucopappa Comanche Point layia	FSC/-/1B	Chenopod scrub, valley and foothill grassland; endemic to Kern County, several occurrences reported near Comanche Point in the Tejon Hills (CNDDB 2002) within the WRMWSD; KCVFHCP.
Layia munzii Munz's tidy-tips	FSC/-/1B	Alkaline or clayey areas in chenopod scrub, valley and foothill grassland in Fresno, Kern and San Luis Obispo counties.
Lepidium jaredii ssp. *jaredii* Jared's pepper-grass	FSC/-/1B	Alkaline, adobe areas in valley and foothill grassland in Kern and San Luis Obispo counties; known only from the Devil's Den area in Kern County.
Linanthus serrulatus Madera linanthus	FSC/-/1B	Cismontane woodland, lower montane coniferous forest.
Madia radiata Showy madia	FSC/-/1B	Cismontane woodland, valley and foothill woodland.

Table 1. Sensitive Plant Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 3 of 3)

Scientific Name/ Common Name	*Regulatory Status Federal/State/CNPS*	*Habitat and Regional Occurrence*[1]
Mimulus pictus Calico monkeyflower	FSC/-/1B	Broadleaved upland forest, cismontane woodland in Kern and Tulare counties; reported in the vicinity of Tejon Ranch within the WRMWSD (CNDDB 2002).
Navarretia peninsularis Baja navarretia	-/-/1B	Mesic areas in openings in chaparral, lower coniferous forest.
Navarretia setiloba Piute Mountains navarretia	FSC/-/1B	Cismontane woodland, pinyon-juniper woodland, valley and foothill grasslands in Kern and Tulare counties; known from fewer than ten occurrences, reported near Grapevine Peak within the WRMWSD (CNDDB 2002).
Phacelia nashiana Charlotte's phacelia	FSC/-/1B	Joshua tree "woodland," Mojavean desert scrub, pinyon and juniper woodland in Inyo, Kern and Tulare counties.
Stylocline citroleum Oil neststraw	FSC/-/1B	Chenopod scrub, coastal scrub (?), valley and foothill grassland, clay soils in oil-producing areas, Kern and San Diego counties (believed extirpated from San Diego County); known from approximately ten occurrences in the East Elks Hills, historically reported from the Buena Vista Hills within the WRMWSD (CNDDB 2002).
Stylocline masonii Mason's neststraw	FSC/-/1B	Chenopod scrub, pinyon and juniper woodland.

Notes: 1. WRMWSD denotes species reported from the Wheeler Ridge-Maricopa Water Storage District (CNDDB 2002); KCVFHCP denotes species identified in the Kern County Valley Floor Habitat Conservation Plan (Kern County 2001); other special status plants are reported from Kern County (CNDDB 1999) but not within WRMWSD.

Status:

Federal:
- E = Listed as Endangered.
- T = Listed as Threatened.
- FSC = Federal Species of Concern.

State:
- E = Listed as Endangered.
- T = Listed as Threatened.

CNPS:
- 1B = List 1B - Plants rare and endangered in California and elsewhere
- 2 = List 2 - Plants rare and endangered in California but more common elsewhere
- 4 = List 4 - A watch list, plants of limited distribution

Table 2. Sensitive Wildlife Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 1 of 4)

Scientific Name/ Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Federally or State-Listed Rare, Threatened or Endangered Species		
Ammospermophilus nelsoni San Joaquin antelope squirrel	FSC/T	Open, sparsely vegetated grassland, desert scrub with gullies and washes. Numerous records within the region; KCVFHCP.
Charadrius alexandrinus nivosus (nesting) Western snowy plover	T/CSC	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting. Historical record from Buena Vista Lake bed.
Charina bottae umbratica. Southern rubber boa	FSC/T	Fossorial to semi-fossorial occurring in higher elevation forests and meadows as well as lower elevation riparian woodlands. May occur on Central Valley floor.
Coccyzus americanus occidentalis (nesting) Western yellow-billed cuckoo	-/E	Riverine woodlands, thickets, and farms. Historic records from Buena Vista Lake bed.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	T/-	Elderberry trees associated with riparian habitat along rivers throughout the Central Valley. No known populations in southern San Joaquin Valley region.
Dipodomys ingens Giant kangaroo rat	E/E	Annual grasslands on the western side of the San Joaquin Valley; marginal habitat in alkali scrub. Several records from region; KCVFHCP.
Dipodomys nitratoides nitratoides Tipton kangaroo rat	E/E	Saltbrush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Several occurrences in the region; KCVFHCP.
Empidonax traillii (nesting) Willow flycatcher	-/E	Riparian woodlands that contain water and low growing willow thickets. Known to occur in higher elevations and may occur in foothills and valley bottom.
Empidonax traillii extimus (nesting) Southwestern willow flycatcher	E/E	Riparian woodlands that contain water and low growing willow thickets. Known to occur in higher elevations and may occur in foothills and valley bottom.
Euproserpinus euterpe Kern primrose sphinx moth	T/-	Adult females lay their eggs on evening primrose plants, *Camissonia* sp. in southern Kern County. No known populations.
Gambelia silus (=*G. sila*) Blunt-nosed leopard lizard	E/E	Prefers sparsely vegetated plains, alkali flats, low foothills, desert scrub, and large washes. Several records documented in the region; KCVFHCP
Vulpes macrotis mutica San Joaquin kit fox	E/T	Grasslands and blue oak savannas of San Joaquin Valley; loose soils for burrowing. Numerous records within the region; KCVFHCP.

Table 2. Sensitive Wildlife Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 2 of 4)

Scientific Name/ Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Federal Species of Concern and State Species of Special Concern		
Accipiter cooperii (nesting) Cooper's hawk	-/CSC	Open woodlands especially riparian woodland. Occurs throughout southern San Joaquin Valley.
Agelaius tricolor (nesting colony) Tricolored blackbird	FCS/CSC	Inhabits freshwater marshes and riparian scrub. Several occurrence documented in the region.
Antrozous pallidus Pallid bat	-/CSC	Nests in dry, rocky habitats/caves, crevices in rocks, arid habitats including deserts, chaparral, and scrublands. Occurs throughout San Joaquin Valley.
Aquila chrysaetos (nesting and wintering) Golden eagle	-/CSC	Mountains, deserts, and open country. Suitable nest habitat is primarily cliffs and rocky ledges, sometimes trees, and occasionally ground and man-made structures. Occasionally observed in the region.
Asio otus Long-eared owl	-/CSC	Riparian and live oak woodlands. Dense stands of trees. Known to occur in the region.
Athene cunicularia (burrow sites) Burrowing owl	FSC/CSC	Open grasslands, deserts, scrublands; low growing vegetation; small mammal burrows. Several records within the region.
Clemmys marmorata pallida Southwestern pond turtle	FCS/CSC	Inhabits ponds, marshes, rivers, streams, and irrigation ditches. Several observations within the region have been documented.
Corynorhinus townsendii pallescens Pale big-eared bat	FSC/CSC	Needs caves, tunnels, or other structures for roosting, vegetation and mesic edges for feeding; maternity roosts are in warm places. Known to occur in the region.
Dendroica petechia brewsteri (nesting) Yellow warbler	-/CSC	Riparian woodlands, montane chaparral, and mixed conifer habitats. Known to occur throughout southern San Joaquin Valley.
Dipodomys nitratoides brevinasus Short-nosed kangaroo rat	FSC/CSC	Western side of San Joaquin Valley in grassland and desert shrub associations; highly alkaline soils. Several records within southern San Joaquin Valley; KCVFHCP.
Eremophila alpestris actia California horned lark	-/CSC	Open habitats, grasslands along the coast, deserts near sea level to alpine dwarf shrub habitat, uncommonly in coniferous and chaparral habitats. May occur in region.
Eumops perotis californicus California mastiff bat	FSC/CSC	Primarily arid lowlands, especially deserts; open, semiarid to arid habitats including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. Known to occur throughout region.
Falco mexicanus (nesting) Prairie falcon	-/CSC	Grasslands, savannahs, rangeland, agricultural fields, and desert scrub; often uses sheltered cliff ledges for cover. Known to occur in the region.

Table 2. Sensitive Wildlife Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 3 of 4)

Scientific Name/ Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Icteria virens (nesting) Yellow-breasted chat	-/CSC	Riparian woodlands with a thick understory. Known to occur in the region.
Lytta hoppingi Hopping's blister beetle	FSC/-	Vernal pools and grasslands in San Joaquin Valley. Known to occur in region
Lytta molesta Molestan blister beetle	FSC/-	Most likely grasslands; adults are plant feeders. Several records from San Joaquin Valley including within Kern County.
Masticophis flagellum ruddocki San Joaquin whipsnake	FCS/CSC	Dry, hot, open vegetation with little or no tree cover such as valley grasslands. Known to occur in the region.
Myotis ciliolabrum Small-footed myotis	FSC/-	Cliff-face crevices, erosion cavities, and beneath rocks on the ground; also hibernating in caves or mines. Known to occur throughout the region.
Myotis yumanensis Yuma myotis	FSC/-	Caves, tunnels, or buildings; prefers open forests and woodlands with water but uses a variety of habitats; arid areas. Known to occur throughout Central Valley.
Onychomys torridus tularensis Tulare grasshopper mouse	FSC/CSC	Arid shrubland communities, arid grassland and shrubland associations, blue oak woodlands, alkali sink and mesquite associations on Valley Floor. No recent records in southern San Joaquin Valley; KCVFHCP.
Perognathus inornatus inornatus San Joaquin pocket mouse	FSC/-	Grasslands and blue oak savannas. Several records from southern San Joaquin Valley; KCVFHCP.
Phrynosoma coronatum frontale California horned lizard	FCS/CSC	Exposed gravelly, sandy soils with minimal shrubs, riparian woodland clearings, dry chamise chaparral, and annual grasslands with scattered seepweed or saltbush. Known to occur in southern San Joaquin Valley.
Scaphiopus hammondii Western spadefoot toad	FSC/CSC	Temporary pools in semiarid to arid short grass plains and sandy, gravelly areas such as alkali flats, washes, and river floodplains. Occurs in Central Valley foothills and valley floor.
Sorex ornatus relictus Buena Vista Lake shrew	E/CSC	Marshlands and riparian areas in the Tulare Basin. Several occurrences reported from the region; KCVFHCP.
Taxidea taxus American badger	-/CSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Recently observed in the Maricopa Flat area; KCVFHCP.

Table 2. Sensitive Wildlife Species Potentially Occurring in the WRMWSD or the San Joaquin Valley Floor Area

(page 4 of 4)

Scientific Name/ Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Toxostoma lecontei Le Conte's thrasher	-/CSC	Open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub, nests in dense, spiny shrub or cactus in desert wash habitat. Several records within the region.

Notes: 1. KCVFHCP denotes species identified in the Kern County Valley Floor Habitat Conservation Plan (Kern County 2001).

Status:

Federal:

- E = Listed as Endangered.
- T = Listed as Threatened.
- FSC = Federal Species of Concern.

State:

- E = Listed as Endangered.
- T = Listed as Threatened.
- CSC = California Species of Special Concern.

Table 3. Sensitive Plants Potentially Occurring in the CLWA Service Area

(page 1 of 2)

Scientific Name / Common Name	*Regulatory Status Federal/State/CNPS*	*Habitat and Regional Occurrence*
State or Federally Listed Species		
Astragalus brauntonii Braunton's milk-vetch	E/-/1B	Recently burned chaparral vegetation, limestone soils; known from Simi Hills, Santa Monica Mountains.
Berberis nevinii Nevin's barberry	E/E/1B	Coastal scrub and chaparral along sandy washes; scattered occurrences in Transverse Ranges.
Brodiaea filifolia Thread-leaved brodiaea	T/E/1B	Vernal pools, recently rediscovered in Los Angeles County (1996).
Dodecahema leptoceras Slender-horned spineflower	E/E/1B	Restricted to alluvial fan sage scrub; known from Santa Clara River tributaries.
Navarretia fossalis Spreading navarretia	T/-/1B	Chenopod scrub, shallow fresh water marshes, and vernal pools; reported from Cruzan Mesa.
Orcuttia californica California Orcutt grass	E/E/1B	Vernal pools; historic and recent records from Cruzan Mesa.
Federal Candidate and CNPS Lists 1 and 2 Species that Could Be Eligible for Listing		
Calochortus clavatus var. *gracilis* Slender mariposa lily	-/-/1B	Foothill canyons in chaparral; occurs in San Gabriel Mountains.
Calochortus plummerae Plummer's mariposa lily	-/-/1B	Chaparral, other habitats, usually on granitic soils; Transverse and Peninsular Ranges.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	FL/SL[1]/1B	Sandy/gravelly washes in coastal scrub; historically in vicinity of Castaic, Newhall; recently discovered in the Simi Hills.
Deinandra (= Hemizonia) minthornii Santa Susana tarplant	-/R/1B	Rocky areas in chaparral, coastal scrub; common in Santa Susana Pass.
Dudleya multicaulis Many-stemmed dudleya	-/-/1B	Grassland and scrub habitats, associated with rock outcrops on clay soils; known from east of Simi Valley .
Galium grande San Gabriel bedstraw	-/-/1B	Lower montane coniferous forest, south slope of San Gabriel Mountains.
Opuntia basilaris var. *brachyclada* Short-joint beavertail	-/-/1B	Dry slopes in chaparral (at higher elevations than on project site); known from Santa Susana Pass.
Plants of Limited Distribution		
Acanthomintha obovata ssp. *cordata* Heart-leaved thorn-mint	-/-/4	Woodland, chaparral, and grassland habitats; known from areas to west in Ventura County.
Androsace elongata ssp. *acuta* California androsace	-/-/4	Scrub and woodland habitats; widely distributed but rare; not found recently in Los Angeles County.
Baccharis plummerae ssp. *plummerae* Plummer's baccharis	-/-/4	Rocky slopes, scrub and woodland habitats; primarily coastal, known from areas to west.
Calandrinia breweri Brewer's calandrinia	-/-/4	Disturbed or burned sites in coastal scrub and chaparral; widespread though uncommon.

Table 3. Sensitive Plants Potentially Occurring in the CLWA Service Area

(page 2 of 2)

Calystegia peirsonii Peirson's morning glory	-/-/4	Hillsides, rocky slopes in chaparral, coastal scrub; known from Newhall Ranch, Marple, Mint, and San Francisquito Canyons.
Convolvulus simulans Small-flowered morning glory	-/-/4	Wet clay and serpentine ridges; scattered at low to mid-elevations in coastal Southern California..
Galium cliftonsmithii Santa Barbara bedstraw	-/-/4	Partially shaded canyon habitats; mostly coastal, known from West Transverse Ranges.
Harpagonella palmeri Palmer's grapplinghook	-/-/4	On clay soils in grassland and scrub habitats; historically found near Saugus but unconfirmed in Los Angeles County in recent years.
Juncus acutus ssp. *leopoldii* Southwestern spiny rush	-/-/4	Marshes, wet meadows, often in saline habitats; widespread in coastal southern California and deserts.
Lilium humboldtii ssp. *ocellatum* Ocellated lily	-/-/4	Canyons; in oak woodland; widely distributed though uncommon in southern California.
Microseris douglasii ssp. *platycarpha* Small-flowered microseris	-/-/4	Inland clay soils, often near vernal pools or serpentine; widely distributed though uncommon in coastal central and southern California.
Mucronea californica California spineflower	-/-/4	Coastal scrub, chaparral on sandy soils; widespread though uncommon in coastal central and southern California.
Perideridia pringlei Adobe yampah	-/-/4	Grassland, scrub, woodland habitats, on serpentine; coastal central California to West Transverse Ranges.

Notes: 1. This species was listed as endangered under the California Endangered Species Act in August of 2001.

Source: CDFG (2002b), CNPS (2001), Aspen Environmental Group (1996), Hickman (1993), PCR (2000), and County of Los Angeles (1996)

Status:

Federal:
- E = Listed as Endangered.
- T = Listed as Threatened.
- FL = Federal Candidate for Listing.

State:
- E = Listed as Endangered.
- R = Listed as Rare.
- SL = State Candidate for Listing.

CNPS:
- 1B = List 1B - Plants rare and endangered in California and elsewhere
- 4 = List 4 - A watch list, plants of limited distribution

Table 4. Sensitive Wildlife Species Potentially Occurring in the CLWA Service Area

(page 1 of 4)

Scientific Name / Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
State or Federally Listed or Proposed Species		
Bufo californicus Arroyo toad	E/CSC	Sandy stream terraces with closed canopies and grassy groundcover next to perennial stream. Primarily in Ventura and northern Los Angeles counties; Santa Clara River.
Buteo swainsoni Swainson's hawk	—/T	Forages over grasslands, savannas, and open areas. Nests in scattered trees near open areas. Nesting rare in Southern California. Possible as brief migrant, not likely to breed.
Catostomus santaanae Santa Ana sucker	T/CSC	Found in flowing streams with coarse substrate and little modification or pollution. Present in Santa Clara River but may have hybridized with the introduced Owens sucker.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	—/E	Riverine woodlands, thickets, and farms. Known to occur in the region.
Empidonax traillii extimus Southwestern willow flycatcher	E/E	Dense willow thickets near slow-moving streams. Nests along Santa Clara River and other large streams.
Falco peregrinus anatum American peregrine falcon	DM/E	Forages over open areas, especially over water. Nests on cliffs with small caves.
Gasterosteus aculeatus williamsoni Unarmored threespine stickleback	E/E	Found in streams and pools with flowing water and emergent vegetation. Inhabits Santa Clara River.
Gymnogyps californianus California condor	E/E	Open savannahs and grassland. Nests on cliffs with small caves. Possibly forages over open areas.
Polioptila californica californica Coastal California gnatcatcher	T/CSC	Inhabits coastal sage scrub. Scattered observations throughout the area.
Rana aurora draytonii California red-legged frog	T/CSC	Inhabits unpolluted freshwater streams and marshes with emergent aquatic vegetation such as tules, bulrushes, or cattails. Known from Piru Creek, San Francisquito Creek; possible elsewhere.
Vireo bellii pusillus Least Bell's vireo	E/E	Extensive, dense willow riparian thicket. Nests along Santa Clara River and other large streams.
Federal Candidate and Federal and State Species of Special Concern		
Accipiter cooperii Cooper's hawk	—/CSC	Heavily wooded, semi-open areas, breeds in riparian and oak woodlands. Known to occur throughout the region.
Accipiter striatus Sharp-shinned hawk	—/CSC	Uncommon migrant and winter visitor in heavily wooded semi-open areas. Mostly likely during winter, unlikely breeder.
Agelaius tricolor Tricolored blackbird	FSC/CSC	Freshwater marshes and riparian scrub. Few occurrences in region.

Table 4. Sensitive Wildlife Species Potentially Occurring in the CLWA Service Area

(page 2 of 4)

Scientific Name / Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	FSC/CSC	Generally, steep, rocky areas within coastal sage scrub and chaparral, often with scattered bunches of grass; prefers relatively recently burned areas. Observed on Newhall Ranch; locally common.
Amphispiza belli Bell's sparrow	FSC/CSC	Dense, dry chamise chaparral and coastal slopes of coastal sage scrub. Locally common.
Anniella pulchra pulchra Silvery legless lizard	FSC/CSC	Several habitats but especially in coastal dune, valley-foothill, chaparral, and coastal scrub habitats; loose sandy soil. Known to occur throughout the region.
Antrozous pallidus Pallid bat	–/CSC	Forages in open areas; roosts in rock crevices and caves.
Aquila chrysaetos Golden eagle	–/CSC	Mountains, deserts, and open country. Suitable nest habitat is primarily cliffs and rocky ledges, sometimes trees, and occasionally ground and man-made structures. Occasionally observed in the region.
Asio otus Long-eared owl	–/CSC	Riparian and live oak woodlands. Known to occur in region.
Athene cunicularia hypugea Burrowing owl	FSC/CSC	Dry grasslands, desert habitats, open pinyon-juniper, ponderosa pine woodlands below 5,300 feet elevation; berms, ditches, and grasslands adjacent to rivers, agricultural, and scrub areas. Occasional visitor.
Buteo regalis Ferruginous hawk	–/CSC	Rivers, lakes, and coasts; open tracts of sparse shrubs and grasslands, and agricultural areas during winter. Rare migrant through region.
Circus cyaneus Northern harrier	–/CSC	Forages in marshes and grassy meadows; uncommon; occasionally forages over open desert and brushlands.
Cnemidophorus tigris multiscutatus Coastal western whiptail	FSC/–	Arid and semi-arid desert to open woodlands, where vegetation is sparse; loose soils in chaparral and scrub habitats. Known to occur throughout the region.
Dendroica petechia brewsteri Yellow warbler	–/CSC	Inhabits willow-riparian habitats. Numerous records from region.
Elanus leucurus White-tailed kite	–/FP	Forages in meadows and open areas. Nests in riparian woodland. Nesting in woodlands along Santa Clara River, Live Oak Springs and Placerita Canyon; near Pico Canyon; common locally.
Eremophila alpestris actia California horned lark	FSC/CSC	Open grasslands, fields, and agricultural areas. Known to occur throughout the region.
Euderma maculatum Spotted bat	FSC/CSC	Deserts, scrublands, chaparral, and coniferous woodlands. At least one record from the region.
Eumops perotis californicus Greater western mastiff-bat	FSC/CSC	Forages over chaparral and grasslands; roosts in rock crevices and old buildings.

Table 4. Sensitive Wildlife Species Potentially Occurring in the CLWA Service Area
(page 3 of 4)

Scientific Name / Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Falco mexicanus Prairie falcon	—/CSC	Forages in dry open habitat. Nests on cliffs with potholes. Known to breed in area.
Felis concolor Mountain lion	—/CSC	Rare residents of rugged terrain with dense cover, forages over large area. Tracks observed in Newhall Ranch area and presumed to occasionally forage on site.
Gila orcutti Arroyo chub	FSC/CSC	Adapted to the warm fluctuating streams of the Los Angeles Plain. Prefers the slowest moving sections of stream where bottom is sand or mud. Inhabits Santa Clara River and Castaic Creek.
Icteria virens Yellow-breasted chat	—/CSC	Prefer dense willow-riparian habitats. At least one record from San Francisquito Creek.
Ixobrychus exilis hesperis Western least bittern	—/CSC	Emergent wetlands of cattails and tules. Records from the Santa Clara River.
Lanius ludovicianus Loggerhead shrike	FSC/CSC	Open grassland, savannas, and chaparral. Fairly common.
Lepus californicus bennettii San Diego black-tailed jackrabbit	FSC/CSC	Open brushlands and scrub habitats between sea level and 4,000 feet elevation. Known to occur in region.
Macrotus californicus California leaf-nosed bat	FSC/CSC	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Roosts in tunnels, caves and possible buildings and bridges. Becoming rare locally.
Myotis thysanodes Fringed myotis	FSC/—	Dry, rocky habitats/caves, crevices in rocks, arid habitats, chaparral. Known to occur in region.
Myotis yumanensis Yuma myotis	FSC/CSC	Open forests and woodlands with water are optimal but uses a variety of habitats. Known to occur in region.
Neotoma lepida intermedia San Diego desert woodrat	FSC/CSC	Dense riparian and chaparral. Observed on Newhall Ranch and likely elsewhere.
Phrynosoma coronatum Coast horned lizard	FSC/CSC	Scrubland, grassland, coniferous forest, broad-leaf woodlands; sandy loose soils in chaparral scrub and washes. Known to occur throughout the region.
Onychomys torridus Ramona Southern grasshopper mouse	FSC/CSC	Grasslands, desert areas, especially scrub with friable soils. Recorded in Soledad Canyon.
Plecotus townsendii pallescens Pale Townsend's big-eared bat	FSC/CSC	Forages in forests, woodlands, grasslands, and open areas; roosts in caves and man-made structures.
Piranga rubra Summer tanager	—/CSC	Cottonwood-willow woodland and riparian scrub. Record from Santa Clara River near Lang.

Table 4. Sensitive Wildlife Species Potentially Occurring in the CLWA Service Area

(page 4 of 4)

Scientific Name / Common Name	*Regulatory Status Federal/State*	*Habitat and Regional Occurrence*
Salvadora hexalepis virgultea Coast patch-nosed snake	FSC/CSC	Found in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas. Barren creosote bush desert flats. Sagebrush semi-deserts; sea level to 7,000 feet. Known to occur throughout the region.
Scaphiopus hammondii Western spadefoot toad	FSC/CSC	Lowland washes, floodplains, temporary ponds and vernal pools. Observed in Potrero Canyon Pond (Aspen 1996) and likely elsewhere.
Strix occidentalis occidentalis California spotted owl	—/CSC	Oak and oak-conifer habitats. Reported within the region.
Taxidea taxus American badger	—/CSC	Open areas with sandy soils.
Thamnophis hammondii Two-striped garter snake	FSC/CSC	Riparian and freshwater marshes with perennial water. Several records within the region.

Source: Aspen Environmental Group (1996), County of Los Angeles (1996), CDFG (2002a), PCR (2000)

Status:

Federal:
- E = Listed as Endangered.
- T = Listed as Threatened.
- FSC = Federal Special of Concern
- DM = Delisted Taxon, Recovered, Being Monitored First 5 Years

State:
- E = Listed as Endangered.
- T = Listed as Threatened.
- FP = Fully Protected Species.
- CSC = California Species of Special Concern.

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Appendix C

Agricultural Resources

Effects on Agricultural Production from Transferring 41,000 Acre-Feet of State Water Project Entitlement from Wheeler Ridge-Maricopa Water Storage District

DRAFT REPORT

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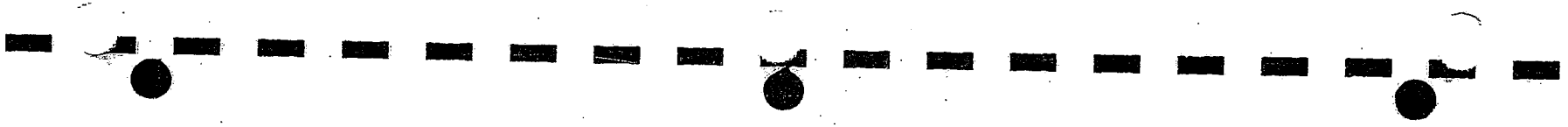

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Executive Summary

- Between 1990 and 1999, permanent crops increased from 30 percent to 38 percent of cropped land in WRMWSD. Between 1999 and 2001, they rose to 48 percent. Vineyards are the single most important permanent crop. Permanent cropped acreage has increased in both surface water and ground water service areas of the district.

- Because of the large capital costs for establishing a vineyard, grove, or orchard, the increase in permanent crop acreage suggests that farmers in the service area are confident that they will be able to consistently obtain the water necessary for their operations. The actions of WRMWSD have increased the reliability of water and helped offset the rising costs of SWP surface water. Growers are able to produce more labor-intensive, higher value crops.

- WRMWSD has diversified its water supply and management portfolio dramatically since the 1980s. The district's SWP entitlement remains an integral component of total supplies, but supplemental sources now provide a substantial drought buffer for the district.

- WRMWSD has invested in ground water recharge storage and recovery systems outside of the WRMWSD service area as well as distribution and pumping infrastructure in order to increase the reliability of water in dry years. Banking surface water when available or conjunctively using ground water in wet and normal years allows WRMWSD to have a more reliable water supply when normal demand exceeds supplies available from the SWP. This banking and reliability more than offsets any of the impacts of the 41,000 AF transfer of SWP surface water.

- The transfer of 41,000 AF of SWP water will have little or no impact on cropping patterns and production in WRMWSD. The district has taken adequate steps to insure that more reliable water supplies from various sources will be available at lower cost to offset the transfer. The transfer and resulting payment for the transferred water reduce the fixed cost burden of the unneeded SWP entitlement and thus reduce the financial

burden to WRMWSD. The district is better able to continue to improve its water infrastructure and supply. Without this infrastructure and reliable supply, more lands will likely be removed from production temporarily or permanently.

- Farmed land in the WRMWSD has varied from a low of 60,370 acres in 1991, a severe drought year, to a high of 94,499 acres in 1998. Crop acreage fluctuated by an average of 11.6 percent each year between 1990 and 2001. The principal factors causing the variations likely have included water availability, crop rotations, and crop prices.

- During the last 12 years, the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) has experienced a significant shift in agricultural cropping patterns, likely due in great part to the reliability and cost of water.

- Annual crop acreage has declined, while acreage in permanent crops has increased. Annual crop acreage fell by 13,376 acres in the WRMWSD surface water service areas from between 1990 and 1999 and by a further 9,068 acres between 1999 and 2001. In the surface water service areas, cotton acreage declined by 15,534 acres between 1990 and 1999 and by a further 1,528 acres between 1999 and 2001. Over the same two periods in the groundwater service areas, annual crop acreage increased by 8,668 and decreased by 5,128, respectively.

- Many economic factors influence cropping decisions and resultant cropping patterns. Changes in crop prices, particularly for cotton, and the total of variable costs (including water prices), as well as strong demands for grapes and citrus, appear to have influenced the decisions of farmers in the WRMWSD regarding crop choices.

- As overall production costs increase, including those for water, cotton growers find it harder and harder to stay in production. Rotation crops such as grain and hays do not even cover variable costs in some years. Growers are better off to fallow lands than to continue production of these crops.

- Fallowing has been a regular part of cropping patterns in WRMWSD. Between 1991 and 1998, the amount of fallowed land decreased by 34,000 acres. Since 1998, fallowed acreage has increased by 11,600 acres.

- During the early 1990s drought period, it became apparent that Department of Water Resources (DWR) announced water shortages could become a reality and that water costs would soar when water was not delivered. Following this period of drought impacts, WRMWSD experienced a significant shift of acreage to higher value crops such as fruits and vegetables and a reduction of acreage in lower value crops such as cotton,

hay, and other field crops. The last two to three years appears to be a period of leveling out of new perennial crop plantings and increased fallowing.

- Fallowing has increased since 1998 even though State Water Project (SWP) deliveries, with the exception of 2001, have been relatively high. The increase is probably due to market conditions, particularly for cotton, as well as other economic and agronomic reasons.

- Total applied agricultural water within WRMWSD averaged about 251,000 acre-feet (AF) annually between 1990 and 1999 and about 259,000 AF annually between 1999 and 2001. Over those two periods, total WRMWSD deliveries from all sources averaged 158,000 AF and 168,000 AF annually, respectively. The remainder was supplied by on-farm ground water pumping, user input, or other water supplies available to farmers in the WRMWSD area.

- Before the 41,000 AF transfer, WRMWSD held a water supply contract for about 238,000 AF of SWP water. After the transfer, the remaining 197,000 AF of contract amount, with supplemental supplies, should leave the district comfortably able to meet demands in normal and wet years. Neither cost nor availability should be adversely affected in those years, and the transfer should not, of itself, cause an increase in fallowing.

The WRMWSD supplemental water supplies were developed primarily to help meet demands during dry years. Those sources will more than make up for any dry year shortfall incurred as a result of the 41,000 AF of water transferred.

Introduction

Agriculture is the main industry in the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) service area. Agricultural lands in this area are among the most productive in Kern County and the entire state. Water is a key input to agriculture here, and has been instrumental in the production of a variety of crops destined for both domestic and international markets. The cost and availability of various water sources have significant effects on farm profitability and survivability.

Over time, farmers in the service area have changed cropping mixes, adopted different rotations, and used different water sources for their operations. These changes are an outgrowth of the many factors incorporated into the decision-making framework used by farmers, some unique to each farm, others common to all.

This report considers the farm-level impacts of the 41,000 acre-feet (AF) transfer of State Water Project (SWP) entitlement from WRMWSD to Castaic Lake Water Agency (CLWA). The focus of the analysis is on whether the transfer will cause changes in agricultural practices, including additional land fallowing within WRMWSD. The report is presented in three sections. The first is an assessment of pertinent existing conditions within WRMWSD. The discussion includes a review of crop acreages and use of various water sources over time. The second section describes the decision-making framework which farmers seeking specific economic objectives follow in determining which crops to plant and which inputs, including water, to use on these crops. This development follows widely-accepted principles of farm management and agricultural economics. The third section evaluates the effects of the transfer on land fallowing within WRMWSD.

Existing Conditions

Cropping Patterns[2]

Crops grown within the WRMWSD service area had a farm-level production value of nearly $283 million in 2001 (see Table 1).[3] Grapes provided the greatest dollar value, at 31 percent of the total, followed by mixed produce and melons at 26 percent, citrus at 25 percent, and cotton at seven percent. Total value in 2001 was 6 percent greater than the comparable value in 1999, and the value in 1999 was 23 percent higher than that in 1990. The allocation of value among crops has also changed a great deal since 1990, when grapes accounted for just 18 percent of the total, mixed produce and melons 36 percent, citrus 11 percent, and cotton 20 percent. Because of the 1987-92 drought that so severely impacted Kern County and the entire San Joaquin Valley, the value of crop production in WRMWSD fell between 1990 and 1992 and then rose to exceed the 1990 value only by 1995.

Since 1990, net farmed land[4] in WRMWSD has varied from a low of 60,370 acres in 1991 to a maximum of 94,499 acres in 1998 (see Table 2). For the 12 years shown, the normal annual variation in net farmed land was 11.6 percent,[5] or about 9,700 acres. As shown in Figure 1, the general trend in net cropped acreage was positive until about 1999.[6] Similarly,

2 Cropping information for WRMWSD is taken from annual crop reports provided by the district for the years 1990 through 2001.

3 Based on crop acreages reported by WRMWSD and average price and yield data reported for Kern County by the Kern County Department of Agriculture.

4 Measured as total cropped less double-cropped land.

5 Measured as the coefficient of variation, calculated as the standard deviation divided by the mean. See Snedecor and Cochran.

6 A two-period moving average is used to reduce variation typical between years.

the general trend in annual cropped acreage was positive until about 1996, then notably negative. In 1990, annual crops accounted for 70 percent of cropped acres.[7] By 1999, the annual crop share had fallen to 62 percent and by 2001 to 52 percent. Cotton, historically the predominant annual crop in WRMWSD, represented 61 percent of annual cropped land in 1990, but only 36 percent in 1999 and 37 percent in 2001. From its peak in 1996, annual cropped land fell 9,011 acres by 1999 and an additional 14,196 acres by 2001. Cotton accounted for nearly 80 percent of that reduction. Conversely, the acreage shares of mixed produce and melons rose from 31 percent in 1990 to 38 percent in 1999 and fell to 35 percent in 2001. The share of irrigated grains increased from zero in 1990 to 18 percent in 1999 and fell to 14 percent in 2001.

The negative trend for annual crops has been offset almost completely by the increases in permanent crop acreage. In 1990, permanent crops accounted for 30 percent of cropped land, with vineyards comprising 40 percent of the total, deciduous nuts 26 percent, citrus 23 percent, and deciduous fruits eight percent. In 1999, permanent crops accounted for 38 percent of cropped land, with vineyards 43 percent of the total, deciduous nuts 23 percent, citrus 27 percent, and deciduous fruits five percent. By 2001, permanent crops represented 48 percent, with vineyards at 44 percent of the total, deciduous nuts 21 percent, citrus 30 percent, and deciduous fruits five percent.

Table 2 shows fallowed land[8] ranging from a maximum of 51,620 acres in 1991 to a minimum of 17,649 acres in 1998. The spike in fallowed land in 1991 was attributable largely to the ongoing drought in California and sharply-reduced water supplies, together with higher costs of water from virtually all sources. Because of its different water sources, which are even more diversified today, WRMWSD was able to provide some water to farmers in 1991. Subsequently, fallowed acreage declined sharply until 1998 and has risen since then (see Figure 2). About 1,700 acres more land were fallowed in 2001 than in 1990.

Farmers fallow land for many reasons, both agronomic and economic. Agronomic reasons include the use of fallowing as part of crop rotations. Economic reasons include such factors as the market conditions and prices for the crops typically grown on the land and the cost and availability of production inputs, including water.

Without information from individual landowners, it is very difficult to distinguish between land that is fallowed temporarily and land that is removed from production either permanently or for a long term. The California Department of Conservation, which monitors land use with aerial photos taken every two years, reports previously productive, but

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7 Calculated relative to total cropped land because some annual cropland is double cropped.

8 As shown in WRMWSD crop reports. Fallowing generally refers to temporarily removing land from production to conserve moisture or to control pests.

currently idle, land as fallowed for at three monitoring cycles (that is, six years).[9] Ultimately, land may be fallowed for eight years before it is no longer considered to be in active agricultural use. Thus, it is not at all apparent that the increase in fallowed land with the WRMWSD service area since 1998 is attributable to a reduction in SWP entitlements within the district. Rather, the increase appears to be related more closely to crop markets and prices.

9 Molly Penberth, California Department of Conservation, April 30, 2003, personal communication.

Table 1
Farm Level Value of Production, by Crop and Total, WRMWSD

Crop/Acres	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cotton	$43,019,069	$16,689,629	$27,663,667	$33,714,831	$37,911,348	$34,831,452	$40,411,911	$38,485,118	$19,421,271	$26,461,166	$25,490,070	$18,582,103
Sugar Beets	$751,012	$672,471	$840,597	$862,677	$373,257	$466,458	$152,213	$0	$205,582	$0	$0	$0
Grain	$886,863	$953,001	$1,384,366	$2,017,655	$1,253,304	$3,138,780	$5,285,858	$3,058,269	$3,995,594	$4,101,029	$2,741,375	$2,808,474
Green Feeds	$1,396,620	$687,643	$705,721	$989,778	$1,415,864	$1,345,331	$1,415,121	$2,275,038	$1,968,264	$2,059,065	$1,980,664	$2,539,051
Mixed Produce	$77,196,114	$73,993,874	$37,366,098	$48,444,836	$41,735,435	$57,430,236	$49,788,591	$59,466,855	$54,425,094	$80,285,572	$72,435,938	$66,370,246
Melons	$0	$0	$15,178,882	$11,810,000	$17,527,192	$13,455,741	$13,424,661	$14,715,280	$13,970,325	$10,559,005	$8,968,780	$8,727,570
Vineyard	$38,927,352	$31,865,396	$37,027,240	$45,790,453	$45,763,512	$55,045,475	$64,192,513	$80,301,649	$73,479,669	$84,173,400	$84,581,368	$86,940,385
Deciduous Nuts	$18,754,834	$14,452,109	$12,384,408	$19,367,333	$16,053,249	$15,309,727	$18,210,636	$16,487,093	$16,267,367	$11,491,679	$13,021,446	$13,035,331
Deciduous Fruit	$11,206,519	$11,677,651	$7,492,311	$8,957,975	$7,888,785	$12,950,470	$11,608,728	$9,852,647	$10,991,313	$8,961,073	$14,345,391	$11,845,011
Citrus	$23,176,485	$10,233,881	$14,588,823	$31,144,607	$38,931,957	$39,672,318	$34,076,041	$55,669,042	$58,690,301	$37,264,234	$73,962,958	$71,330,901
Pomegranates	$375,112	$355,687	$917,011	$1,007,081	$1,324,308	$1,350,818	$1,408,974	$758,959	$647,472	$1,227,749	$454,063	$704,100
Eucalyptus	$15,437	$14,637	$36,576	$40,168	$22,638	$23,091	$76,269	$41,083	$36,396	$61,876	$22,884	$35,485
Jojoba	$997,211	$120,026	$519,901	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Value	$216,702,627	$161,716,007	$156,105,602	$204,147,394	$210,200,848	$235,019,897	$240,051,517	$281,111,032	$254,098,647	$266,645,848	$298,004,936	$282,918,657

Table 2
WRMWSD Annual and Permanent Crop and Other Acreage

Crop	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Annual												
Cotton	38,071	16,192	24,621	31,063	33,369	36,795	34,702	32,369	24,953	20,781	22,110	16,204
Sugar Beets	723	746	825	689	370	409	151	0	181	0	0	0
Grain	2,692	3,450	9,859	8,162	3,739	9,530	11,804	8,203	15,586	0	0	0
Grain, Irrigated	0	0	0	0	0	0	0	0	0	10,605	7,378	6,208
Grain, Dry Farmed	0	0	0	0	0	0	0	0	0	1,655	2,117	3,099
Green Feeds	1,836	1,146	1,206	1,442	1,514	2,002	1,737	2,923	2,938	3,340	2,933	2,924
Mixed Produce	19,504	17,469	12,971	12,414	13,618	13,333	14,770	16,408	14,553	17,783	16,889	13,246
Melons	0	0	4,064	3,361	3,832	4,073	3,965	3,924	3,845	3,954	2,350	2,241
Total Annual	62,826	39,003	53,546	57,131	56,442	66,142	67,129	63,827	62,056	58,118	53,777	43,922
Surface Water Service Areas	43,092	20,947	34,731	36,939	35,870	43,153	45,183	42,945	40,634	29,716	26,591	20,648
Ground Water Service Areas	19,734	18,056	18,815	20,192	20,572	22,989	21,946	20,882	21,422	28,402	27,186	23,274
Permanent												
Vineyard	10,719	9,883	9,633	9,708	9,778	10,774	12,547	14,222	15,315	15,745	17,387	17,701
Almonds	0	0	5,103	5,225	5,301	5,155	5,540	5,524	6,099	6,282	6,410	5,994
Pistachios & Walnuts	0	0	1,797	1,797	2,098	2,100	2,100	2,100	2,099	2,099	2,099	2,376
Deciduous Nuts	6,865	6,899	6,900	7,022	7,399	7,255	7,640	7,624	8,198	8,381	8,509	8,370
Deciduous Fruit	2,074	2,102	2,013	2,008	2,060	2,066	2,154	2,205	2,104	1,989	2,058	1,928
Citrus	6,212	6,233	6,675	6,932	7,241	7,471	7,870	8,482	9,011	9,737	11,123	12,029
Pomegranates	243	243	351	351	351	351	351	351	338	377	377	377
Eucalyptus	10	10	14	14	6	6	19	19	19	19	19	19
Jojoba	646	82	199	0	0	0	0	0	0	0	0	0
Total Permanent	26,769	25,452	25,785	26,035	26,835	27,923	30,581	32,903	34,985	36,248	39,473	40,424
Surface Water Service Areas	24,824	24,025	24,339	24,598	25,242	26,005	28,081	29,923	31,364	32,350	35,021	35,533
Ground Water Service Areas	1,945	1,427	1,446	1,437	1,593	1,918	2,500	2,980	3,621	3,898	4,452	4,891
Total Cropped	89,595	64,455	79,331	83,166	83,277	94,065	97,710	96,730	97,041	94,366	93,250	84,346
-Double Crop	5,314	4,085	3,525	4,510	4,233	4,663	5,092	5,441	2,542	3,155	2,622	1,541
Net Farmed	84,281	60,370	75,806	78,656	79,044	89,402	92,618	91,289	94,499	91,211	90,628	82,805
+Fallow Lands	27,588	51,620	36,031	33,189	32,980	22,523	19,584	20,949	17,649	20,855	21,659	29,291
Total Cultivated	111,869	111,990	111,837	111,845	112,024	111,925	112,202	112,238	112,148	112,066	112,287	112,096
Miscellaneous	6,840	6,847	6,839	6,843	6,849	6,841	6,859	6,860	6,856	6,850	6,864	6,852
Deferred Lands	1,659	1,659	1,659	1,659	1,659	1,659	1,659	0	0	0	0	0
Other Lands	668	738	880	968	919	1,073	1,098	1,129	1,183	1,270	1,361	1,257
Native Vegetation	25,626	25,428	25,405	25,305	25,169	25,122	24,802	26,393	26,434	26,434	26,434	26,739
Total District	146,662	146,662	146,620	146,620	146,620	146,620	146,620	146,620	146,621	146,620	146,946	146,944

Figure 1
Annual, Permanent, and Net Crop Acreage, WRMWSD

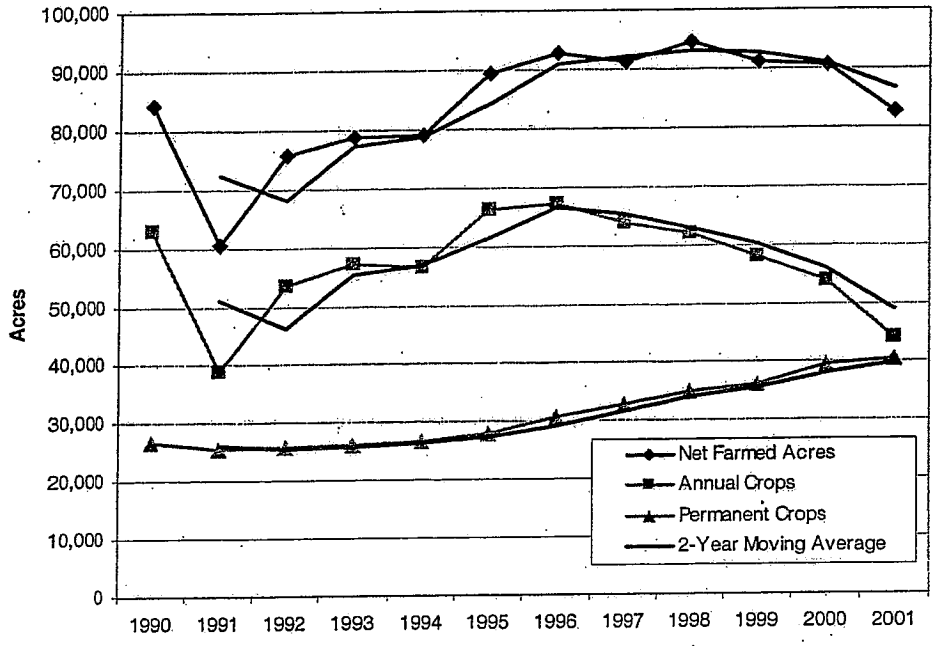
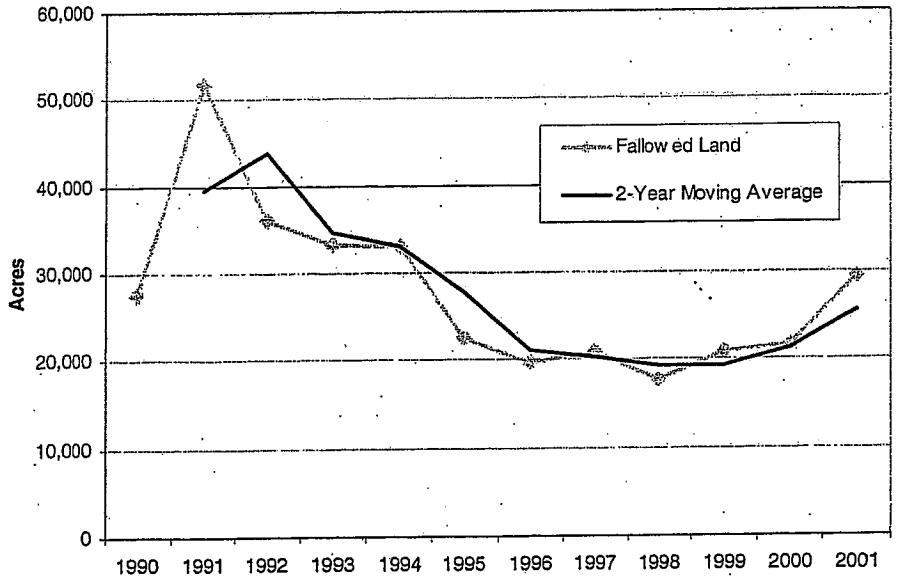


Figure 2
Fallowed Land, WRMWSD



Cropping Pattern Changes by Service Area

WRMWSD includes lands served by surface water or ground water or, in some cases, both. Cropped acreage in the surface water service areas (without exclusion of double cropping) fell by 5,850 acres between 1990 and 1999 and a further 5,885 acres between 1999 and 2001. Cropped land in the ground water areas increased 10,621 acres between 1990 and 1999 and fell 4,135 acres between 1999 and 2001.[10] The amount of annual crops in surface water areas fell by 13,376 acres between 1990 and 1999 and a further 9,068 acres between 1999 and 2001. For the two periods in the ground water areas, annual crop land increased by 8,668 acres and fell by 5,128 acres. The acreage of permanent crops rose in both surface water and groundwater service areas (see Figures 3 and 4).

The decline in annual crops and increase in permanent crops in surface water areas relates well to lower prices for some annual crops and higher water prices over the period. As discussed elsewhere in this section, cotton prices have fallen in both nominal and real terms since 1990, and it is no longer feasible to grow cotton in many parts of Kern County. Many cotton producers have been impacted by a "cost-price squeeze" quite common in agriculture.

The shift to permanent crops in the surface water service areas suggests that farmers in those areas are confident that they will be able to obtain water regularly either from within or outside WRMWSD, with or without the 41,000 AF of water under consideration. The capital investment for establishing an orchard, grove, or vineyard can easily exceed $8,000 per acre, excluding land, and farmers will not make those investments unless they are confident that they will be able to obtain adequate water for commercial production or, at minimum, keeping the trees or vines alive. While SWP water certainly remains an important part of the total WRMWSD supply, the SWP component of supply has been supplemented by the development and availability of several sources of supplemental water discussed elsewhere in this section.

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10 Wheeler Ridge-Maricopa Water Storage District, various years, "Crop and Land Use Summary," Bakersfield. The changes also reflect, in part, the reclassification of lands within WRMWSD.

Figure 3
Annual Crop Land in Surface and Ground Water Service Areas, WRMWSD

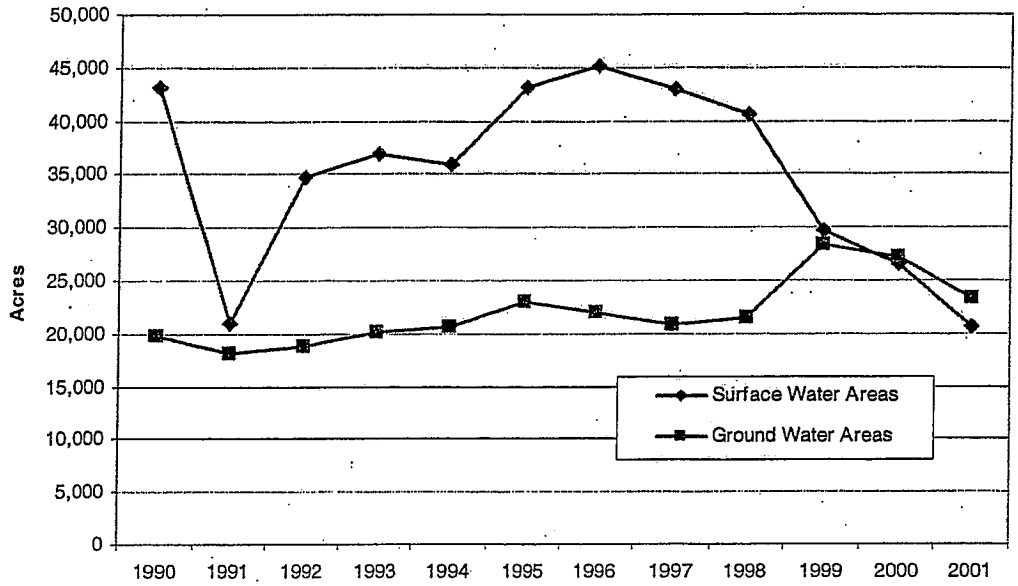
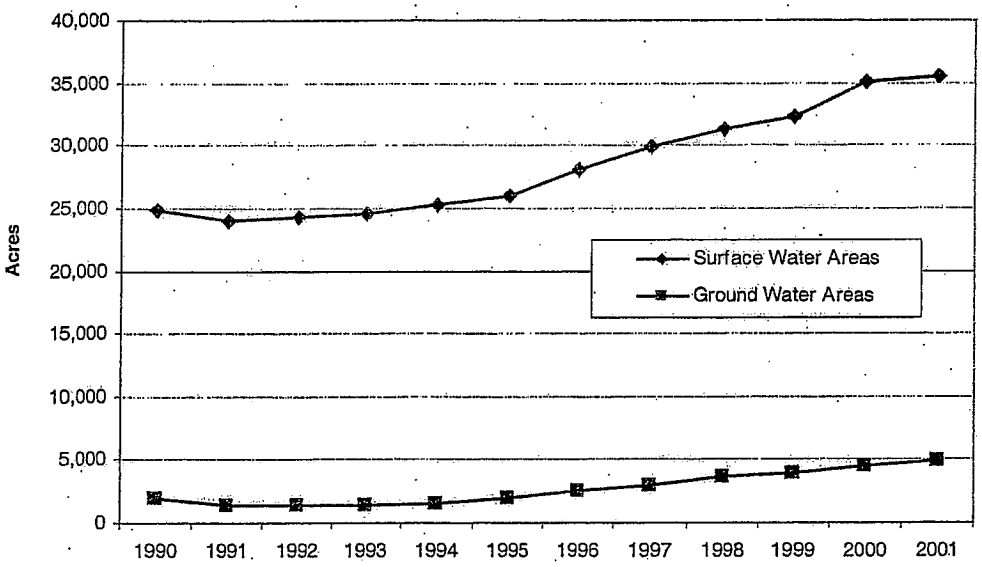


Figure 4
Permanent Crop Land in Surface and Ground Water Areas, WRMWSD



Factors Accounting for Cropping Pattern Changes

Changes in cropping patterns, whether from one type of annual crop to another or from annual crops to permanent crops, may be due to several factors. Some of the more important within WRMWSD may include:[11]

- Market conditions and crop prices;
- Input requirements and costs;
- Soil and micro-climate characteristics;
- Crop rotation requirements, including fallowing;
- Water availability and cost;
- Government programs; and
- Contracts with crop processors.

Absent detailed information from each farmer in an area, it is not possible to attribute changes in cropping patterns to any of these or other individual factors. However, changes in prices and production costs for key crops, particularly cotton, grapes, and citrus, and in water costs and availability appear to have played important roles.

Cotton prices have declined in both nominal and real terms since 1990. Acala cotton grown in Kern County[12] sold at an average farm price of $0.77 per pound in 1990. Yield averaged 1,200 pounds per acre, and gross revenue thus averaged $924 per acre.[13] In 2001, the last year for which data are currently available, the average farm price for Acala cotton grown in Kern County was $0.68 per pound. Yield averaged 1,342 pounds per acre, and gross revenue averaged $905 per acre.

While average per-acre gross revenue fell 2.1 percent between 1990 and 2001, costs of production have increased sharply and profitability has declined or disappeared for many growers. In 1995, average total costs to produce cotton in the San Joaquin Valley were estimated at $815 per acre, assuming a yield of 1,250 pounds of lint and application of 2.5

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11 These are discussed in more detail in the section on farm-level decision making.

12 Acala cotton has accounted for 76 to 93 percent of all Kern County cotton since 1990.

13 Kern County Department of Agriculture.

AF of water at $50 per AF.[14] The total cost figure excludes a payment for management or risk. Average gross revenue for cotton that year in Kern County was reported to be $815 per acre.[15] Thus, the average gross revenue for cotton in 1995 would just cover all costs, but not cover a payment to compensate for management and risk. Moreover, WRMWSD delivered water costs that year were between $58 and $193 per AF, depending on the zone of the district to which the water was delivered.[16] Thus, all other factors unchanged, cotton production in WRMWSD that year would have generated losses of between $20 and $483 per acre, disregarding any compensation for risk or management.[17]

Current published costs are $1,002 per acre for Acala cotton, assuming a lint yield of 1,250 pounds per acre and 2.5 AF of water at $60 per AF, but also excluding payments for risk and management.[18] Under these conditions and based on current cotton prices (assumed at $0.70 per pound, including loan deficiency payments), gross revenue would exceed total costs by $61 per acre, but without a return for management or risk. However, WRMWSD delivered water costs ranged from $89 to $230 per AF in 2001 and are expected to range from $101 to $260 per AF for all of 2002.[19] Clearly, cotton production is infeasible in parts of WRMWSD, and the result has been a continued shift from cotton to other, higher-profit crops

While not an exhaustive list, several factors may limit farmers from changing their crop mix. First, the market demands for fruits, nuts, and vegetable crops may signal that additional plantings of those crops would have adverse effects on supply and price. Second, processing capacity and the unavailability of processor contracts may limit the amount of vegetable crops such as tomatoes a farmer chooses to grow. Third, field and grain crops, while sometimes unprofitable in isolation, remain important parts of diversified crop rotations. Fourth, the crop history and risk characteristics of farmers may reduce the attraction of changing established cropping patterns.

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14 University of California Cooperative Extension, 1995.

15 Kern County Department of Agriculture.

16 Robert Kunde, WRMWSD, April 1, 2003, personal communication.

17 It is acknowledged that every farm is unique, characterized by soil type, debt levels, water sources and other factors. Moreover, acreage data show that cotton is clearly still profitable on some farms in WRMWSD. However, the sharp declines in cotton acreage since 1990 indicate that the crop is less profitable or unprofitable in many parts of the district.

18 University of California Cooperative Extension, 2003.

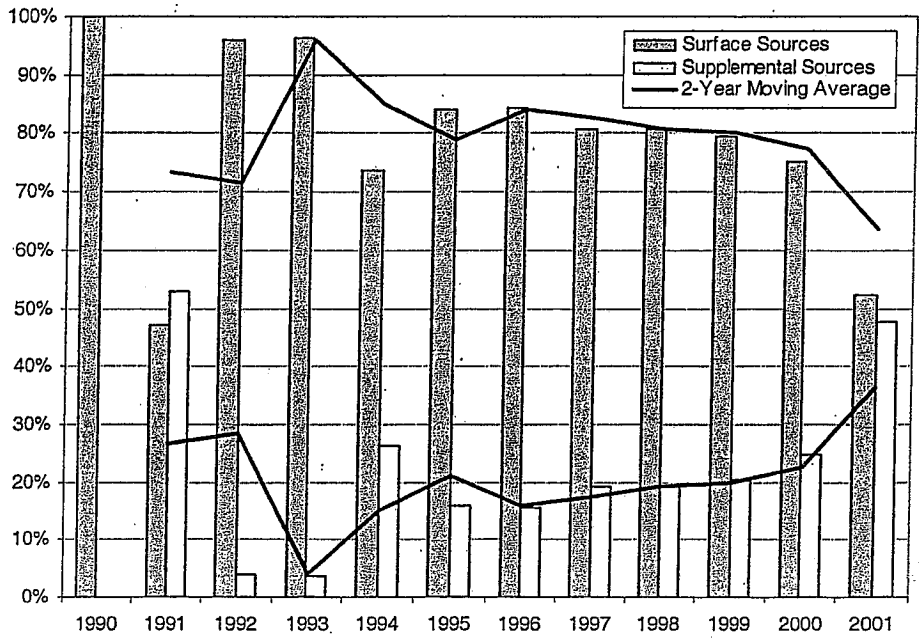
19 Robert Kunde, WRMWSD, April 1, 2003, personal communication.

Water Sources

WRMWSD has a contract for SWP water through Kern County Water Agency and regularly provides that water to farmers as supplies permit. However, WRMWSD has also developed district wells and has access to other water sources such that its "water portfolio" is much more diversified today than it was in the late 1980s or early 1990s. Much of this diversification was in response to the nearly complete abrogation of the State of California's responsibility to provide a reliable water supply from the State Water Project, aggravated by the effects of the 1987-92 drought.

Several individual sources collectively comprise the "supplemental water." These include district wells, Blanco Rosa Improvement District wells, Kern Water Bank, Pioneer Project, Berrenda Mesa project, and miscellaneous supplies. Figure 5 shows that these alternative sources have become an increasingly-important component of total WRMWSD potential water availability. The two-period moving average trend line is clearly upward sloping, while that for traditional surface sources is declining. It should be noted that the data on which the figure is based include potential surface and supplemental water supplies rather than actual deliveries. Potential surface supplies are calculated as the sum of Article 21 water, carryover, user input, and the product (SWP Entitlement * Percentage of SWP Allocation) for each year.

Figure 5
Surface and Supplemental Water Sources, WRMWSD



Water Use

WRMWSD maintains records for all water deliveries it makes each year. It does not obtain information on ground water pumping by individual farmers. Thus, total water use within the district for any given year is not a single number that can be taken from a report. Bookman-Edmonston Engineering developed average applied water requirements for crops grown in WRMWSD.[20] Estimates of total applied water within WRMWSD were developed by using these estimates and multiplying those rates by acreages taken from the annual WRMWSD crop reports. The application rates used are shown in Table 3. The estimated applications, total WRMWSD deliveries, and estimated water applied, but from other sources, are shown in Table 4.

For the period from 1990 through 1999, total annual deliveries by WRMWSD averaged 158,056 AF. From 1999 through 2001, they averaged 168,335 AF. Based on the application rates shown in Table 3 and the crop acreages shown in Table 2, WRMWSD deliveries accounted for about 63 percent of total water applied to crops in the service area from 1990 through 1999 and 65 percent from 1999 through 2001. It should be noted that the estimated applied water figures in Table 4 represent potential applications and assume that farmers were able to obtain all required water in each year. For years in which all water supplies were limited (e.g., 1991), the applied water figures overstate actual applications.

Table 3
Average Applied Water Requirements for Various Crops Grown in WRMWSD

Crop	Average Applied Water Requirement (Acre-feet per acre)
Cotton	3.00
Sugar beets	4.20
Grains	1.35
Green feeds	5.00
Mixed produce	2.20
Melons	2.20
Vineyards	2.80
Deciduous nuts	3.90
Deciduous fruits	3.90
Citrus	3.60
Pomegranates	3.60
Eucalyptus/jojoba	2.50

20 Bookman-Edmonston Engineering.

Table 4
Estimated Applied Water, by Crop and Source, WRMWSD Service Area (Acre-Feet)

Crop	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cotton	114,213	48,576	73,863	93,189	100,107	110,385	104,106	97,107	74,862	62,343	66,327	48,612
Sugar beets	3,037	3,133	3,465	2,894	1,554	1,718	634	0	760	0	0	0
Grain	3,634	4,658	13,310	11,019	5,048	12,866	15,935	11,074	21,041	16,551	12,820	12,566
Green feeds	9,180	5,730	6,030	7,210	7,570	10,010	8,685	14,615	14,685	16,700	14,665	14,620
Mixed produce	42,909	38,432	28,536	27,311	29,960	29,333	32,494	36,098	32,017	39,123	37,158	29,141
Melons	0	0	8,941	7,394	8,430	8,961	8,723	8,633	8,459	8,699	5,168	4,930
Vineyard	30,013	27,672	26,972	27,182	27,378	30,167	35,132	39,822	42,882	44,086	48,684	49,563
Deciduous Nuts	26,774	26,906	26,910	27,386	28,856	28,295	29,796	29,734	31,972	32,686	33,185	32,639
Deciduous Fruit	8,089	8,198	7,851	7,831	8,034	8,057	8,401	8,600	8,206	7,757	8,026	7,519
Citrus	22,363	22,439	24,030	24,955	26,068	26,896	28,332	30,535	32,436	35,053	40,043	43,308
Pomegranates	875	875	1,264	1,264	1,264	1,264	1,264	1,264	1,217	1,357	1,357	1,357
Eucalyptus/jojoba	1,640	230	533	35	15	15	48	48	48	48	48	48
Total estimated applied water [1/]	262,726	186,848	221,704	237,670	244,283	267,965	273,549	277,527	268,584	264,402	267,480	244,303
Total WRMWSD Deliveries	187,335	65,274	125,979	146,524	160,564	162,138	202,581	198,305	149,292	182,570	183,929	138,506
WRMWSD Deliveries/Total estimated applied water	71%	35%	57%	62%	66%	61%	74%	71%	56%	69%	69%	57%
Estimated Water Applied From Other Sources	75,391	121,574	95,725	91,146	83,720	105,827	70,968	79,222	119,292	81,832	83,551	105,797

1/ Assumes supplies available regardless of source.

Decision-Making by Farmers

The data shown in the previous section reflect the combined effects of innumerable decisions made by farmers in the WRMWSD service area each year. Farm-level decision making in WRMWSD and every other agricultural area is a continuous process that adheres to and at times departs from traditional economic theory and models.

Farmers operate, more than most other industries, in an environment closely aligned with the "purely competitive" model of economics.[21] Agriculture includes thousands of producing units all making decisions independent of each other, virtually all are price takers, all have access to good information about markets and prices, and all, or nearly all, are trying to earn as much profit as they can from their operations.

There are extensive domestic and international influences on agriculture. Domestically, the price of natural gas affects fertilizer prices, the price of crude oil affects costs of gasoline and diesel fuel, interest rates affect the cost of operating loans, and economic growth affects consumer demands for all types of products. Agriculture is also subject to many influences from the global economy, evident in the tariffs in the U.S. and other countries on agricultural imports, the increasing production of such crops as cotton and deciduous nuts in Asia, and fluctuating exchange rates.

The decision-making framework which farmers must employ for their operations therefore includes considerations well beyond the farm gate. The results are indicated by decisions such as:

- Crops to plant and when;
- Inputs used and in what combinations;

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21 See Henderson and Quandt.

- When and how to acquire or sell resources;
- When and where to sell harvested crops; and
- When to adopt new technology.

Profit Maximization

One of the key assumptions in agricultural economics and farm management is that farmers attempt to use resources in a way that will maximize the profit of their operations.[22] An expanded form of that assumption is that farmers, with limited capital, attempt to allocate resources to their land in order to maximize profit across all crops they grow. There are many combinations of inputs which farmers can use in their operations, reflecting opportunities and costs. For example, weeds can be controlled chemically or with manual labor. Seeding and harvesting can be accomplished mechanically or by hand. Land preparation and fertilizing can be undertaken by the farmer or performed by custom operators.

In attempting to maximize profits, farmers weigh the tradeoffs and combine inputs in such a way that, at the margin, the value of product produced with each unit of input is the same for all inputs. All other factors unchanged, so long as the "value of marginal product" is greater for one input than for others, it is rational for the farmer to use at least one more unit of that input because the revenue from the product produced with that unit will exceed the cost of the input.[23] It is reasonable to assume that this framework is applicable not only to such inputs as fertilizer and chemicals, but also to water.

Crop Rotations and Profit Maximization Over Time

The decision-making framework is somewhat more complicated for the more realistic situation of farming continuously over time rather than in many separate single-year periods. This is particularly true for trees and vines, which take several years to mature and then remain productive for many years. However, for farmers growing several annual crops, a realistic goal would be to maximize profits over a crop rotation. Rotations generally include a sequence which alternates a variety of crops. Rotations may involve several crops and

22 See, for example, Heady and Kay and Edwards.

23 It is recognized that not all farmers are in business to maximize profits and do not have, at all times, the information possibly relevant to efficient decision making. However, given the unavailability of information on alternative goals, it is usually assumed that farmers are in business to maximize their profits. See Heady.

cover a period of several years. Accordingly, crop rotations may have a direct effect on the cropping pattern data reported for a given area.

The purposes of rotations include rebuilding soil nutrient levels, reducing pest concentrations and disease problems, and enhancing soil organic matter. It has been demonstrated that continuously planting the same crop on land causes the population of soil borne pathogens to increase.[24] Planting crops that are not hosts causes the populations of those pathogens to decline. Plants which belong to the same family or class of plants (e.g., broadleaf) often share similar pest problems. Thus, effective rotations must incorporate crops which are not closely related.

Some of the factors which affect the rotations used by farmers include the following:[25]

- Cropping history;
- Grower experience;
- Input requirements for crops;
- Compatibility of crops with existing equipment complement and with labor;
- Existing array of pests; and
- Value of crop and market conditions.

Cotton has traditionally been the core crop for rotations in many parts of Kern County. Historically, rotations included cotton and small grains, both grown for commercial sale.[26] More recently, however, small grains have not been grown as extensively for commercial sale because of low crop prices. They are still grown for silage. Other crops more typically included in cotton rotations are tomatoes, onions, melons, carrots, and alfalfa. Typical rotations might include:

- Two years of cotton and one year of tomatoes or melons;
- Two years of cotton, one year of tomatoes or melons or onions, and three years of alfalfa; and

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24 See Nunez.

25 University of California Cooperative Extension, 1995.

26 Brian Marsh, University of California Cooperative Extension, Bakersfield, March 26, 2003, personal communication.

- One or two years of cotton, three years of alfalfa, one year of tomatoes or melons or onions or carrots, and one year of small grain.

By incorporating small grain and comparable crops into rotations, farmers sometimes appear to be growing economically-inefficient crops. However, the use of low-return crops such as small grains in rotations often reflects agronomic rather than purely economic considerations. The value from these crops would be reflected in better soil conditions and higher yields for other rotation crops in subsequent years. Thus, because of rotations, profit maximization must be viewed from a multi-year rather than a single-year perspective.

Fallowing may be an integral part of crop rotations. Fallowing, with a cover crop, may offer efficient opportunities to rebuild soil organic matter and conserve soil moisture. In addition, farmers may fallow some of their land in order to divert irrigation water usually used there to other, more productive parts of their farms. Farmers may also fallow land in order to be eligible for provisions of various government farm programs or as a component of reduced-tillage strategies.

Effects of Water Costs and Availability

As noted previously, changes in measured cropping patterns for an area may be due to a variety of factors, including market conditions, crop prices, government programs, contracts with crop processors, and soil and climate characteristics. For WRMWSD farmers and other farmers throughout the San Joaquin Valley, the availability and cost of water are also critical factors in farmers' decisions on which crops to grow and thus in reported cropping patterns. As water reliability is reduced or water costs increase, economic theory suggests that farmers will adjust their crop and input choices to reflect the greater relative scarcity or cost of the resource.

For SWP water, both factors are likely important. Reliability of SWP water was addressed in a recently-completed report, which projected likely delivery capability of the system through 2021.[27] The key findings were that:

- In 75 percent of the years, the annual water delivery of the SWP is estimated to be at least 66 percent of full Table A deliveries
- In 50 percent of the years, annual water delivery is estimated to be at least 83 percent; and
- In 10 percent of the years, annual water delivery is estimated to be at least 98 percent.

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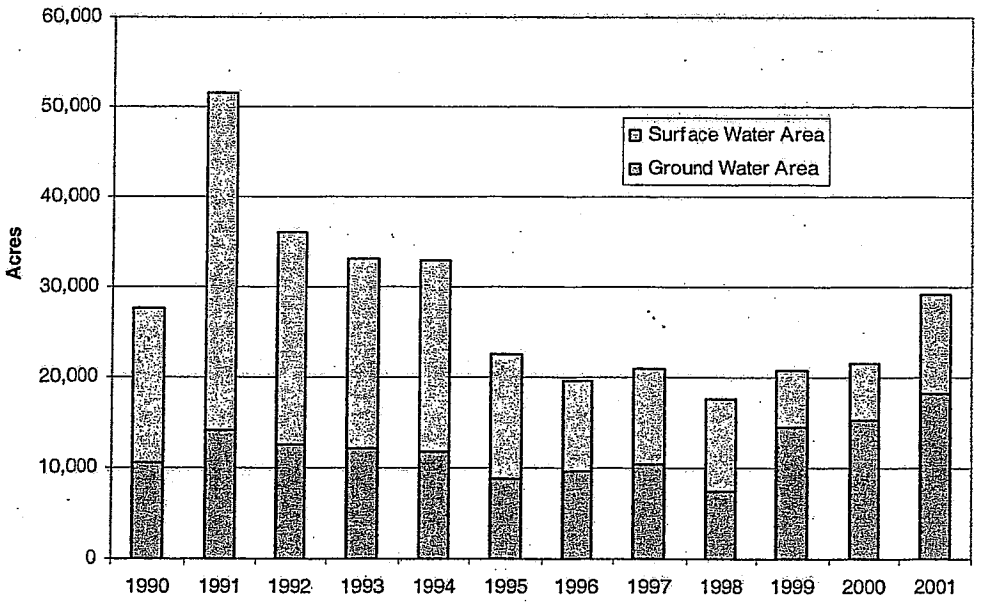
27 California Department of Water Resources, 2002.

Moreover, costs of SWP water and other key inputs have risen, in some cases to the point that uncertainties over water deliveries, crop prices, and other key variables have caused some farmers to change their rotations and crop selection. The shift from annual to permanent crops in WRMWSD likely reflects this behavior. As discussed previously, cotton production is no longer feasible for many farmers. The shift from cotton and other annual crops to permanent crops in the surface water service areas of WRMWSD is evidence of these and other issues. Similar shifts in ground water service areas likely reflect the increased costs of production, including increased costs for energy used in pumping.

District data show that the amount of fallowed land has increased since 1998. Prior to that year, most of the fallowed land in WRMWSD was in the surface water service areas. Since then, an increasing amount of fallowed land has been in ground water service areas (see Figure 6). It is likely that some land has been fallowed for longer periods or idled because of the high costs of production, including water. Between 1992 and 1996, SWP deliveries to WRMWSD rose, and total fallowed land in the district fell. In 1997, about equal amounts of land were fallowed in surface water and ground water service areas. However, while SWP deliveries fell from 1996 to 1998, the amount of fallowed land in surface water areas decreased rather than increased. As deliveries rose by about 36,000 AF between 1998 and 2000, fallowed land in surface water areas declined about 3,700 acres, while that in ground water areas increased about 9,800 acres.

Figure 6
Fallowed Land in Ground Water and Surface Water Service Areas, WRMWSD



Results

This section evaluates the expected effects on agricultural practices, including land fallowing, of the 41,000 AF transfer of SWP water from WRMWSD. It draws from the discussion of farm-level decision making and from a review of data presented throughout the report. The approach utilized to estimate the impacts relies on a review of long-term water demands in WRMWSD and of other data previously presented. Discussion includes the expected effects of the transfer during normal and wet years and in dry years on district supplies and costs and on farmer responses.

Table 4 shows that total WRMWSD deliveries of water from all sources since 1990 have varied from a minimum of about 65,000 AF in 1991 to a maximum of nearly 203,000 AF in 1996. Table 4 also shows that estimated total applied water requirements have ranged from about 187,000 AF in 1991 to nearly 278,000 AF in 1997. Estimated total water applied using all water sources fell by 13,125 AF between 1997 and 1999 and by an additional 20,099 AF between 1999 and 2001. From 1990 through 1999, WRMWSD deliveries accounted for an average of 63 percent of total applied water. From 1999 through 2001, they accounted for 65 percent.

Prior to the 41,000 AF transfer, WRMWSD had a water supply contract to Kern County Water Agency for Table A amount of about 238,000 AF of SWP water. In normal or wet years, the 41,000 AF appears to be in excess of district needs. It is therefore reasonable to assume that in those years, the transfer would have no effects or minimal adverse effects on overall water supply. Moreover, it is likely that the transfer would not cause overall water costs to increase in normal or dry years. Therefore, neither quantity nor cost of district water should be affected adversely, and the impacts on land fallowing should be minimal.

In years when the demand for SWP water exceeds supply, the impacts of the transfer on fallowing are more difficult to estimate. Assuming an SWP allocation of 50 percent, the 41,000 AF contract amount would provide 20,500 AF of water, sufficient to irrigate 6,000 to 7,000 acres of land. Cropped acreage within WRMWSD varies by an average of 11.6 percent per year, or about 9,700 acres. That variation is a result not only of water supplies

and costs, but also market conditions and crop prices, changes in government programs, input costs, and other factors. In a series of consecutive 'dry years,' the unavailability of a proportional share of the SWP contract amount may contribute to a mismatch between water supply and demand. However, the effect depends on the annual reliable supply and costs of the water from district wells and the other supplemental sources. If the supplies from the supplemental sources offset the reduced SWP entitlement, there should be a limited effect on water availability. Overall, the water supplies from the supplemental sources more than offset the reduced SWP Entitlement and, when the carrying cost of holding excess SWP Entitlement is considered, at a lower cost.

If overall water costs increase, there may be some farm-level impacts. WRMWSD has used several of its supplemental sources concurrently only in 2001. The variable and fixed costs (excluding capital costs) for that year did not differ substantially from SWP costs over the previous five years. If the costs in 2001 are representative, the incremental impacts of the transfer on delivered water costs to farmers should not be significant. The amount of land fallowed in this dry year scenario, including the transfer, should not be materially different from the normal variation in cropped acreage between years.

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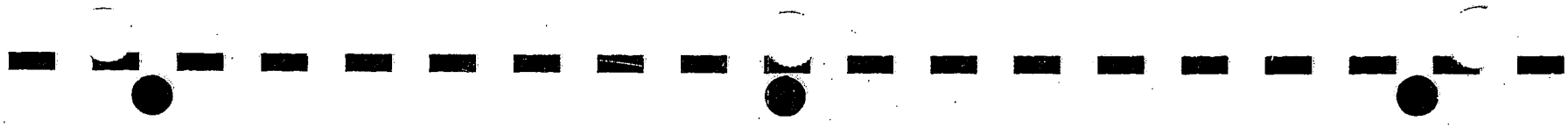
Appendix D

Technical Data for Hydrologic Analysis



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INTRODUCTION

The purpose of this appendix is to provide supporting information for the water analyses conducted for the Environmental Impact Report (EIR) for the Castaic Lake Water Agency's (CLWA's) supplemental State Water Project (SWP) Table A Amount transfer of 41,000 acre-feet (AF). Specifically, the appendix contains supporting information about the analysis of the SWP water supply and San Luis Reservoir and Castaic Lake storage performed for the Project.

The Project is the transfer of an existing 41,000 AF of SWP Table A Amount from the Kern County Water Agency (KCWA), and its member unit, the Wheeler Ridge-Maricopa Water Storage District (WRMWSD), to CLWA. The Project also includes the use of SWP facilities from Northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. The Project water is transported from points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities.

The Project currently is being implemented by an amendment to the SWP Water Supply Contracts of CLWA and KCWA. The Project is to authorize CLWA to use the water from the 41,000 AF of SWP Table A Amount for water demands of existing users and some anticipated future water demands.

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1.0 STATE WATER PROJECT DESCRIPTION

1.1 STATE WATER PROJECT FACILITIES

The SWP is a large water supply, storage, and distribution system authorized by an act of the California State Legislature in 1959. In 1960, California voters approved a $1.75 billion bond issue to begin building SWP facilities. Today, the SWP includes 28 storage facilities, reservoirs and lakes; 20 pumping plants; six pumping-generating plants and hydroelectric power plants; and about 660 miles of aqueducts and pipelines (DWR 2002). Figure 1-1 provides an overview of SWP facilities.

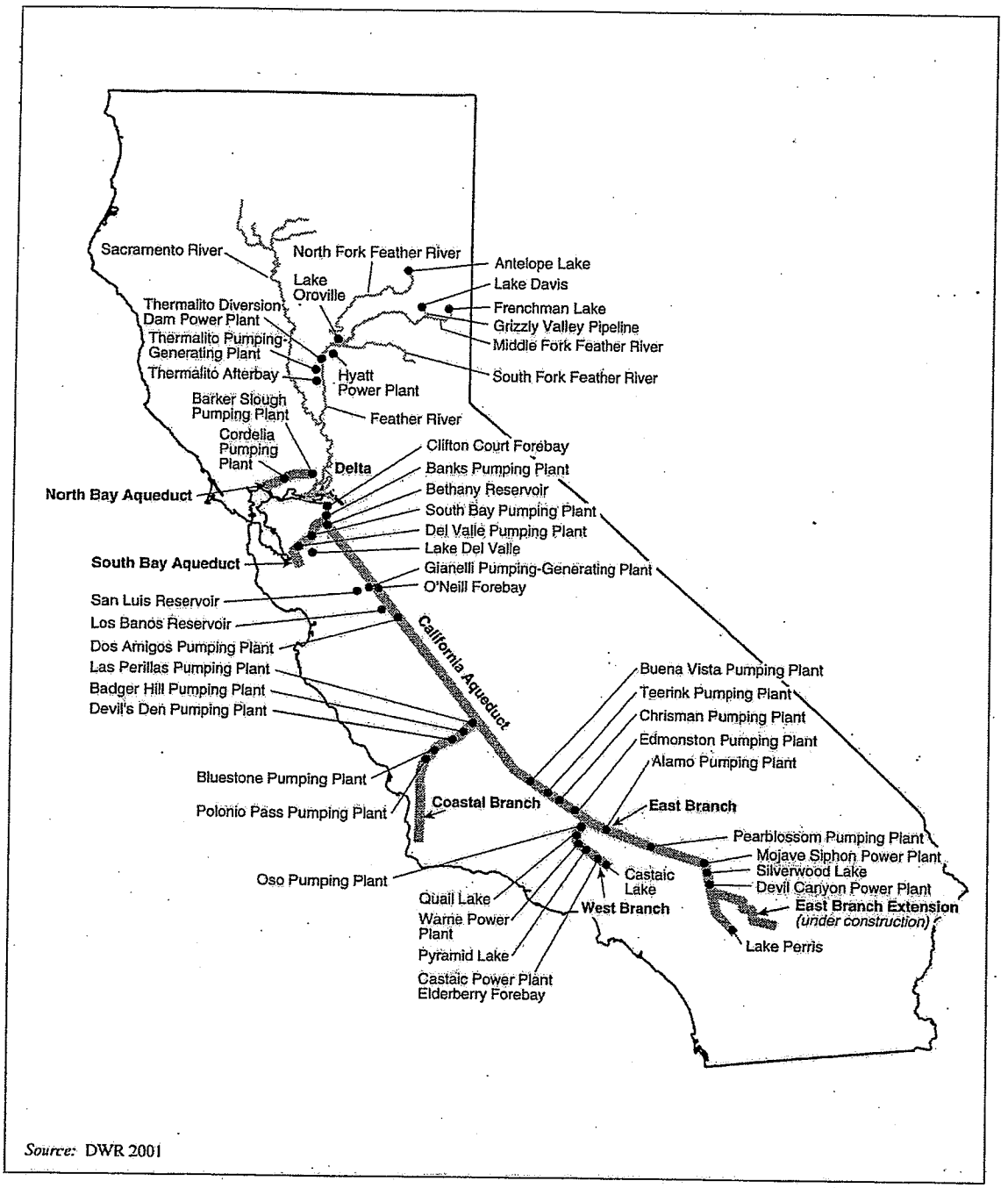
The primary purpose of the SWP is to distribute water to 29 urban and agricultural public water agencies (or "Contractors") in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. The 29 SWP Contractor service areas are shown in Figure 1-2. Of total current SWP deliveries, approximately 50 percent goes to meet the needs of the state's growing urban population, and approximately 50 percent is used to irrigate farmland (DWR 2002). The SWP provides supplemental water to approximately 22 million persons and 600,000 acres of farmland (DWR 2002). In addition to its primary purpose, the SWP is also operated to assist in the control of Feather River floodwaters, provide recreation, generate energy, and enhance fish and wildlife habitats.

The primary water source for the SWP is within the drainage of the Feather River, a tributary of the Sacramento River. This runoff is primarily stored behind Oroville Dam in Butte County. Lake Oroville can hold a maximum of 3.5 million AF, including storage for both water supply and flood control. Water released from Oroville Dam flows down natural channels to the Sacramento-San Joaquin River Delta (Delta) where some of the water is pumped through the North Bay Aqueduct to serve Napa and Solano counties.

In the southern Delta, water is pumped into the 444-mile-long Governor Edmund G. Brown California Aqueduct (California Aqueduct) at the Clifton Court Forebay by the Harvey O. Banks Delta Pumping Plant (Banks Pumping Plant). The Clifton Court Forebay provides storage and regulation capability for the Banks Pumping Plant. Water from the Delta enters the Clifton Court Forebay from the West Canal, a channel of Old River, through an intake structure at the southeastern corner of the forebay. From Clifton Court Forebay, water passes through the John E. Skinner Delta Fish Protective Facility where fish are screened out before the water is pumped into the aqueduct.

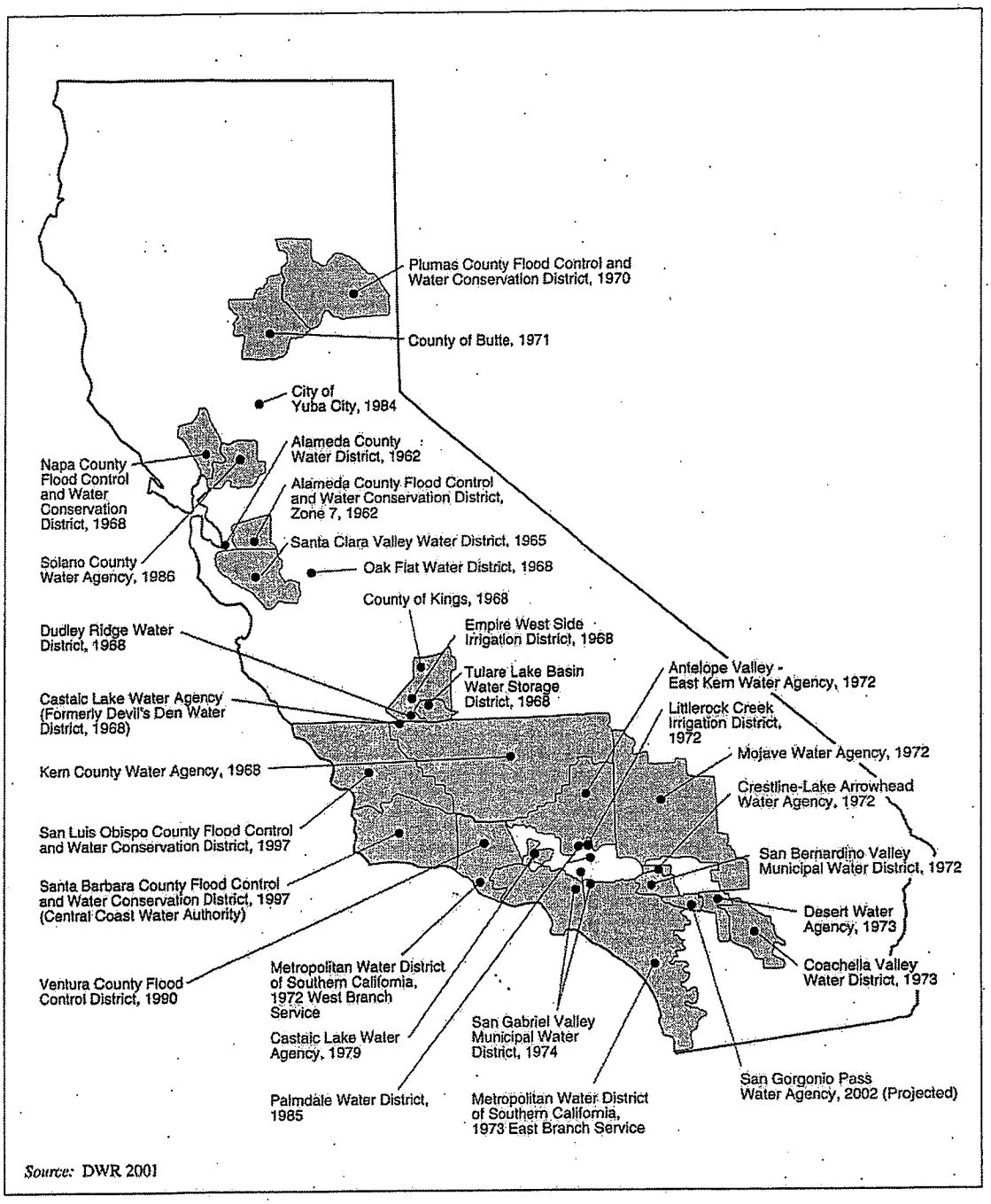
SWP water exports for users south of the Delta pumping facilities are currently limited by a series of water quality and operational constraints, governed primarily by the California State Water Resources Control Board's (SWRCB) Water Right Decision 1641, as amended. Decision 1641 is summarized in Figure 1-3. Decision 1641 was adopted by the SWRCB in 1999; prior to that time, SWP water exports from the Delta were limited by the SWRCB's Water Right Decision 1485 (adopted in 1978), Order Water Right (WR) 95-6 (adopted in 1995), and Order WR 98-09 (adopted in 1998).

The Central Valley Project (CVP), a federal water supply project that supplies water to users in Northern California and the San Joaquin Valley, also diverts water from the southern Delta at



Source: DWR 2001

Figure 1-1. Primary SWP Facilities



Source: DWR 2001

Figure 1-2. SWP Contractor Service Areas

Figure 1-3. Water Quality Criteria Applicable to SWP Delta Pumping

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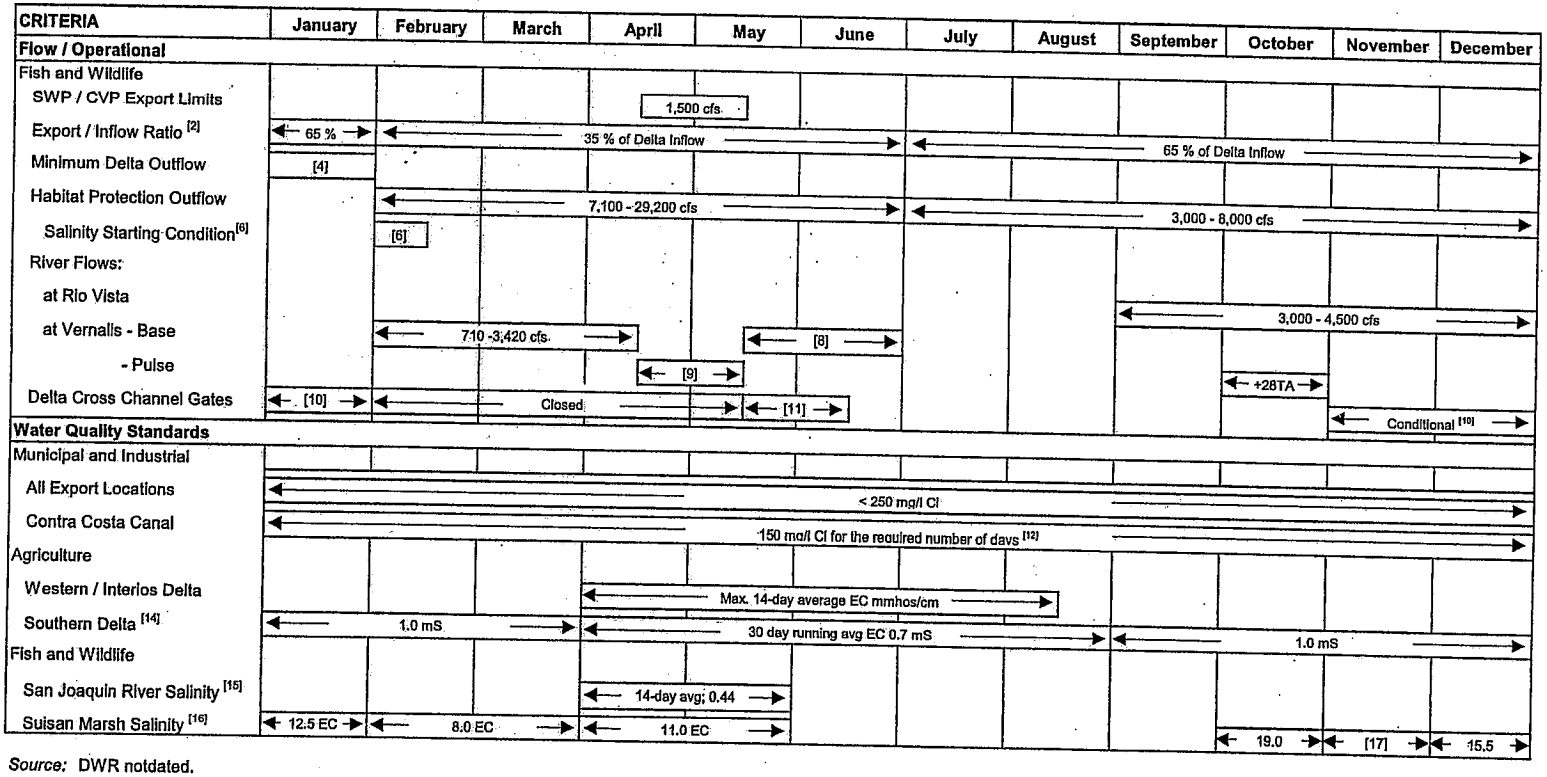

Source: DWR notdated.

Figure 1-3. Water Quality Criteria Applicable to SWP Delta Pumping
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Footnotes:

[1] Maximum 3-day running average of combined export rate (cfs) which includes Tracy Pumping Plant and Clifton Court Forebay inflow less Byron-Bethany.

Year Type	All
Apr. 15	The greater of 1,500 or 100%
May 15*	of 3-day average Vernalis flow

*This time period may need to be adjusted to coincide with fish migration. Maximum export rate may be varied by CalFed Op's group.

[2] The maximum percentage of average Delta inflow (use 3-day average for balanced conditions with storage withdrawal, otherwise use 14-day average) diverted at Clifton Court Forebay (excluding Byron-Bethany pumping) and Tracy Pumping Plant using a 3-day average. (These percentages may be adjusted.)

[3] The maximum percent Delta inflow diverted for Feb may vary depending on the January 8RI.

Jan 8RI	Feb exp. Limit
≤ 1.0 MAF	45%
between 1.0 & 1.5 MAF	35% - 45%
> 1.5 MAF	35%

[4] Minimum monthly average Delta outflow (cfs). If monthly standard ≤ 5,000 cfs, then the 7-day average must be within 1,000 cfs of standard; If monthly standard > 5,000 cfs, then the 7-day average must be > 80% of standard.

Year Type	All	W	AN	BN	D	C
Jan	4,500*					
Jul		8,000	8,000	6,500	5,000	4,000
Aug		4,000	4,000	4,000	3,500	3,000
Sep	3,000					
Oct		4,000	4,000	4,000	4,000	3,000
Nov-Dec		4,500	4,500	4,500	4,500	3,500

*Increase to 6,000 if the Dec 8RI is greater than 800,000 AF.

[5] Minimum 3-day running average of daily Delta outflow of 7,100 cfs OR: either the daily average or 14-day running average EC at Collinsville is less than 2.64 mmhos/cm (This standard for March may be relaxed if the Feb 8RI is less than 500 KAF. The standard does not apply in May and June if the May estimate of the SRI is < 8.1 MAF at the 90% exceedance level in which case a minimum 14-day running average flow of 4,000 cfs is required.) For additional Delta outflow objectives, see TABLE A.

[6] February starting salinity: If Jan 8RI > 900 KAF, then the daily or 14-day running average EC at Collinsville must be < 2.64 mmhos/cm for at least one day between Feb 1-14. If Jan 8RI is between 650 KAF and 900 KAF, then the CalFed Op's group will determine if this requirement must be met.

[7] Rio Vista minimum monthly average flow rate in cfs (the 7-day running average shall not be less than 1,000 below the monthly objective.

Year Type	All	W	AN	BN	D	C
Sep	3,000					
Oct		4,000	4,000	4,000	4,000	3,000
Nov-Dec		4,500	4,500	4,500	4,500	3,500

[8] BASE Vernalis minimum monthly average flow rate in cfs (the 7-day running average shall not be less than 20% below the objective). Take the higher objective if X2 is required to be west of Chipps Island.

Year Type	All	W	AN	BN	D	C
Feb-Apr 14 and May 16 - Jun		2,130 or 3,420	2,130 or 3,420	1,420 or 2,280	1,420 or 2,280	710 or 1,140

[9] PULSE Vernalis minimum monthly average flow rate in cfs. Take the higher objective if X2 is required to be west of Chipps Island.

Year Type	All	W	AN	BN	D	C
Apr 15 - May 15		7,330 or 8,620	5,730 or 7,020	4,620 or 5,480	4,020 or 4,880	3,110 or 3,540
Oct	1,000					

* Up to an additional 28 KAF pulse/attraction flow to bring flows up to a monthly average of 2,000 cfs except for a critical year following a critical year. Time period based on real-time monitoring and determined by CalFed Op's group.

[10] For the Nov-Jan period, Delta Cross Channel gates may be closed for up to a total of 45 days.

[11] For the May 21-June 15 period, close Delta Cross Channel gates for a total of 14 days per CALFED Op's group. During the period the Delta cross channel gates may close 4 consecutive days each week, excluding weekends.

[12] Minimum # of days that the mean daily chlorides ≤ 150 mg/l must be provided in intervals of not less than 2 weeks duration. Standard applies at Contra Costa Canal Intake or Antioch Water Works Intake.

Year Type	W	AN	BN	D	C
# Days	240	190	175	165	155

[13] The maximum 14-day running average of mean daily EC (mmhos/cm) depends on water year type.

	WESTERN DELTA				INTERIOR DELTA			
	Sac River @ Emmaton		SJR @ Jersey Point		Mokelumne R @ Terminous		SJR @ San Andreas	
Year Type	0.45 EC from April 1 to date shown	EC value from date shown to Aug 15*	0.45 EC from April 1 to date shown	EC value from date shown to Aug 15*	0.45 EC from April 1 to date shown	EC value from date shown to Aug 15*	0.45 EC from April 1 to date shown	EC value from date shown to Aug 15*
W	15-Aug		15-Aug		15-Aug		15-Aug	
AN	1-Jul	0.63	15-Aug		15-Aug		15-Aug	
BN	20-Jun	1.14	20-Jun	0.74	15-Aug		15-Aug	
D	15-Jun	1.67	15-Jun	1.35	15-Aug		25-Jun	0.58
C		2.78		2.2		0.54		0.87

* When no date is shown, EC limit continues from April 1.

1

Figure 1-3. Water Quality Criteria Applicable to SWP Delta Pumping
Page 3 of 3

[14] As per D-1641, for San Joaquin River at Vernalis: however, the April through August maximum 30-day running average EC for San Joaquin River at Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge shall be 1.0 EC until April 1, 2005 when the value will be 0.7 EC.

[15] Compliance will be determined between Jersey Point & Prisoners Point. Does not apply in critical years or in May when the May 90% forecast of SRI < 8.1 MAF.

[16] & [17] During deficiency period, the maximum monthly average mhtEC at Western Suisun Marsh stations as per SMPA is:

Month	mhtEC
Oct	19.0
Nov	16.5
Dec-Mar	15.6
Apr	14.0
May	12.5

In November, maximum monthly average mhtEC = 16.5 for Western Marsh stations and maximum monthly average mgtEC = 15.5 for Eastern Marsh stations in all periods types.

TABLE A **Number of Days When Max. Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained**

(This can also be met with a maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average Delta outflows of 11,400 cfs and 29,200 cfs, respectively.) Port Chicago Standard is triggered only when the 14-day average EC for the last day of the previous month is 2.64 mmhos/cm or less. PMI is previous month's SRI. If salinity/flow objectives are met for a greater number of days than required for any month, the excess days shall be applied towards the following month's requirement. The number od day's for values of the PMI between those specified below shall be determined by linear interpolation.

PMI (TAF)	Chipps Island (Chipps Island Station D10)				
	FEB	MAR	APR	MAY	JUN
≤ 500	0	0	0	0	0
750	0	0	0	0	0
1000	28*	12	2	0	0
1250	28	31	6	0	0
1500	28	31	13	0	0
1750	28	31	20	0	0
2000	28	31	25	1	0
2250	28	31	27	3	0
2500	28	31	29	11	1
2750	28	31	29	20	2
3000	28	31	29	27	4
3250	28	31	29	29	8
3500	28	31	29	30	13
3750	28	31	29	31	18
4000	28	31	29	31	23
4250	28	31	29	31	25
4500	28	31	29	31	27
4750	28	31	29	31	28
5000	28	31	29	31	29
5250	28	31	29	31	29
≥5500	28	31	29	31	30

PMI (TAF)	Port Chicago (continuous recorder at Port Chicago)				
	FEB	MAR	APR	MAY	JUN
0	0	0	0	0	0
250	1	0	0	0	0
500	4	1	0	0	0
750	8	2	0	0	0
1000	12	4	0	0	0
1250	15	6	1	0	0
1500	18	9	1	0	0
1750	20	12	2	0	0
2000	21	15	4	0	0
2250	22	17	5	1	0
2500	23	19	8	1	0
2750	24	21	10	2	0
3000	25	23	12	4	0
3250	25	24	14	6	0
3500	25	25	16	9	0
3750	26	26	18	12	0
4000	26	27	20	15	0
4250	26	27	21	18	1
4500	26	28	23	21	2
4750	27	28	24	23	3
5000	27	28	25	25	4
5250	27	29	25	26	6
5500	27	29	26	28	9
5750	27	29	27	28	13
6000	27	29	27	29	16
6250	27	30	27	29	19
6500	27	30	28	30	22
6750	27	30	28	30	24
7000	27	30	28	30	26
7250	27	30	28	30	27
7500	27	30	29	30	28
7750	27	30	29	31	28
8000	27	30	29	31	29
8250	28	30	29	31	29
8500	28	30	29	31	29
8750	28	30	29	31	30
9000	28	30	29	31	30
9250	28	30	29	31	30
9500	28	31	29	31	30
9750	28	31	29	31	30
10000	28	31	30	31	30
>10000	28	31	30	31	30

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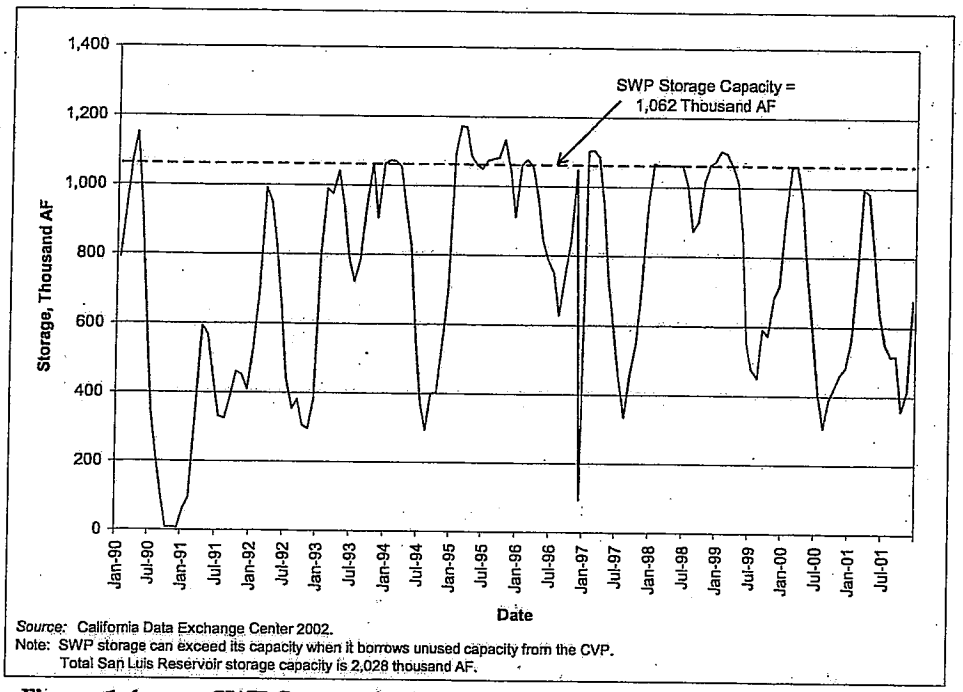
the CVP's Tracy Pumping Plant. The SWP and CVP include facilities south of the Delta that were specifically designed for joint use by both projects, including San Luis Reservoir and a section of the California Aqueduct south of San Luis Reservoir. In addition, the SWRCB in the 1999 Water Rights Decision 1641, authorized the SWP and CVP to use their separate pumping plants as joint points of diversion, allowing each project to use excess pumping capacity at the other project's pumping plant.

From the southern Delta facilities, water in the California Aqueduct travels along the west side of the San Joaquin Valley and is either delivered directly to Contractors or is stored in San Luis Reservoir, the SWP's main storage facility south of the Delta. San Luis Reservoir, located approximately 60 miles south of the Banks Pumping Plant, is an off-stream storage reservoir with a total capacity of more than 2 million AF (of which, approximately 1,062,000 AF is allocated to the SWP and the remainder is allocated to the CVP [DWR 2002]). The SWP's California Aqueduct and the CVP's Delta Mendota Canal join at the O'Neill Forebay. Water is lifted by a pump-generating plant from O'Neill Forebay into the San Luis Reservoir. Water is released from San Luis Reservoir back through the pump-turbines to the forebay and energy is reclaimed.

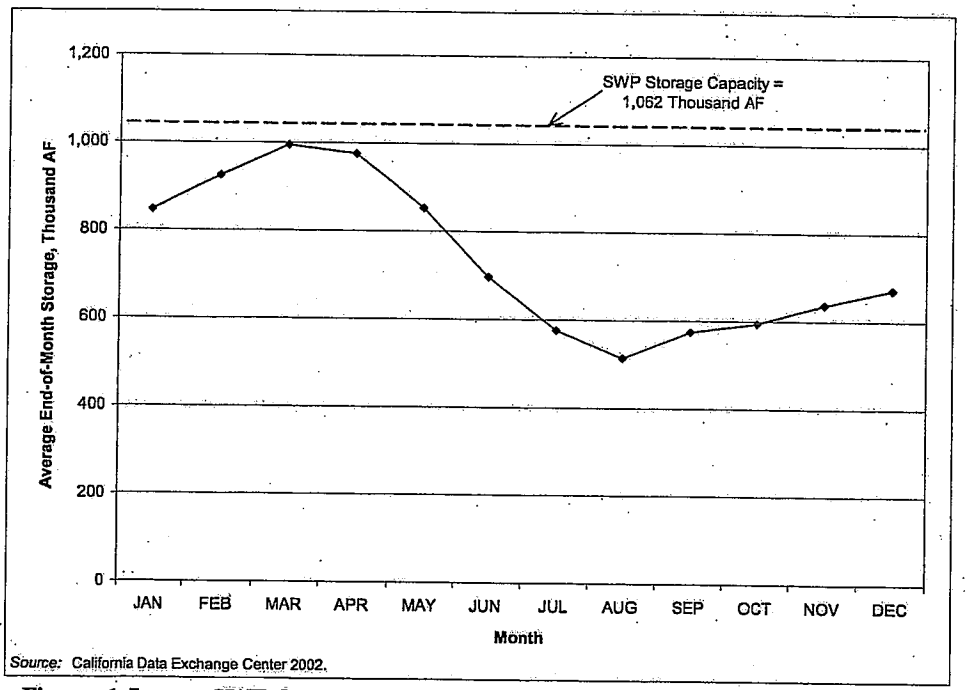
In general, the SWP is operated to fill storage reservoirs during the high runoff months of the winter and early spring. In addition to hydrology, regulatory requirements for the Delta and associated operational constraints also affect the timing and ability to fill reservoirs south of the Delta. Under current operating conditions, including Decision 1641, SWP diversions from the Delta are significantly reduced as of April 15 of each year (see Figure 1-3). As a result, the SWP is operated to store as much water as possible in San Luis Reservoir prior to April 15. The stored water is then released to meet Contractor demands during the high-demand summer and fall months to supplement the more limited pumping from the Delta during those months. Figure 1-4 shows the volume of SWP water stored in San Luis Reservoir for the period of 1990 to 2001. Figure 1-5 shows the average end-of-month SWP storage in San Luis Reservoir from 1990 to 2001. As is shown in these figures, San Luis Reservoir SWP storage levels vary considerably, both during the year and from year to year. From 1990 to 2001, SWP storage in the reservoir has ranged from approximately zero to more than 1.1 million AF (see Figure 1-4).

Water is conveyed southward from San Luis Reservoir via the California Aqueduct to the primarily agricultural users in the San Joaquin Valley and the primarily urban regions of the Central Coast and Southern California. Water is diverted from the aqueduct and delivered directly to SWP Contractors, including KCWA, in the central and southern San Joaquin Valley at various locations along the aqueduct. Near Kettleman City, SWP water is diverted from the California Aqueduct into the Coastal Branch, which carries water to San Luis Obispo and Santa Barbara counties. Most of the flow in the California Aqueduct continues southward, traversing the west side of the San Joaquin Valley through a series of four pumping plants (Dos Amigos, Buena Vista, Teerink and Chrisman) before reaching the Edmonston Pumping Plant. The capacity of these reaches of the California Aqueduct ranges from 10,000 cfs at the northern end to approximately 4,400 cfs at the Edmonston Pumping Plant. The Edmonston Pumping Plant pumps water over the Tehachapi Mountain Range, the California Aqueduct then divides into the East Branch and the West Branch. Water intended for use by CLWA is conveyed through the West Branch through Quail and Pyramid lakes and then to Castaic Lake, the terminus for the West Branch.



Source: California Data Exchange Center 2002.
Note: SWP storage can exceed its capacity when it borrows unused capacity from the CVP.
Total San Luis Reservoir storage capacity is 2,028 thousand AF.

Figure 1-4. SWP Storage in San Luis Reservoir, 1990 to 2001



Source: California Data Exchange Center 2002.

Figure 1-5. SWP Storage in San Luis Reservoir, 1990 to 2001 Average End-of-Month Storage

Quail and Pyramid lakes are located between the KWCA turnouts for deliveries to WRMWSD and the CLWA turnout on the West Branch of the California Aqueduct. Because of Quail Lake's limited storage capacity (approximately 7,800 AF) the lake is primarily used for re-regulation of aqueduct flows. Pyramid Lake, which has a storage capacity of approximately 171,200 AF, is used to provide an emergency water supply, in the case of a major supply system outage, to the SWP Contractors that receive deliveries from the West Branch; and is used in the pump/generation operation of the Castaic Power Plant, located between Pyramid and Castaic lakes.

Castaic Lake has a storage volume of approximately 323,700 AF. As shown on Figure 1-6, from 1990 to 2001, storage has ranged from a minimum of approximately 150,000 AF to a maximum of approximately 320,000 AF. The average end-of-month storage from 1990 to 2001 in Castaic Lake is shown on Figure 1-7. The reservoir is operated to provide regulatory storage to meet peak deliveries during the summer months for the three Contractors that receive water from Castaic Lake (CLWA, the Metropolitan Water District of Southern California [MWD], and the Ventura County Flood Control District [VCFCD]), and to provide an emergency water supply in the case of a major supply system outage. As part of the Monterey Amendment, these three SWP Contractors have access to 160,000 AF of the storage from Castaic Lake as "flexible storage," which they may withdraw in addition to their allocated SWP supplies and which they must replace within five years of any withdrawal. Local runoff captured in Castaic Lake is managed in compliance with an agreement between DWR and the holders of prior water rights.

SWP deliveries from Castaic Lake to each SWP Contractor that received water from the lake from 1990 to 2000 are provided in Table 1-1. From 1990 to 2000, CLWA's deliveries from Castaic Lake averaged approximately 19,200 AF, or approximately 6 percent of total annual SWP deliveries from the lake.

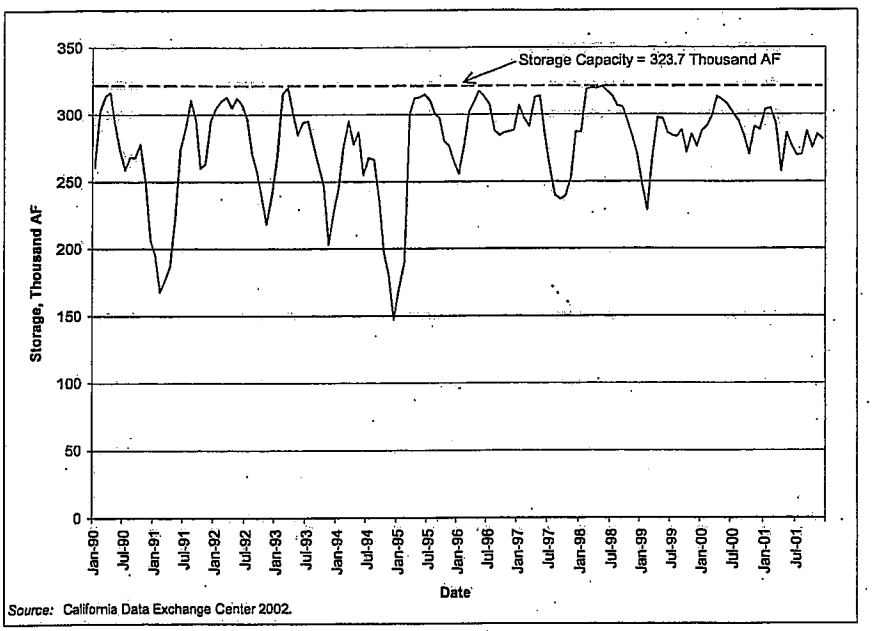
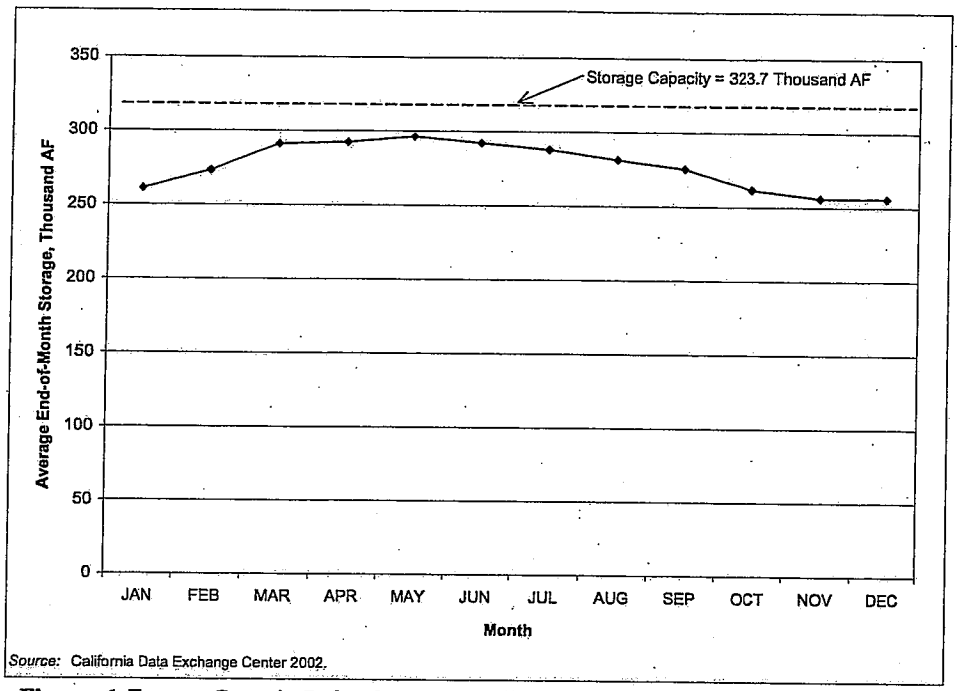


Figure 1-6. Castaic Lake Storage, 1990 to 2001



Source: California Data Exchange Center 2002.

Figure 1-7. Castaic Lake Storage, 1990 to 2001 Average End-of-Month Storage

Table 1-1. Annual SWP Deliveries from Castaic Lake by Contractor, 1990 to 2000

	CLWA	*MWD*	*VCFCD*	*Other*[1]	*Total*	*CLWA as a % of Total*
1990	22,139	764,380	0	0	786,519	2.81
1991	3,846	257,835	0	1,240	262,921	1.46
1992	14,812	420,849	0	0	435,661	3.40
1993	13,787	437,470	0	0	451,257	3.06
1994	14,919	475,900	0	0	490,819	3.04
1995	17,747	139,882	0	0	157,629	11.26
1996	18,448	267,618	0	0	286,066	6.45
1997	22,842	271,379	1,850	27,130	323,201	7.07
1998	19,782	187,277	1,850	0	208,909	9.47
1999	28,813	327,001	1,850	0	357,664	8.06
2000	33,674	632,993	1,848	0	668,515	5.04
Average	19,164	380,235	673	2,579	402,651	5.56

Source: DWR 2002.

1. Includes deliveries from Castaic Lake via exchange. These deliveries were made by the Santa Barbara County Flood Control and Water Conservation District in 1991 via exchange with VCFCD, and by the Coachella Valley Water District and Desert Water Agency in 1997 via exchange with MWD.

1.2 STATE WATER PROJECT SUPPLY CAPABILITY

As originally planned, the annual delivery capability of the SWP was to eventually reach approximately 4.2 million AF. DWR entered into individual Water Supply Contracts with public water agencies (referred to as "Contractors") for water delivery, and the sum of the maximum delivery amounts of all Contractors totaled this same 4.2 million AF. The initial SWP facilities were designed to meet Contractors' water demands in the early years of the project, with the construction of additional facilities planned as Contractor demands increased. Water deliveries to Contractors began as initial SWP facilities were completed in the late 1960s and early 1970s. CLWA received its initial delivery of SWP water in 1980. Initial deliveries of SWP water from the California Aqueduct to KCWA in the area of its member unit WRMWSD occurred in 1971 and 1972.

The original plans for the SWP were to construct additional water storage facilities as Contractor demands increased. However, essentially no additional SWP storage facilities have been constructed since the initial SWP facilities were completed. In the meantime, increasing environmental concerns related to several fish species have resulted in increasingly stringent regulatory constraints in the Delta, reducing the reliability of SWP supplies from existing facilities. This situation makes the amount of SWP supply available for delivery in any given year even more dependent on the hydrology of that particular year and the amount of water in SWP storage at the beginning of that year.

At the same time, Contractor demands have been increasing. While some Contractors are not yet requesting the maximum amounts allowable under their Water Supply Contracts, even at current demands, the SWP cannot meet all water delivery requests in some years. The availability of SWP water in any given year is dependent on that year's hydrologic conditions and the amount of water in storage in the SWP system. The amount of water actually delivered in that year is also dependent on the Contractors' requests for SWP supplies, which can vary from year to year based on Contractors' local conditions and their other supplies. The actual annual deliveries of SWP Table A supplies to Contractors are provided in Table 1-2 for 1990 to 2003. Over this period, total SWP deliveries have ranged from approximately 550,000 AF in the critical drought year of 1991 to approximately 3.7 million AF in 2003. Many Contractors did not request delivery of their full Table A Amount during this period.

In 1998, DWR estimated that annual deliveries to SWP Contractors would average approximately 3.1 million AF (based on estimates of then-existing levels of Contractor demands and land and water use upstream of the Banks Pumping Plant[1], with existing facilities operated under the constraints of Order WR 95-6 [DWR 1998]). This estimate is generally consistent with DWR's recent SWP Delivery Reliability Report (DWR 2003). In the SWP Delivery Reliability Report, DWR estimated that the SWP currently can be expected to deliver an average annual supply of approximately 2.96 million AF, based on a 2001 level of Contractor demand and upstream land and water use, with existing facilities operated under existing constraints (DWR 2003). As part of the SWP Delivery Reliability Report, DWR also estimated that in the future the

1 Land and water use upstream of the Banks Pumping Plant affects the amount of water flowing into the Delta. In general, increases in the amount of water flowing into the Delta can increase SWP supplies, while decreases in the amount of water flowing into the Delta (due to increased water use upstream or a variety of other factors) can decrease SWP supplies.

SWP can be expected to deliver an average annual supply of approximately 3.1 million AF based on 2021 level of Contractor demand and upstream consumptive use, with existing facilities operated under existing constraints (DWR 2003b). Contractor demands are expected to increase in the 2021 level evaluation as urban Contractor demands increase up to their Table A Amounts. The increase in average deliveries for 2021 is the result of the SWP being able to meet the increased Contractor demands in wetter years. However, limited SWP supplies in drier years, allocated over an increased demand for that limited supply, will result in a decrease in the reliability of dry-year supplies.

Table 1-2. SWP Annual Table A Deliveries, 1990 to 2003

	Agricultural Contract Holders		*M&I Contract Holders*		*Total Table A Deliveries (AF)*
	Table A Deliveries (AF)	*Allocation Percentage (%)*	*Table A Deliveries (AF)*	*Allocation Percentage (%)*	
1990	706,080	50	1,876,070	100	2,582,150
1991	12,440	0	536,670	30	549,110
1992	509,810	45	961,650	45	1,471,460
1993	1,250,370	100	1,064,870	100	2,315,240
1994	614,360	53	1,134,990	53	1,749,350
1995	1,165,520	100	801,570	100	1,967,090
1996	1,369,190	100	1,145,640	100	2,514,830
1997	1,067,320	100	1,258,460	100	2,325,780
1998	860,720	100	864,800	100	1,725,520
1999	1,333,590	100	1,405,300	100	2,738,890
2000	1,177,200	90	2,022,700	90	3,199,900
2001	383,840	39	1,162,900	39	1,546,740
2002	827,128	70	2,059,886	70	2,887,014
2003	1,064,267	90	2,649,966	90	3,714,230

Source: For 1990 to 2000, DWR 2002. For 2001, DWR 2004a. For 2002, DWR 2003c. For 2003, DWR 2004b.

1.3 STATE WATER PROJECT WATER SUPPLY CONTRACTS

As discussed above, in 1960 DWR began executing individual Water Supply Contracts with public agencies throughout the State of California for financing and constructing SWP facilities designed to deliver water to each public agency. The Water Supply Contracts specified Contractor obligations for repayment of SWP capital, operation, and maintenance costs, including bondholder obligations and repayment of funds loaned from the California Water Fund.

Each Water Supply Contract sets forth, in Table A, a schedule identifying an upper bound on the Contractor's annual request for delivery of SWP water, referred to as "Table A Amount" (formerly referred to as "entitlement"). The Table A Amount is specified as either agricultural or municipal and industrial (M&I). Table A in each Water Supply Contract contains an annual buildup in Table A Amounts of SWP water, from the first year of the Water Supply Contract through a specific year, based on growth projections made before the Water Supply Contract

was executed. For most Contractors, the maximum annual Table A Amount was reached in 1990. The total of all Contractors' maximum Table A Amounts is currently about 4.17 million AF.

Each Contractor annually submits a request to DWR for water delivery in the following year, in any amount up to the Contractor's Table A Amount. The Water Supply Contracts provide that in a year when DWR is unable to deliver total Contractor requests, deliveries to all Contractors will be reduced, in accordance with specified water allocation rules, so that total deliveries equal total available supply for that year. Some Contractors have never requested delivery of their full Table A Amount as a result of factors such as less-than-planned water demand, availability of other water supplies, and water conservation efforts that have held demand below initial contract projections. Other Contractors order their full Table A Amount nearly every year.

Under the original Water Supply Contracts, the Agricultural Contractors agreed in years of shortage (i.e., when SWP supplies were insufficient to meet Contractors' requests) to accept a certain amount of reduction in deliveries (the "initial agricultural reduction"), with any remaining shortage shared proportionately among the Agricultural and M&I Contractors. In exchange, the Agricultural Contractors received, among other favorable terms, a priority for "surplus" SWP supplies (i.e., SWP supplies that could be delivered in excess of Table A requests, generally available in wetter hydrologic years and/or in the early years of the SWP when demands were still low). Under the original plan for the SWP, which involved the construction of additional water storage facilities as Contractor demands increased, shortages in SWP supplies were anticipated to occur relatively infrequently and in small enough magnitudes that only Agricultural Contractors were expected to incur shortages. In the early 1990s, however, a multi-year drought coupled with increased SWP operational constraints and environmental water requirements due to the listing of several fish species as endangered or threatened, resulted in several years when SWP supplies fell below Contractors' requests for deliveries. The initial agricultural reduction provision in the Water Supply Contracts resulted in Agricultural Contractors receiving only half their requested supply in 1990 and no water in 1991, while the M&I Contractors received all of their requested supply in 1990 and less than half their requests in 1991. Because Contractors pay their proportionate share of fixed project costs regardless of how much water is delivered, plus variable costs based on the amount of water delivered, Agricultural Contractors underwent severe delivery reductions but received little financial relief from their fixed project cost obligations. This situation led to increasing disagreements between DWR, the Agricultural Contractors, and the M&I Contractors about how available supplies should be allocated.

Monterey Amendment

The SWP Contractors and DWR agreed to negotiate a settlement of their differences and develop a new approach to managing SWP resources through a major overhaul of the Water Supply Contracts. After a series of exhaustive negotiating sessions, an agreement was reached in December 1994 in Monterey, California on a set of principles, known as the "Monterey Agreement." The Monterey Agreement principles were implemented through an amendment to the Water Supply Contracts between DWR and the SWP Contractors, which became known as the "Monterey Amendment." The Monterey Amendment was approved in 1995 and went

into effect in August 1996. A summary of the provisions of the Monterey Amendment is provided below.

Allocation of SWP Water Supplies

- New method for allocation of all water supplies in proportion to each Contractor's contract amount (Table A Amounts).
- Elimination of the initial supply reduction to Agricultural Contractors in years of shortage (modification of Article 18(a) of the Water Supply Contracts).
- Replacement of certain categories of water with a single category of Article 21 water allocated on the basis of Table A Amounts and delivered at the same power rate as Table A Amounts.
- Elimination of the permanent shortage provision (Article 18(b) of the Water Supply Contracts).

Transfer of Table A Amounts and Land

- Transfer to DWR for permanent retirement 45,000 AF of agricultural Table A Amounts.
- Make 130,000 AF of agricultural Table A Amounts available for permanent sale to M&I Contractors[2].
- Transfer of the Kern Fan Element property to local control.

Water Management Provisions

- Enable voluntary water marketing, groundwater banking, and more effective use of existing SWP facilities.
- Explicitly provide for groundwater or surface storage of SWP water outside Contractor's service area for later use within its service area.
- Expand Contractor rights to store water in San Luis Reservoir when storage space is available.
- Specify Contractor rights to flexible storage in terminal reservoir facilities.
- Clarify terms for transport of non-SWP water in SWP facilities for Contractors.
- Create a Turnback Pool for the annual sale to interested Contractors of SWP supplies allocated to other Contractors but unneeded by them.

Financial Restructuring

- Use SWP funds to establish an SWP operating reserve.

2 The 41,000 AF transfer associated with the Project represents a portion of the 130,000 AF transfer that the Agricultural Contractors agreed to make available for permanent transfer in the Monterey Amendment.

- Establish a program of water rate management which, when SWP cash flow permits, provides for a credit in charges to M&I Contractors, as well as Agricultural Contractor trust funds for rte management.

A Program EIR analyzing the environmental impacts of the Monterey Amendment was prepared and certified by the Central Coast Water Authority (CCWA) in 1995. In late 1995, a lawsuit was filed by the Planning and Conservation League (PCL), Plumas County Water Conservation and Flood Control District (Plumas County), and Citizens Planning Association of Santa Barbara County (collectively referred to as the "plaintiffs") challenging the EIR. The plaintiffs argued that the environmental impact analysis prepared was inadequate because CCWA was not the proper lead agency and the EIR analysis did not reflect the inability of the SWP to deliver full Contract amounts to Contractors, even though they held contractual "entitlements" to those supplies. In 2000, the California State Court of Appeal (Third District) found that a new EIR must be prepared. That litigation is referred to as the PCL Litigation in this EIR.[3]

Discussions to mediate a settlement began in 2001 and were finalized in May 2003[4]. All parties to the litigation have signed the Settlement Agreement. The Settlement Agreement calls for DWR to prepare a new EIR pursuant to the California Environmental Quality Act (a Notice of Preparation [NOP] was issued by DWR on January 24, 2003),[5] while the Monterey Amendment's provisions remain in operation. Pursuant to the Settlement Agreement, the parties are now administering the preparation of a new EIR, which is anticipated to be completed in approximately two years. The new EIR will evaluate the potential environmental impacts of changes to SWP operations incorporated in the Monterey Amendment and the Settlement Agreement. The Settlement Agreement also calls for DWR to produce a biennial SWP Delivery Reliability Report. The *State Water Project Delivery Reliability Report - 2002* was issued in May 2003 (DWR 2003). A summary of the Settlement Agreement is provided below. The Settlement Agreement did not change the substance of the Monterey Amendment, but addressed the process by which the new Monterey Amendment EIR will be prepared.

Settlement Agreement

- Continue operation under Monterey Amendment provisions.
- Establish a watershed forum for Plumas County to pursue watershed restoration and provide for amending Plumas County's Water Supply Contract regarding shortages.
- Impose additional restrictions on use of the Kern Water Bank lands.
- Amend and clarify SWP Water Supply Contracts to substitute in certain instances "Table A Amount" for "entitlement."
- Implement new procedures for disclosure of SWP delivery capabilities.

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3 *Planning and Conservation League, et al. v. Department of Water Resources* (2000) 83 Cal. App. 4th 892.

4 In May 2003, the settlement agreement among the plaintiffs, DWR, and the SWP Contractors (referred to herein as the "Settlement Agreement") was executed and approved by the State Attorney General's office. On May 20, 2003 the Settlement Agreement was approved by the Sacramento Superior Court.

5 The NOP is entitled *Notice of Preparation of Environmental Impact Report for the Monterey Amendment to the State Water Project Contracts (Including Kern Water Bank Transfer) and Other Contract Amendments and Associated Actions as part of a Proposed Settlement Agreement in Planning and Conservation League v. Department of Water Resources.*

- Issue guidelines on permanent Table A Amount transfers.
- Establish procedures for public participation in certain Water Supply Contract amendment negotiations.
- Provide certain funding to the plaintiffs for multiple purposes, including watershed restoration.

Monterey Amendment Effect on Water Deliveries

The Monterey Amendment did not change of the total amount of SWP supply available for delivery in any year. It did, however, change how that available supply is allocated among the Contractors. Under the allocation methodology used prior to the Monterey Amendment, in a year when total available SWP supplies were less than Contractor requests, Agricultural Contractors received an initial supply reduction of up to 50 percent in any one year and up to a cumulative total of 100 percent in any seven consecutive years. Any shortages remaining in the year after the initial agricultural reduction were shared among all Contractors proportionately. The result of this allocation provision was that, due to the initial agricultural reductions, agricultural Table A Amounts were less reliable than M&I Table A Amounts.

Under the provisions of the Monterey Amendment, all SWP supplies are allocated among Contractors in proportion to their Table A Amounts. The result of this change in allocation is that the reliability of all SWP Table A Amounts is now the same. This means that in a shortage year, with the elimination of the initial agricultural reduction, a portion of the supply that would previously have been allocated to M&I Contractors would now be allocated to Agricultural Contractors; and when additional SWP supplies are available, with the elimination of the agricultural priority to surplus water, a portion of the supply that might previously have been delivered to Agricultural Contractors would now be available to M&I Contractors.

Transfers of Table A Amounts

SWP Table A Amounts could be transferred under the original terms of the Water Supply Contracts (under Article 41). The Monterey Amendment provided an additional opportunity for transfers of Table A Amounts (under Article 53). Under the Monterey Amendment, the Agricultural Contractors agreed to make available up to 130,000 AF of Table A Amount for permanent sale and transfer to M&I Contractors. Transfers of more than half of this 130,000 AF of Table A Amount have already been completed by various M&I Contractors. The transfer evaluated in this EIR (the Project) could be completed under either of these Water Supply Contract provisions, although Article 53 was the vehicle utilized to execute the transfer.

2.0 DWR MODEL STUDIES

2.1 MODEL STUDIES SELECTED FOR USE

The amount of SWP water supply that would be available for use by CLWA given the transfer of the Project's 41,000 AF of Table A Amount was evaluated using results from DWR model studies of SWP and CVP operations. The model studies that were used in analyses for this EIR were studies previously conducted by DWR (i.e., no new model studies were run for this EIR). Results from these DWR model studies were used as a starting point for the water resources analyses conducted for this EIR.

The model studies used in this analysis were two studies conducted by DWR for the CALFED Bay-Delta Program EIS/EIR (CALFED 2000). These model studies were conducted in 1998 using DWR's planning model DWRSIM. These model studies provide the best estimates of SWP supply reliability that were available in 1998, and are consistent with the pre-project 1998 environmental baseline used in this EIR. Therefore, these model studies were used as the basis for the water resources environmental impact analyses conducted for this EIR.

DWRSIM is a monthly planning model that simulates operations of the SWP and CVP. One of the model's inputs is a time series of monthly runoff based on historic hydrologic data from 1922 through 1994 (73 years), with that hydrologic data adjusted to reflect a current or future level of upstream land and water use. DWRSIM estimates the amount of water the SWP could deliver to Contractors in each month over the 73 years of operation, for a given set of facilities and operating constraints and for a given level of Contractor demand. The results are interpreted as the capability of the SWP to meet the assumed SWP demand, over a range of hydrologic conditions, for that assumed set of physical facilities and operating constraints.

The two DWRSIM studies used in this EIR both assume the use of SWP facilities and operating constraints that were present in 1998. One study uses 1998 estimates of then-existing Contractor demands and upstream land and water use, and the other uses projections for 2020 of both Contractor demands and upstream land and water use (DWRSIM model studies 1995D06E-CALFED-771 and 2020D09C-CALFED-786, respectively)[6].

2.2 COMPARISON OF DWRSIM TO CALSIM II

Since these studies were conducted, the modeling tool DWR uses to simulate operations has evolved (first to CALSIM I, and more recently to CALSIM II). However, while the modeling tool itself has changed, the criteria used in the models to simulate SWP operations have not significantly changed. While DWR has completed a more recent assessment of SWP reliability in its SWP Delivery Reliability Report (DWR 2003) using CALSIM II, the results of these new studies are generally comparable to the results of the DWRSIM studies used in this EIR. The results of these new studies were used as the basis for determining CLWA SWP supplies for the current environmental setting, as is described below in section 6.0.

6 In the CALFED Bay-Delta Program EIS/EIR, these two studies represent the Existing Condition, and the No Action Alternative with a 2020 level of Contractor demand, respectively.

Figures 2-1 and 2-2 show a comparison of DWRSIM and CALSIM II model study results of total SWP Table A deliveries. Figure 2-1 shows this comparison at "existing" demand conditions, while Figure 2-2 shows this same comparison at 2020 demand conditions. In these figures, deliveries over the hydrologic period are shown in the form of probability of exceedance curves (see the sidebar for an explanation of how to interpret this kind of graph).

> ***Interpreting Probability of Exceedance Graphs***
>
> The graphs of supplies available over DWRSIM's entire hydrologic record are presented as probability of exceedance curves. These curves show the probability of supplies being greater than or equal to specific quantities. For example, Figure 2-1 would be interpreted, based on the DWRSIM run, as showing that about 80 percent of the time, total SWP supplies would be expected to be 2,500 or more thousand AF; and about 20 percent of the time, supplies would be expected to be less than 2,500 thousand AF.

The "existing" demand in the DWRSIM study used in this EIR is based on 1998 DWR estimates of then-existing SWP demands, while the "existing" demand in the CALSIM II study in DWR's SWP Delivery Reliability Report is based on 2001 estimates of then-existing SWP demands. The 2001 total SWP demand is higher than the 1998 total SWP demand due to increased M&I Contractor demands. Since the models only deliver supplies up to Contractor demands, the deliveries shown in the wetter years, when adequate supply is usually available, are limited by demands. Therefore, the DWRSIM study shows lower deliveries than the CALSIM II study in the wetter years (see Figure 2-1), not because supplies are not available, but because the lower demands in the DWRSIM study limit deliveries. The lower demand can also result in more water being delivered in some dry years, if more water was left in storage at the end of the year preceding the dry year. This explains a portion of the higher DWRSIM deliveries shown on Figure 2-1 in drier years. Any differences in SWP deliveries due to factors other than demands can be seen on Figure 2-2, since the demands used in the 2020 level DWRSIM study and 2021 level CALSIM II study are the same. Other differences in SWP deliveries between the two model studies could result from factors such as changes in assumptions for regulatory standards and operating criteria, and differences in certain algorithms used in the models.

2.3 MODEL ASSUMPTIONS

In order to simulate operation of the SWP and CVP with DWRSIM, certain information and assumptions are required as model input. The most significant categories of input affecting the model results used in the analyses for this EIR include:

- Water system facilities and their physical characteristics.
- Regulatory, operational, and institutional requirements and constraints.
- Hydrology (as adjusted for upstream land and water use).
- Level of SWP demand.

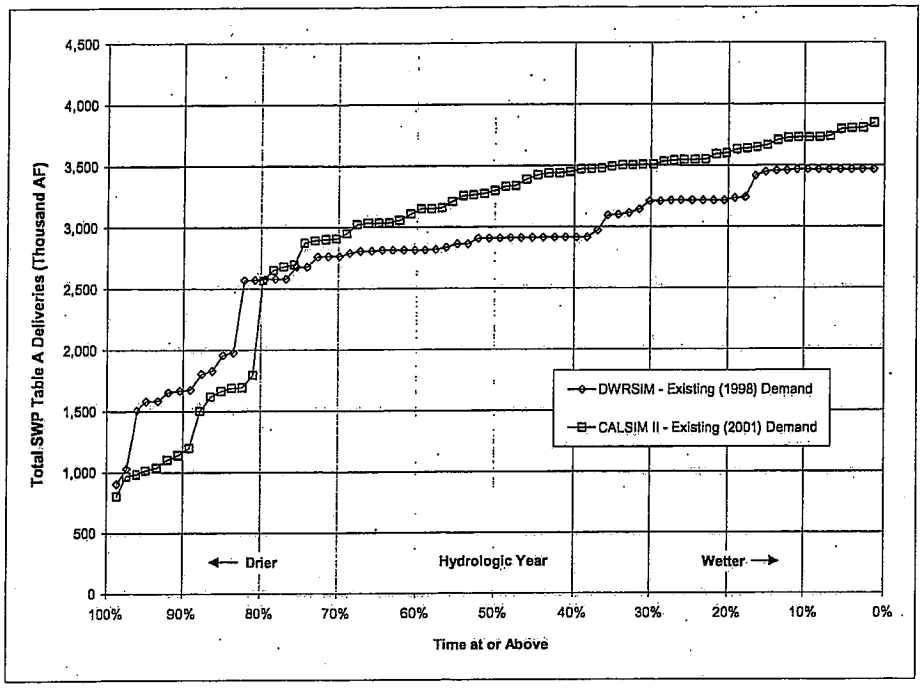


Figure 2-1. Total SWP Table A Deliveries at Existing SWP Demand Conditions

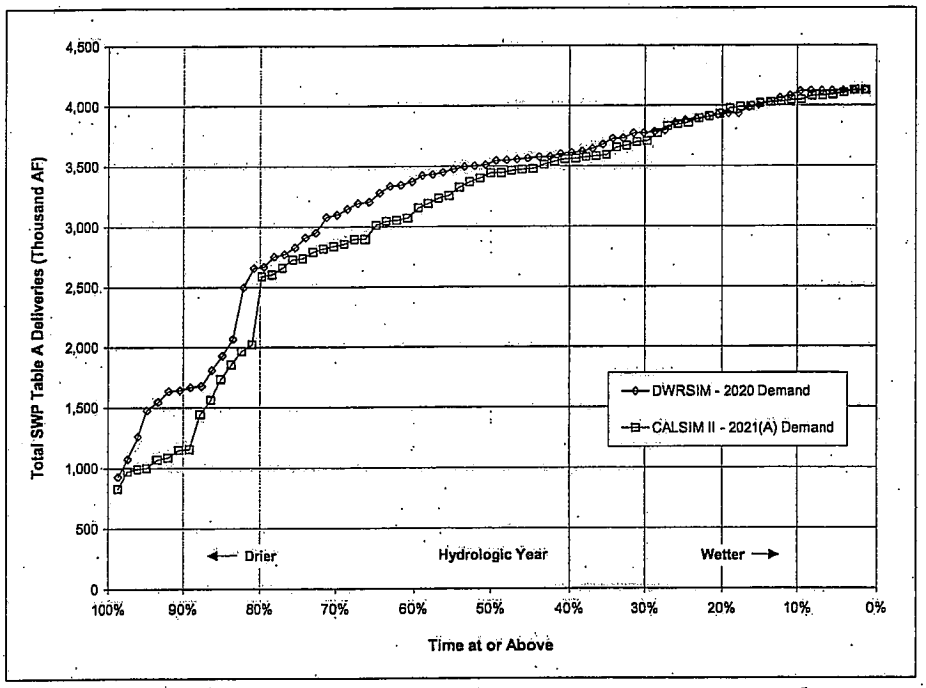


Figure 2-2. Total SWP Table A Deliveries at 2020 SWP Demand Conditions

In the two DWRSIM model studies used in this EIR analysis, the assumptions for the first two of these categories of input are the same. The hydrology and level of SWP demand, however, differ between the two studies. A summary of key model assumptions used in these two model runs, including both study-specific assumptions and common assumptions, is provided in Table 2-1.

The SWP demands used as input to these two DWRSIM model studies are particularly important for the water supply analyses conducted for this EIR. These demands, along with Contractor Table A Amounts, are used in allocating total available SWP supplies among Contractors, and ultimately in determining how much of that available SWP supply is associated with the 41,000 AF of the Project, as is described in more detail in section 3.1 below.

Both of these DWRSIM studies use a demand that varies from year to year during the 73-year study period, based on local wetness indices. The purpose of this variable demand is to account for the real situation where a Contractor's demand changes from one year to the next due to how wet or dry it is in its service area, with higher demand in drier years and lower demand in wetter years. For the demands used in these studies, Agricultural Contractor demands are reduced in wetter years using a Kern River flow index, and MWD demands are reduced in wetter years using a southern California precipitation index. The demands of the other M&I Contractors are not adjusted for wetness and are fixed at maximum Table A Amounts in all years of the study. The specific SWP demands used as input to these studies are provided in section 2.4.

Table 2-1. Key DWRSIM Study Assumptions

	Existing Conditions (1995D06E-CALFED-771)	*2020 Conditions (2020D09C-CALFED-786)*
Study-Specific Assumptions		
Hydrology	1995 Level hydrology (based on DWR Bulletin 160-98 land use projections)	2020 Level hydrology (based on DWR Bulletin 160-98 land use projections)
SWP Demand (includes south of Delta and North Bay Aqueduct)	2.6 – 3.5 million AF/year (varies based on local wetness indices)	3.3 – 4.1 million AF/year (varies based on local wetness indices)
Common Assumptions		
SWP Facilities	Existing	
Delta Regulatory Standards	1995 Delta Water Quality Control Plan standards, with select Anadromous Fish Restoration Plan (AFRP) CVPIA(b)(2) Delta Actions (from Actions in Nov 20, 1997 AFRP Document)	
Operations Criteria	Banks Pumping Plant export limit at 6,680 cfs with certain exemptions	
	SWP operation coordinated with CVP per 1986 Coordinated Operations Agreement	

Source: DWR 1999, CALFED 2000.

2.4 SELECTED MODEL INPUT AND OUTPUT

Certain input to the two DWRSIM studies and certain results (or output) from the model studies were used as a starting point for the analyses conducted for this EIR. The model input used in the EIR analyses was annual SWP Contractor demands, with demands for each year of the model study, aggregated for the following three broad Contractor groups: Agricultural Contractors, MWD, and Other M&I Contractors (i.e., all M&I Contractors except MWD). The model output used in the EIR analyses includes total annual SWP deliveries, output related to San Luis Reservoir operations (i.e., reservoir storage, diversions to and releases from storage, and aqueduct flows upstream and downstream of the reservoir), and Castaic Lake storage.

The DWRSIM model operates on a water year (October through September) basis, starting with hydrology from October 1921 and running for 73 water years, through September 1994. However, the water supply analyses for this EIR had to be conducted on a calendar year basis, since SWP supplies are allocated, both in real practice and within the model, based on calendar years. Therefore, any monthly DWRSIM data used was arranged based on calendar years and any annual totals used were calendar-year totals. Since the first and last calendar years of the model run (1921 and 1994) contain only three and nine months of data, respectively, the annual totals for these years are not meaningful. As a result, any analyses that started with annual totals, such as the water supply analysis, excluded data for the partial years of 1921 and 1994.

Specific data used from the DWRSIM model studies are shown on Figures 2-3 to 2-6, and Tables 2-2 to 2-7. Figure 2-3 shows a probability of exceedance graph of total SWP Table A deliveries over the entire hydrologic period, for existing and 2020 demand conditions. Tables 2-2 and 2-3 provide the DWRSIM input of annual demands for the three Contractor groups and the DWRSIM output of total annual SWP deliveries, for each year over the hydrologic period, for the existing conditions study and 2020 conditions study, respectively.

To more clearly show the impact of the demands used as input in these model studies on the model's output, the total SWP Table A deliveries shown on Figure 2-3 are shown again on Figure 2-4, presented both as a percent of total Contractor demand and as a percent of total Table A Amounts. The differences in potential interpretation are particularly apparent for the existing conditions study, which used a lower total SWP demand as input. As was discussed previously, since DWRSIM deliveries are limited to demand, in the existing conditions study the lower deliveries in the wetter years occur not because supplies are not available, but because the lower demand limits deliveries. At the existing demand level, model results indicate that the SWP could meet full Contractor demands about two thirds of the time. Note that for this same study, because the maximum total demand is less than total Table A Amounts, these same deliveries presented as a percent of Table A Amount never exceed about 86 percent (i.e., it appears Contractors would never receive a 100 percent SWP supply allocation, giving the appearance that Contractor demands are never fully met). This interpretation is clearly a mischaracterization of the model results, and highlights the importance of considering the demands used in these studies in interpreting study results. For the 2020 conditions study, since total Contractor demands in many years are equal to total Table A Amounts, the output supplies shown in the graph as a percent of demand begin to converge with those same supplies shown as a percent of Table A Amount.

Figure 2-5 shows a graph of average monthly storage at San Luis Reservoir, with the monthly data for the hydrologic period provided in Tables 2-4 and 2-5, for existing and 2020 demand conditions, respectively.

Figure 2-6 shows a graph of average monthly storage at Castaic Lake, with the monthly data for the hydrologic period provided in Tables 2-6 and 2-7, for existing and 2020 demand conditions, respectively. It should be noted that DWRSIM only models operation of Castaic Lake in meeting Contractor deliveries, and does not model Contractor use of flexible storage. Since Contractors can use flexible storage for any number of reasons, including for their own operations unrelated to the SWP, use of flexible storage cannot effectively be modeled. Therefore, the DWRSIM output shown reflects only normal Castaic Lake operations to meet Contractor deliveries.

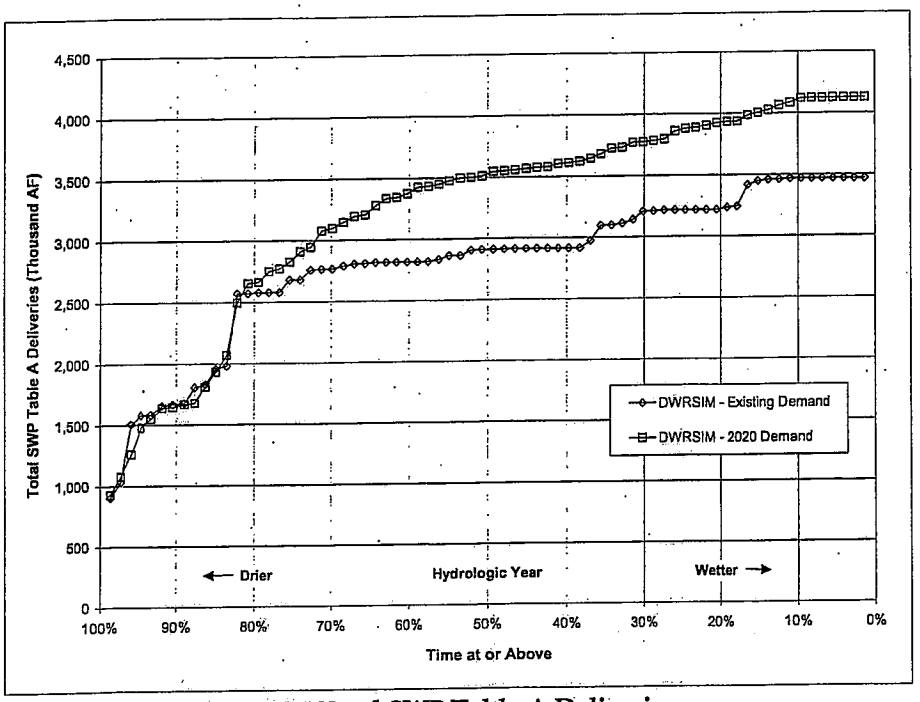


Figure 2-3. DWRSIM Total SWP Table A Deliveries

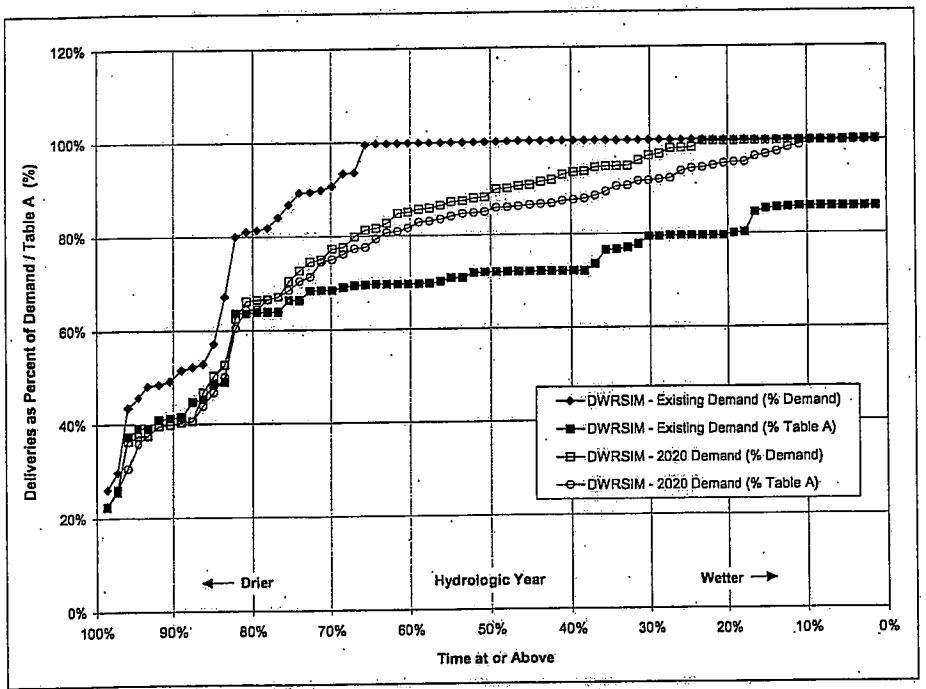


Figure 2-4. DWRSIM Total SWP Table A Deliveries, as Percent of Demand and Percent of Table A Amount

Table 2-2. DWRSIM SWP Demand Input and Delivery Output at Existing SWP Demand Conditions

(DWRSIM study 1995D06E-CALFED-771; Calendar year data, in thousands of AF)

Hydrologic Year	DWRSIM INPUT: DEMANDS				DWRSIM OUTPUT
	Ag Contractrs	MWD	Other M&I Contractrs	Total SWP Demand	Total SWP Delivery
Table A Amount	1175.4	2011.5	856.8	4043.7	N/A
1922	1175.4	883.0	856.8	2915.2	2913.2
1923	1175.4	1183.0	856.8	3215.2	3215.4
1924	1175.4	1433.0	856.8	3465.2	1979.4
1925	1175.4	1433.0	856.8	3465.2	1806.3
1926	1175.4	1183.0	856.8	3215.2	2789.3
1927	1175.4	883.0	856.8	2915.2	2910.2
1928	1175.4	1183.0	856.8	3215.2	3215.4
1929	1175.4	1433.0	856.8	3465.2	1829.2
1930	1175.4	1433.0	856.8	3465.2	2808.4
1931	1175.4	1433.0	856.8	3465.2	1583.6
1932	1175.4	883.0	856.8	2915.2	1958.0
1933	1175.4	1183.0	856.8	3215.2	1654.9
1934	1175.4	1433.0	856.8	3465.2	1676.9
1935	1175.4	883.0	856.8	2915.2	2907.2
1936	1175.4	883.0	856.8	2915.2	2908.0
1937	1125.0	783.0	856.8	2764.8	2760.6
1938	1125.0	783.0	856.8	2764.8	2764.7
1939	1175.4	783.0	856.8	2815.2	2815.1
1940	1175.4	1183.0	856.8	3215.2	3208.7
1941	940.0	783.0	856.8	2579.8	2579.8
1942	1175.4	783.0	856.8	2815.2	2815.1
1943	1125.0	883.0	856.8	2864.8	2864.8
1944	1175.4	783.0	856.8	2815.2	2815.1
1945	1175.4	883.0	856.8	2915.2	2912.0
1946	1175.4	1183.0	856.8	3215.2	3215.4
1947	1175.4	1433.0	856.8	3465.2	3458.8
1948	1175.4	1433.0	856.8	3465.2	3141.6
1949	1175.4	1433.0	856.8	3465.2	2817.8
1950	1175.4	1433.0	856.8	3465.2	3098.6
1951	1175.4	1433.0	856.8	3465.2	3465.4
1952	940.0	883.0	856.8	2679.8	2679.7
1953	1175.4	883.0	856.8	2915.2	2915.2
1954	1175.4	1433.0	856.8	3465.2	3465.4
1955	1175.4	1183.0	856.8	3215.2	2570.5
1956	1175.4	1433.0	856.8	3465.2	3464.5
1957	1175.4	1433.0	856.8	3465.2	3465.4
1958	1125.0	883.0	856.8	2864.8	2864.8
1959	1175.4	883.0	856.8	2915.2	2915.2
1960	1175.4	1433.0	856.8	3465.2	3113.4
1961	1175.4	1433.0	856.8	3465.2	2834.7
1962	1175.4	1433.0	856.8	3465.2	3456.7
1963	1175.4	1183.0	856.8	3215.2	3215.4
1964	1175.4	1433.0	856.8	3465.2	3465.4
1965	1175.4	1433.0	856.8	3465.2	3234.8
1966	1175.4	1183.0	856.8	3215.2	3215.4
1967	1125.0	783.0	856.8	2764.8	2764.7
1968	1175.4	883.0	856.8	2915.2	2915.2
1969	940.0	883.0	856.8	2679.8	2679.7
1970	1175.4	883.0	856.8	2915.2	2915.2
1971	1175.4	1433.0	856.8	3465.2	3465.4
1972	1175.4	1433.0	856.8	3465.2	3447.4
1973	1175.4	1183.0	856.8	3215.2	3209.4
1974	1175.4	1183.0	856.8	3215.2	3215.4
1975	1175.4	1433.0	856.8	3465.2	3465.4
1976	1175.4	1433.0	856.8	3465.2	3242.6
1977	1175.4	1433.0	856.8	3465.2	904.4
1978	940.0	783.0	856.8	2579.8	2571.1
1979	1175.4	783.0	856.8	2815.2	2815.1
1980	940.0	783.0	856.8	2579.8	2579.8
1981	1175.4	883.0	856.8	2915.2	2915.2
1982	1125.0	1433.0	856.8	3414.8	3415.1
1983	940.0	783.0	856.8	2579.8	2579.8
1984	1175.4	783.0	856.8	2815.2	2815.1
1985	1175.4	1433.0	856.8	3465.2	3465.4
1986	940.0	1183.0	856.8	2979.8	2972.8
1987	1175.4	1433.0	856.8	3465.2	3095.0
1988	1175.4	1433.0	856.8	3465.2	1507.9
1989	1175.4	1433.0	856.8	3465.2	2912.7
1990	1175.4	1433.0	856.8	3465.2	1667.3
1991	1175.4	1433.0	856.8	3465.2	1031.8
1992	1175.4	1183.0	856.8	3215.2	1581.8
1993	1175.4	783.0	856.8	2815.2	2805.6
AVG	1148.3	1155.9	856.8	3161.0	2787.8
MIN	940.0	783.0	856.8	2579.8	904.4
MAX	1175.4	1433.0	856.8	3465.2	3465.4

Table 2-3. DWRSIM SWP Demand Input and Delivery Output at 2020 SWP Demand Conditions

(DWRSIM study 2020D09C-CALFED-786; Calendar year data, in thousands of AF)

Hydrologic Year	DWRSIM INPUT: DEMANDS				DWRSIM OUTPUT
	Ag Contractrs	MWD	Other M&I Contractrs	Total SWP Demand	Total SWP Delivery
Table A Amount	1175.5	2011.5	946.1	4133.1	N/A
1922	1175.5	2011.5	946.0	4133.0	4123.4
1923	1175.5	2011.5	946.0	4133.0	4119.4
1924	1175.5	1358.0	946.0	3479.5	1262.6
1925	1175.5	2011.5	946.0	4133.0	1930.4
1926	1175.5	2011.5	946.0	4133.0	2749.1
1927	1175.5	2011.5	946.0	4133.0	4122.6
1928	1175.5	2011.5	946.0	4133.0	3372.7
1929	1175.5	1322.0	946.0	3443.5	1810.2
1930	1175.5	2011.5	946.0	4133.0	2769.9
1931	1175.5	2011.5	946.0	4133.0	1645.0
1932	1175.5	1994.0	946.0	4115.5	2068.0
1933	1175.5	2011.5	946.0	4133.0	1668.5
1934	1175.5	2011.5	946.0	4133.0	1678.3
1935	1175.5	1785.0	946.0	3906.5	3578.4
1936	1175.5	2011.5	946.0	4133.0	3601.9
1937	1175.5	2011.5	946.0	4133.0	3192.7
1938	1175.5	2011.5	946.0	4133.0	4123.2
1939	1175.5	1826.0	946.0	3947.5	3549.4
1940	1175.5	2011.5	946.0	4133.0	3904.3
1941	940.0	1595.0	946.0	3481.0	3474.0
1942	1175.5	1759.0	946.0	3880.5	3880.3
1943	1175.5	1998.0	946.0	4119.5	3621.0
1944	1175.5	1589.0	946.0	3710.5	3645.3
1945	1175.5	1826.0	946.0	3947.5	3727.1
1946	1175.5	1847.0	946.0	3968.5	3679.3
1947	1175.5	1821.0	946.0	3942.5	3146.7
1948	1175.5	2011.5	946.0	4133.0	3077.6
1949	1175.5	1874.0	946.0	3995.5	2655.4
1950	1175.5	2011.5	946.0	4133.0	3098.0
1951	1175.5	1972.0	946.0	4093.5	3858.4
1952	940.0	1624.0	946.0	3510.0	3509.7
1953	1175.5	1941.0	946.0	4062.5	3794.5
1954	1175.5	2011.5	946.0	4133.0	3772.4
1955	1175.5	1873.0	946.0	3994.5	2494.8
1956	1175.5	2011.5	946.0	4133.0	4121.3
1957	1175.5	1907.0	946.0	4028.5	3448.7
1958	1175.5	1820.0	946.0	3941.5	3935.0
1959	1175.5	2011.5	946.0	4133.0	3609.7
1960	1175.5	1908.0	946.0	4029.5	2665.5
1961	1175.5	1772.0	946.0	3893.5	2826.7
1962	1175.5	1811.0	946.0	3932.5	3555.5
1963	1175.5	2011.5	946.0	4133.0	4064.8
1964	1175.5	1908.0	946.0	4029.5	3423.6
1965	1175.5	1844.0	946.0	3965.5	3278.7
1966	1175.5	1924.0	946.0	4045.5	3924.4
1967	1175.5	1911.0	946.0	4032.5	4025.4
1968	1175.5	2006.0	946.0	4127.5	3565.7
1969	940.0	1697.0	946.0	3583.0	3574.9
1970	1175.5	1882.0	946.0	4003.5	3783.6
1971	1175.5	2011.5	946.0	4133.0	4124.3
1972	1175.5	2011.5	946.0	4133.0	3204.3
1973	1175.5	1997.0	946.0	4118.5	3731.2
1974	1175.5	1968.0	946.0	4089.5	4083.3
1975	1175.5	1991.0	946.0	4112.5	3933.9
1976	1175.5	1594.0	946.0	3715.5	3334.8
1977	1175.5	2011.5	946.0	4133.0	929.2
1978	940.0	2011.5	946.0	3897.5	3887.8
1979	1175.5	2011.5	946.0	4133.0	3545.4
1980	940.0	1865.0	946.0	3751.0	3496.9
1981	1175.5	2011.5	946.0	4133.0	3502.5
1982	1175.5	1887.0	946.0	4008.5	4002.4
1983	940.0	1457.0	946.0	3343.0	3342.7
1984	1175.5	1939.0	946.0	4060.5	3984.4
1985	1175.5	1783.0	946.0	3904.5	3772.6
1986	940.0	2011.5	946.0	3897.5	3431.7
1987	1175.5	1507.0	946.0	3628.5	2947.5
1988	1175.5	1821.0	946.0	3942.5	1479.1
1989	1175.5	2011.5	946.0	4133.0	2908.5
1990	1175.5	2011.5	946.0	4133.0	1636.3
1991	1175.5	2011.5	946.0	4133.0	1075.9
1992	1175.5	2011.5	946.0	4133.0	1548.6
1993	1175.5	2011.5	946.0	4133.0	4121.3
AVG	1152.6	1896.8	946.0	3995.4	3229.6
MIN	940.0	1322.0	946.0	3343.0	929.2
MAX	1175.5	2011.5	946.0	4133.0	4124.3

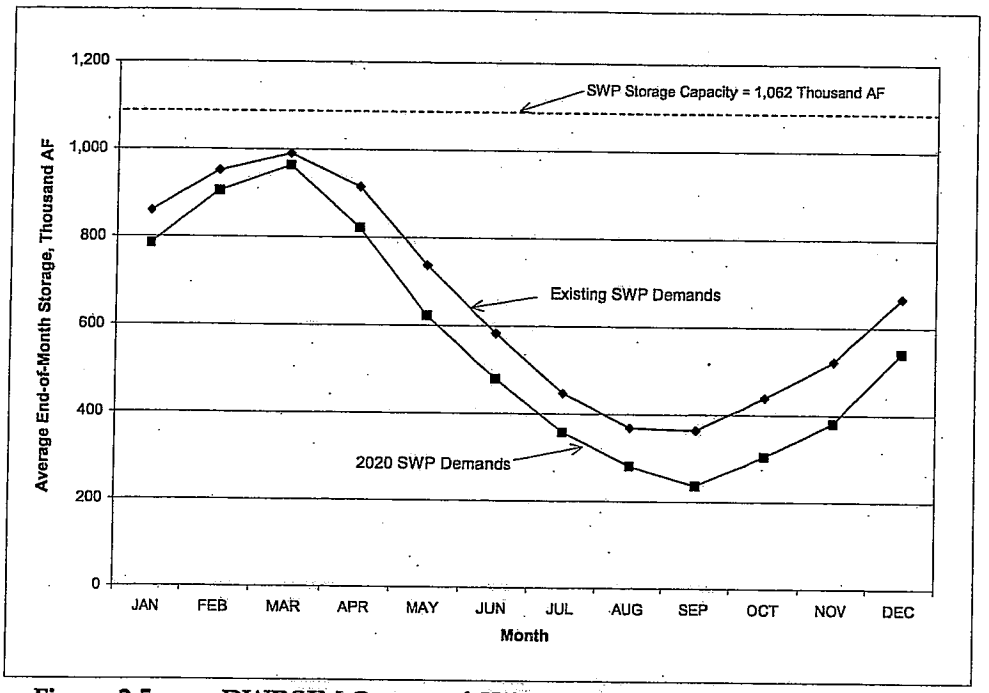


Figure 2-5. DWRSIM Output of SWP San Luis Reservoir Storage, Average End-of-Month Storage

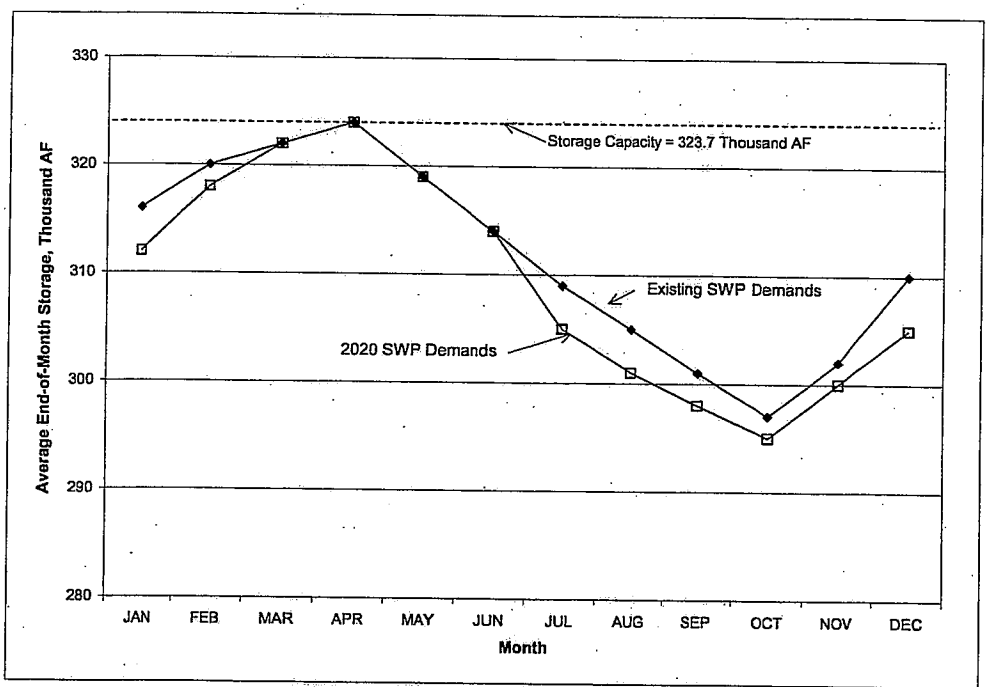


Figure 2-6. DWRSIM Output of Castaic Lake Storage, Average End-of-Month Storage

Table 2-4. DWRSIM Output of SWP San Luis Reservoir Storage at Existing SWP Demand Conditions

(DWRSIM study 1995D06E-CALFED-771)

(End-of-Month Storage, in thousands of AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1921	—	—	—	—	—	—	—	—	—	225	247	491
1922	818	1067	1067	1017	847	850	594	517	549	783	996	1067
1923	1067	1067	1067	1004	805	599	571	326	332	344	344	500
1924	806	948	948	851	755	602	410	162	42	42	77	270
1925	376	715	715	716	613	380	155	42	93	117	117	300
1926	660	954	963	890	668	449	226	253	66	127	328	573
1927	900	1067	1067	1016	839	669	597	402	441	675	886	1067
1928	1067	1067	1067	1009	794	557	424	326	187	187	307	504
1929	829	1009	1009	929	766	537	298	69	42	42	42	337
1930	691	796	1060	927	705	489	269	305	162	162	140	371
1931	625	625	625	568	415	215	42	42	42	42	42	371
1932	773	952	952	898	787	617	414	183	88	88	88	88
1933	399	494	667	667	555	341	119	42	42	42	42	293
1934	651	730	730	684	520	308	88	42	42	42	157	230
1935	632	722	1012	970	815	671	625	316	231	301	295	295
1936	675	1003	1067	1031	857	684	611	305	335	335	315	480
1937	838	1067	1067	1051	900	832	581	287	298	445	663	961
1938	1067	1067	1067	1067	975	1027	1016	1052	1067	1067	1067	1067
1939	1067	1067	1067	954	754	552	350	286	85	85	52	52
1940	477	818	1066	997	793	563	517	341	307	324	424	672
1941	1046	1067	1067	1042	936	1021	829	896	1048	1067	1067	1067
1942	1067	1067	1067	1048	921	935	769	797	928	1067	1067	1067
1943	1067	1067	1067	1021	874	716	585	442	498	691	802	1022
1944	1067	1067	1067	966	788	621	574	286	132	132	354	618
1945	918	1067	1067	972	762	615	590	296	231	382	594	888
1946	1067	1067	1067	954	751	565	537	326	284	288	422	665
1947	943	1067	1067	898	612	313	42	42	42	42	42	42
1948	402	402	526	518	283	86	42	42	42	94	141	333
1949	616	706	997	865	646	493	511	307	249	249	249	249
1950	619	920	1049	925	678	489	458	340	379	468	647	910
1951	1067	1067	1067	944	728	476	374	335	370	474	644	873
1952	1067	1067	1067	1067	986	1060	1067	1067	1067	1067	1067	1067
1953	1067	1067	1067	979	819	740	591	609	731	965	1067	1067
1954	1067	1067	1067	980	743	481	386	347	297	390	560	774
1955	1067	1067	1067	955	772	651	523	267	225	225	302	602
1956	952	1067	1067	962	741	675	620	580	646	832	910	1067
1957	1067	1067	1067	954	720	497	442	351	370	557	726	942
1958	1067	1067	1067	1021	856	898	911	936	1061	1067	1067	1067
1959	1067	1067	1067	925	708	478	240	261	261	261	249	451
1960	754	1050	1067	912	658	402	148	134	50	132	272	485
1961	819	1067	1067	936	717	503	280	307	184	184	184	414
1962	595	980	1067	901	626	354	212	141	69	240	391	585
1963	872	1067	1067	1021	857	675	641	614	703	888	1067	1067
1964	1067	1067	1067	872	598	308	42	42	42	42	175	406
1965	768	1038	1067	1022	848	632	610	604	664	798	980	1067
1966	1067	1067	1067	928	704	445	196	186	109	109	299	588
1967	925	1067	1067	1052	960	1012	1035	1067	1067	1067	1067	1067
1968	1067	1067	1067	961	760	527	289	296	231	319	506	763
1969	1067	1067	1067	1067	967	1056	1067	1067	1067	1067	1067	1067
1970	1067	1067	1067	984	808	592	428	296	277	381	594	856
1971	1067	1067	1067	964	760	589	533	494	561	747	878	1067
1972	1067	1067	1067	897	635	362	109	75	42	130	297	504
1973	822	1067	1067	1000	807	699	643	449	539	746	933	1067
1974	1067	1067	1067	997	799	699	671	657	749	957	1067	1067
1975	1067	1067	1067	1004	817	762	678	638	704	890	1059	1067
1976	1067	1067	1067	902	647	411	220	217	61	144	124	124
1977	196	196	196	188	118	42	42	42	58	42	61	329
1978	738	1067	1067	1067	1023	952	633	603	750	995	1067	1067
1979	1067	1067	1067	1016	850	746	579	286	309	495	716	981
1980	1067	1067	1067	1067	945	845	606	674	827	1067	1067	1067
1981	1067	1067	1067	978	776	548	317	296	198	252	465	720
1982	1067	1067	1067	991	779	734	687	655	726	913	1067	1067
1983	1067	1067	1067	1067	1055	1067	1067	1067	1067	1067	1067	1067
1984	1067	1067	1067	975	780	628	575	441	548	731	952	1067
1985	1067	1067	1067	905	637	350	53	42	42	46	90	299
1986	653	987	1067	1017	813	650	615	316	421	605	605	825
1987	1067	1067	1067	925	682	459	241	253	72	72	42	196
1988	548	548	548	494	354	204	42	42	42	42	127	239
1989	495	495	831	733	490	236	42	42	42	42	42	141
1990	456	484	526	478	373	209	42	42	42	42	42	42
1991	64	42	396	416	362	231	94	42	42	42	42	50
1992	245	583	894	847	695	517	323	118	42	42	42	345
1993	782	1065	1067	1032	884	893	588	611	693	932	1052	1067
1994	1067	1067	1067	917	698	491	278	286	237	—	—	—
AVG:	859	951	990	915	737	583	447	369	364	439	522	666
MIN:	64	42	196	188	118	42	42	42	42	42	42	42
MAX:	1067	1067	1067	1067	1055	1067	1067	1067	1067	1067	1067	1067

Table 2-5. DWRSIM Output of SWP San Luis Reservoir Storage at 2020SWP Demand Conditions

(DWRSIM study 2020D09C-CALFED-786)
(End-of-Month Storage, in thousands of AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1921	—	—	—	—	—	—	—	—	—	270	257	430
1922	723	983	1067	877	611	546	465	398	271	366	479	658
1923	923	908	823	658	405	176	97	42	42	94	42	156
1924	475	687	687	625	510	372	211	56	42	61	156	432
1925	628	955	955	936	847	631	414	216	232	239	239	249
1926	597	866	862	764	566	413	221	270	101	137	345	582
1927	868	1067	1067	875	604	358	277	211	114	209	317	480
1928	747	931	1067	965	761	578	462	318	158	158	290	464
1929	777	988	988	887	728	532	305	83	42	42	42	344
1930	686	779	1005	842	645	486	290	278	141	141	148	379
1931	641	641	641	560	412	233	42	42	42	42	42	374
1932	761	952	952	868	760	615	412	180	106	106	106	106
1933	437	512	658	658	551	366	151	42	42	42	42	320
1934	665	727	727	662	510	327	119	42	42	42	180	274
1935	664	739	1012	931	713	529	455	384	153	153	82	82
1936	460	793	959	812	585	423	357	304	220	220	140	225
1937	601	948	1067	969	782	762	647	329	211	265	439	669
1938	973	1067	1067	944	751	723	645	584	555	662	794	962
1939	1067	1067	1067	869	630	422	170	148	50	50	42	42
1940	444	792	957	778	523	275	197	133	42	86	149	307
1941	625	857	1047	912	746	791	642	496	514	691	863	1067
1942	1067	1067	1067	938	739	704	626	547	533	691	848	1047
1943	1067	1067	1067	937	751	590	553	335	339	474	554	735
1944	1001	1067	1067	873	638	438	342	292	69	130	300	501
1945	791	1067	1067	863	587	408	337	281	83	175	325	536
1946	798	798	834	648	427	264	216	176	70	159	288	487
1947	772	988	1066	870	633	434	187	188	50	50	50	50
1948	402	402	519	491	279	148	104	69	58	158	233	416
1949	709	796	1067	915	730	645	540	271	225	225	225	225
1950	582	867	990	826	600	471	460	319	351	452	639	889
1951	1067	1067	1067	879	655	435	321	265	246	340	496	692
1952	992	1067	1067	1007	874	919	892	874	960	1067	1067	1067
1953	1067	1067	1067	885	674	573	513	461	489	589	750	931
1954	1067	1067	1067	929	705	479	377	324	249	301	459	640
1955	941	974	954	812	655	591	475	240	212	212	295	599
1956	902	1067	1067	871	615	547	468	403	360	469	509	638
1957	868	1049	1067	922	719	570	551	323	318	503	684	890
1958	1067	1067	1067	901	655	637	556	488	500	648	750	914
1959	1067	1067	1067	829	574	344	63	42	42	84	42	42
1960	379	690	793	623	429	280	98	151	57	57	251	481
1961	798	1042	1067	901	701	539	333	284	163	163	163	390
1962	569	940	1067	844	578	364	240	183	79	229	375	545
1963	781	993	1067	945	715	499	419	352	314	411	534	693
1964	924	867	797	570	323	103	42	42	42	42	174	391
1965	714	944	1067	986	833	700	614	547	639	773	963	1067
1966	1067	1067	1067	841	580	318	42	42	42	42	154	352
1967	661	860	1067	910	720	694	614	549	548	661	763	931
1968	1067	1067	1067	875	628	403	132	112	50	177	352	556
1969	902	1067	1067	972	811	862	869	838	915	1067	1067	1067
1970	1067	1067	1067	888	659	424	192	141	50	156	317	508
1971	718	750	890	685	447	266	187	124	125	232	332	495
1972	734	840	1013	821	608	436	246	266	181	314	510	730
1973	1011	1067	1067	925	708	616	552	361	384	544	701	900
1974	1067	1067	1067	894	644	551	471	406	409	539	661	831
1975	1058	1067	1067	927	719	679	604	544	554	701	846	1019
1976	1067	1067	1067	861	623	437	274	277	133	177	164	164
1977	239	239	239	220	162	86	42	42	68	42	67	388
1978	798	1067	1067	919	758	585	528	396	364	364	364	460
1979	784	1036	1067	924	712	599	557	340	256	381	549	748
1980	1067	1067	1067	984	801	669	652	565	650	814	795	993
1981	1067	1067	1067	904	675	457	193	176	50	144	321	524
1982	801	1004	1067	909	669	625	545	479	494	642	788	1011
1983	1067	1067	1067	1022	962	1067	1067	1067	1067	1067	1067	1067
1984	1067	1067	1067	867	610	410	336	275	225	329	477	654
1985	884	980	1015	773	492	225	42	42	42	42	61	213
1986	556	872	1056	909	680	525	483	343	406	542	494	684
1987	966	1067	1067	902	691	539	356	287	139	139	64	290
1988	632	632	632	564	438	316	136	42	42	42	154	272
1989	520	520	839	694	468	269	42	44	42	47	42	159
1990	485	508	525	461	370	240	60	42	42	42	42	42
1991	53	42	384	387	328	208	69	42	42	42	42	64
1992	273	603	896	832	702	558	375	183	108	108	108	423
1993	796	1025	1067	896	661	591	511	402	282	320	337	485
1994	709	882	813	584	328	118	42	42	42	—	—	—
AVG:	785	905	963	822	622	480	358	281	237	304	381	541
MIN:	53	42	239	220	162	86	42	42	42	42	42	42
MAX:	1067	1067	1067	1022	962	1067	1067	1067	1067	1067	1067	1067

Table 2-6. DWRSIM Output of Castaic Lake Storage at Existing SWP Demand Conditions

(DWRSIM study 1995D06E-CALFED-771)
(End-of-Month Storage, in thousands of AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1921	—	—	—	—	—	—	—	—	—	294	299	304
1922	309	324	324	324	319	314	309	304	299	294	299	324
1923	324	314	319	324	319	314	309	304	299	294	299	304
1924	309	314	319	324	319	314	309	304	299	294	299	304
1925	309	314	319	324	319	314	309	304	299	294	299	304
1926	309	314	319	324	319	314	309	304	299	294	299	304
1927	309	324	324	324	319	314	309	304	299	294	299	324
1928	324	324	324	324	319	314	309	304	299	294	299	304
1929	309	314	319	324	319	314	309	304	299	294	299	304
1930	309	314	319	324	319	314	309	304	299	294	299	304
1931	309	314	319	324	319	314	309	304	299	294	299	304
1932	309	314	319	324	319	314	309	304	299	294	299	304
1933	309	314	319	324	319	314	309	304	299	294	299	304
1934	309	314	319	324	319	314	309	304	299	294	299	304
1935	309	314	319	324	319	314	309	304	299	294	299	304
1936	309	314	324	324	319	314	309	304	299	294	299	304
1937	309	324	324	324	319	314	309	304	299	294	299	304
1938	324	324	324	324	319	314	309	304	324	324	324	324
1939	324	324	324	324	319	314	309	304	299	294	299	304
1940	309	314	319	324	319	314	309	304	299	294	299	304
1941	309	324	324	324	319	314	309	304	299	324	324	324
1942	324	324	324	324	319	314	309	304	299	324	324	324
1943	324	324	324	324	319	314	309	304	299	294	299	304
1944	324	324	324	324	319	314	309	304	299	294	299	304
1945	309	324	324	324	319	314	309	304	299	294	299	304
1946	324	324	324	324	319	314	309	304	299	294	299	304
1947	309	324	324	324	319	314	309	299	294	294	299	304
1948	309	314	319	324	319	314	301	294	294	294	299	304
1949	309	314	319	324	319	314	309	304	299	294	299	304
1950	309	314	319	324	319	314	309	304	299	294	299	304
1951	324	324	324	324	319	314	309	304	299	294	299	304
1952	324	324	324	324	319	314	323	324	324	324	324	324
1953	324	324	324	324	319	314	309	304	299	294	324	324
1954	324	324	324	324	319	314	309	304	299	294	299	304
1955	309	324	324	324	319	314	309	304	299	294	299	304
1956	309	324	324	324	319	314	309	304	299	294	299	304
1957	324	324	324	324	319	314	309	304	299	294	299	304
1958	324	324	324	324	319	314	309	304	299	324	324	324
1959	324	324	324	324	319	314	309	304	299	294	299	304
1960	309	314	324	324	319	314	309	304	299	294	299	304
1961	309	314	324	324	319	314	309	304	299	294	299	304
1962	309	314	324	324	319	313	302	299	299	294	299	304
1963	309	324	324	324	319	314	309	304	299	294	299	324
1964	324	324	319	324	319	314	309	304	294	294	299	304
1965	309	314	324	324	319	314	309	304	299	294	299	324
1966	324	324	324	324	319	314	309	304	299	294	299	304
1967	309	324	324	324	319	314	309	304	324	324	324	324
1968	324	324	324	324	319	314	309	304	299	294	299	304
1969	324	324	324	324	319	314	324	324	324	324	324	324
1970	324	324	324	324	319	314	309	304	299	294	299	304
1971	324	324	324	324	319	314	309	304	299	294	299	304
1972	324	324	324	324	319	314	309	304	299	294	299	304
1973	309	324	324	324	319	314	309	304	299	294	299	324
1974	324	324	324	324	319	314	309	304	299	294	303	324
1975	324	324	324	324	319	314	309	304	299	294	299	324
1976	324	324	324	324	319	314	309	304	299	294	299	304
1977	309	314	319	324	319	314	309	304	299	294	299	304
1978	309	314	324	324	319	314	309	304	299	294	314	324
1979	324	324	324	324	319	314	309	304	299	294	299	304
1980	324	324	324	324	319	314	309	304	299	294	299	324
1981	324	324	324	324	319	314	309	304	299	294	299	304
1982	309	324	324	324	319	314	309	304	299	294	299	324
1983	324	324	324	324	319	324	324	324	324	324	324	324
1984	324	324	324	324	319	314	309	304	299	294	299	324
1985	324	324	324	324	319	314	309	304	299	294	299	304
1986	309	314	324	324	319	314	309	304	299	294	299	304
1987	324	324	324	324	319	314	309	304	299	294	299	301
1988	309	314	319	324	319	314	309	304	299	294	299	304
1989	309	314	319	324	319	314	309	304	299	294	294	294
1990	309	314	319	324	319	314	309	304	299	294	299	304
1991	309	314	319	324	319	314	309	304	299	294	299	304
1992	309	314	319	324	319	314	309	304	299	294	299	304
1993	309	314	324	324	319	314	309	304	299	294	299	324
1994	324	324	319	324	319	314	309	304	299	—	—	—
AVG:	316	320	322	324	319	314	309	305	301	297	302	310
MIN:	309	314	319	324	319	313	301	294	294	294	294	294
MAX:	324	324	324	324	319	324	324	324	324	324	324	324

Table 2-7. DWRSIM Output of Castaic Lake Storage at 2020 SWP Demand Conditions

(DWRSIM study 2020D09C-CALFED-786)
(End-of-Month Storage, in thousands of AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1921	—	—	—	—	—	—	—	—	—	294	299	304
1922	309	314	324	324	319	314	294	294	294	294	299	304
1923	309	314	319	324	319	314	294	294	294	294	299	303
1924	309	314	319	324	319	314	309	304	299	294	299	304
1925	309	314	319	324	319	314	309	304	299	294	299	304
1926	309	314	319	324	319	314	309	304	299	294	299	304
1927	309	324	324	324	319	314	294	294	294	294	299	304
1928	309	314	324	324	319	314	309	304	299	294	299	304
1929	309	314	319	324	319	314	309	304	299	294	299	304
1930	309	314	319	324	319	314	309	304	299	294	299	304
1931	309	314	319	324	319	314	309	304	299	294	299	304
1932	309	314	319	324	319	314	309	304	299	294	299	304
1933	309	314	319	324	319	314	309	304	299	294	299	304
1934	309	314	319	324	319	314	309	304	299	294	299	304
1935	309	314	319	324	319	314	294	294	294	294	299	304
1936	309	314	319	324	319	314	303	294	299	294	299	304
1937	309	314	324	324	319	314	309	304	299	294	299	304
1938	309	324	324	324	319	314	294	294	294	294	299	304
1939	324	324	324	324	319	314	309	304	299	294	299	299
1940	309	314	319	324	319	314	294	294	294	294	299	304
1941	309	314	319	324	319	314	309	304	299	294	299	304
1942	324	324	324	324	319	314	309	299	299	294	299	304
1943	324	324	324	324	319	314	309	304	299	294	299	304
1944	309	324	324	324	319	314	309	304	299	294	299	304
1945	309	319	324	324	319	314	302	294	299	294	299	304
1946	309	314	319	324	319	314	309	304	299	294	299	304
1947	309	314	319	324	319	314	309	304	299	294	299	304
1948	309	314	319	324	319	314	309	304	299	294	299	304
1949	309	314	319	324	319	314	309	304	299	294	299	304
1950	309	314	319	324	319	314	309	304	299	294	299	304
1951	324	324	324	324	319	314	309	300	299	294	299	304
1952	309	324	324	324	319	314	309	304	299	310	324	324
1953	324	324	324	324	319	314	309	304	299	294	299	304
1954	324	324	324	324	319	314	309	302	299	294	299	304
1955	309	314	319	324	319	314	309	304	299	294	299	304
1956	309	324	324	324	319	314	294	294	294	294	299	304
1957	309	314	324	324	319	314	309	304	299	294	299	304
1958	324	324	324	324	319	314	297	294	299	294	299	304
1959	324	324	319	324	319	314	309	304	299	294	299	304
1960	309	314	319	324	319	314	309	304	299	294	299	304
1961	309	314	324	324	319	314	309	304	299	294	299	304
1962	309	314	324	324	319	314	298	294	299	294	299	304
1963	309	314	324	324	319	314	294	294	294	294	299	304
1964	309	314	319	324	319	314	309	304	294	294	299	304
1965	309	314	324	324	319	314	309	304	299	294	299	324
1966	324	324	324	324	319	314	303	294	294	294	299	304
1967	309	314	322	324	319	314	294	294	294	294	299	304
1968	324	324	324	324	319	314	309	304	299	294	299	304
1969	309	324	324	324	319	314	309	304	299	294	299	304
1970	324	324	324	324	319	314	309	304	299	294	324	324
1971	309	314	319	324	319	314	294	294	294	294	299	304
1972	309	314	319	324	319	314	309	304	299	294	299	304
1973	309	324	324	324	319	314	309	302	299	294	299	304
1974	324	324	324	324	319	314	294	294	294	294	299	304
1975	309	324	324	324	319	314	295	294	299	294	299	304
1976	324	324	324	324	319	314	309	304	299	294	299	304
1977	309	314	319	324	319	314	309	304	299	294	299	304
1978	309	318	324	324	319	314	294	294	294	294	299	304
1979	309	314	324	324	319	314	309	304	299	294	299	304
1980	309	324	324	324	319	314	309	304	299	294	299	304
1981	324	324	324	324	319	314	309	304	299	294	299	304
1982	309	314	324	324	319	314	297	294	299	294	299	304
1983	324	324	324	324	319	324	324	313	324	324	324	324
1984	324	324	324	324	319	314	300	294	299	294	299	304
1985	309	314	319	324	319	314	309	294	294	294	299	304
1986	309	314	319	324	319	314	309	304	299	294	299	304
1987	309	324	324	324	319	314	309	304	299	294	299	304
1988	309	314	319	324	319	314	309	304	299	294	299	304
1989	309	314	319	324	319	314	309	304	299	294	299	299
1990	309	314	319	324	319	314	309	304	299	294	299	304
1991	309	314	319	324	319	314	309	304	299	294	299	304
1992	309	314	319	324	319	314	309	304	299	294	299	304
1993	309	314	323	324	319	314	294	294	294	294	299	304
1994	309	314	319	324	319	314	309	303	294	—	—	—
AVG:	312	318	322	324	319	314	305	301	298	295	300	305
MIN:	309	314	319	324	319	314	294	294	294	294	299	299
MAX:	324	324	324	324	319	324	324	313	324	324	324	324

3.0 STATE WATER PROJECT SUPPLY ANALYSIS

3.1 ANALYSIS ASSUMPTIONS AND METHODOLOGY

3.1.1 Overview of Analysis

The water supply analysis included in this EIR shows the potential impacts resulting from implementation of the Project to both WRMWSD SWP supplies and CLWA SWP supplies. Figure 3-1 provides an overview of the water supply analysis. The first two components shown in this figure, Primary Model Tool and Analysis Timeframe, are described in section 2.1. The remaining two components in the figure, SWP Water Supply Allocation Scenarios and Hydrologic Conditions, are described directly below. Following these discussions is a description of both the assumptions and the general methodology followed in these analyses that are common to all three allocation scenarios.

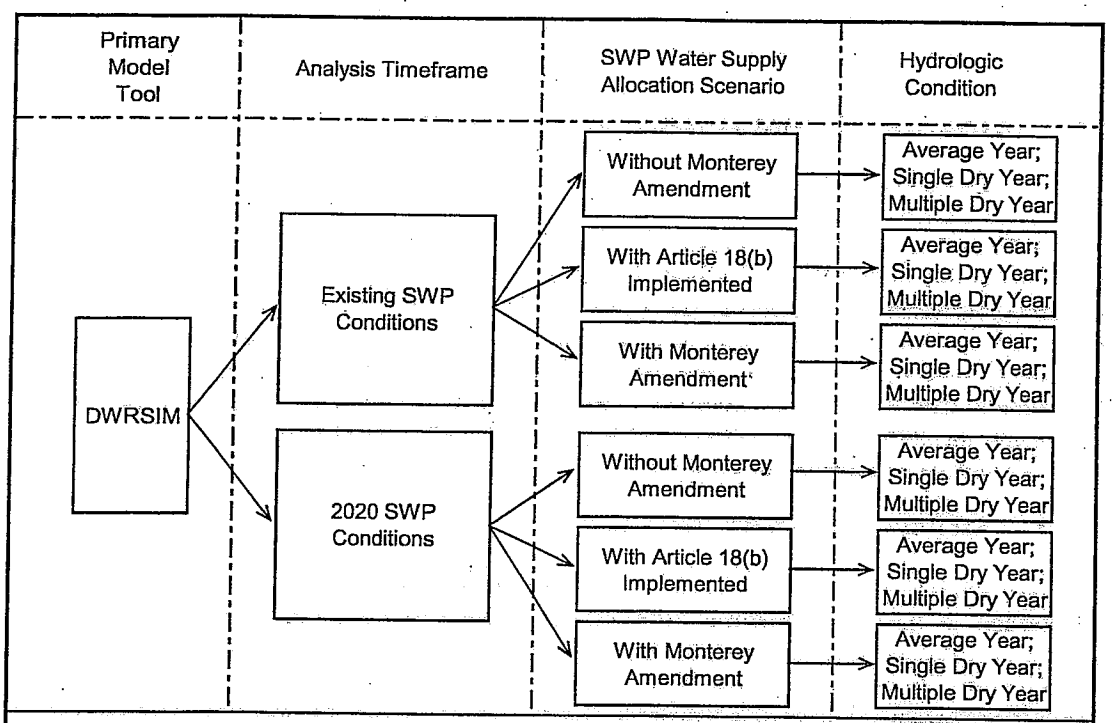
3.1.1.1 SWP Water Supply Allocation Scenarios

As was discussed in section 1.3, DWR is in the process of preparing a new EIR for the Monterey Amendment. Since the Monterey Amendment changes the way SWP supplies are allocated among Contractors, this EIR provides three separate analyses of the Project's potential impacts to SWP water supplies available to WRMWSD and CLWA. The three analyses represent three possible scenarios for allocating available SWP supplies among Contractors, and provide an evaluation of the amount of SWP supply that would be associated with the 41,000 AF of Table A Amount under each of the allocation scenarios. The three analyses are governed by specific terms in the Water Supply Contracts, and are referred to in this EIR as: "SWP Allocation without the Monterey Amendment" (Without Monterey Amendment); "SWP Allocation without the Monterey Amendment and with Implementation of Article 18(b) Permanent Shortage Provision" (With Article 18(b) Implemented); and, "SWP Allocation with the Monterey Amendment" (With Monterey Amendment). DWR is currently allocating SWP supplies in accordance with the Water Supply Contract as amended by the Monterey Amendment (i.e., the With Monterey Amendment scenario). The SWP supply allocation scenarios that form the basis of the three analyses are summarized in Table 3-1. These allocation scenarios are further described, along with analysis methodology and assumptions that are specific to each scenario, in sections 3.1.3.1 through 3.1.3.3 below.

It is important to note that the total amount of SWP supply available in any given year is independent of the allocation scenario. The total amount of SWP supply available in a given year is determined by that year's hydrology, the amount of storage in SWP reservoirs at the beginning of the year, and the regulatory and operational constraints that govern Delta and SWP facility operations. The different allocation scenarios determine only how that available SWP supply is allocated among the Contractors.

3.1.1.2 Hydrologic Conditions

Because SWP water supplies vary from year to year depending on a variety of factors, the supply analyses for this EIR were conducted for each year in the period of hydrologic record included in the DWRSIM model studies. The results of the water supply analysis are presented



Definitions:

DWRSIM - DWR's SWP operations model. DWRSIM calculates the amount of water the SWP could deliver to Contractors in each month over a 73-year period of hydrologic record, based on a given set of facilities and operating constraints and for a given level of Contractor demand. (DWRSIM studies used were conducted by DWR in 1998 for CALFED Bay-Delta Program EIS/EIR [CALFED 2000].)

Existing SWP Conditions - A timeframe for anlaysis in the DWRSIM study. The existing condition study assumes the use of then-existing (1998) SWP facilities and operating constraints, along with then-current estimates of Contractor demands and upstream land and water use. (DWRSIM study 1995D06E-CALFED-771)

2020 SWP Conditions - A timeframe for analysis in the DWRSIM study. The 2020 condition study assumes the use of then-existing (1998) SWP facilities and operating constrains, along with estimated future (2020) Contractor demands upstream land and water use. (DWRSIM study 2020D09C-CALFED-786)

Without Monterey Amendment (Initial agricultural reduction in allocations) - Allocation of available SWP supplies based on the original terms of the Water Supply Contracts.

With Article 18(b) Implemented (Proportionate reduction in Table A Amounts) - Proportionate reduction in Contractor's Table A Amounts and allocation of available SWP supplies based on the original terms of the Water Supply Contracts, assuming DWR implemented Article 18(b) (i.e., the permanent shortage provision).

With Monterey Amendment (Proportionate reduction in allocations) - Allocation of available SWP supplies based on the terms of the Monterey Amendment to the Water Supply Contracts.

Average Year - The average quantity of supply available, based on the 73 years of DWRSIM model results.

Single Dry Year - Supply available in the single year with the lowest total SWP deliveries, based on the DWRSIM model results (1977). The single dry year supply is considered to be the worst-case scenario, with a probability of occurrence of once in 73 years, or about 1.4 percent of the time.

Multiple Dry Year - Average supply available over the four consecutive drought years of 1988 through 1991, based on the DWRSIM model results.

Figure 3-1. Water Supply Analysis Overview

Table 3.1. Summary of SWP Water Supply Contract Without Monterey Amendment, With Article 18(b) Implemented and With Monterey Amendment Allocation Scenarios

	Without Monterey Amendment	*With Article 18(b) Implemented*	*With Monterey Amendment*
SWP Supplies Allocated Based on:	Original terms of Water Supply Contracts.	Original terms of Water Supply Contracts, assuming DWR implemented Article 18(b), (i.e., if it determined SWP was in "permanent shortage" situation). All Contractors' Table A Amounts proportionately reduced until they total new "minimum project yield," as determined by DWR.	Terms of Monterey Amendment to Water Supply Contracts.
Table A Water Shortage Allocation	Agricultural Contractors receive initial supply reduction (up to 50% of Table A Amount in one year, and up to 100% in any consecutive seven years). Any remaining shortage allocated proportionately among all Contractors.	Same as Without Monterey Amendment[1].	Shortages allocated in proportion to Contractors' Table A Amounts; no agricultural and M&I allocation differential.
Surplus Water Allocation	First priority given to Agricultural Contractors. Two categories of surplus water: • Scheduled surplus. • Unscheduled surplus.	Same as Without Monterey Amendment[2].	Surplus allocated in proportion to Contractors' Table A Amounts. Scheduled surplus water eliminated. Unscheduled surplus water renamed; referred to as Article 21 water.
Results for Contractors	Agricultural Contractors have: • Less reliable Table A supply than M&I Contractors (due to initial agricultural reductions), but, • More access to surplus water.	Supplies shift from M&I Contractors to Agricultural Contractors, due to: • Smaller and less frequent initial agricultural reductions, and, • More of available supply classified as surplus water (with agricultural priority).	Reliability of both Table A supply and surplus supply is same for Agricultural Contractors and M&I Contractors.

1. Same allocation rules apply, but because Table A Amounts are reduced, initial agricultural reductions are smaller and less frequent.
2. Same allocation rules apply, but because Table A Amounts are reduced, surplus supplies are available more frequently.

in section 3.2 below, both in graphical form over the entire period of record and in tabular form for three selected hydrologic conditions, as follows:

1. Graph of supplies available over DWRSIM's entire 73-year period of hydrologic record, presented as probability of exceedance curves (i.e., the probability of supplies being greater than or equal to specific quantities).
2. Table of supply results for selected hydrologic conditions, defined as:
   - Average Year - The average supply available, based on the 73 years of DWRSIM model results.
   - Single Dry Year - The supply available in the single year with the lowest total SWP deliveries, based on the DWRSIM model results, which occurred in the critical drought year of 1977. The single dry year supply is considered to be the worst-case scenario, with a probability of occurrence of once in 73 years, or about 1.4 percent of the time.
   - Multiple Dry Year Period – The average supply available over the four consecutive drought years of 1988 to 1991, based on the DWRSIM model results.

3.1.2 Common Assumptions and Methodology

Assumptions

The general assumptions made in determining the amount of SWP water supply available to WRMWSD and CLWA that are common to all three water allocation scenarios are described below.

Classification of Table A Amounts - In the SWP supply analyses conducted for this EIR, the classifications of Table A Amounts either as agricultural or as M&I were maintained throughout all allocation scenarios. These classifications were determined as part of the original Water Supply Contracts based on the anticipated use of the water at the time the original contracts went into effect, and these classifications have not changed as Table A Amounts have been transferred. Therefore, any agricultural Table A Amounts that have been transferred to M&I Contractors were treated in the allocation scenarios as agricultural Table A amounts. For purposes of allocating supplies among the three broad Contractor groups, all transferred agricultural Table A Amounts were initially included with the remaining agricultural Table A Amounts of the Agricultural Contractors to determine the total supply allocated to total agricultural Table A Amounts, based on the allocation rules appropriate for that Table A Amount classification. Agricultural Table A Amounts transferred to M&I Contractors, which are all still treated as agricultural in this supply analysis, consist of the following:

- A 1991 transfer to CLWA of 12,700 AF (the remaining 41,500 AF of CLWA's 54,200 AF total Table A Amount without the Project is classified as M&I),
- All transfers as part of the 130,000 AF of Table A Amount made available to M&I Contractors by Agricultural Contractors under Article 53 of the Monterey Amendment that have already completed by other M&I Contractors, and
- The Project's 41,000 AF (also part of the 130,000 AF).

Surplus Water - In addition to Table A supplies, CLWA and WRMWSD can also receive deliveries of surplus water (see Table 3-2 for descriptions of types of surplus water).

- Scheduled surplus water is not assumed to be available under the Without Monterey Amendment and With Monterey Amendment allocation scenarios. Scheduled surplus water was generally available only during the early years of the SWP, when total Contractor demands were low. Due primarily to increasing Contractor demands for Table A supplies, scheduled surplus water has not been available since the mid-1980s. Further, this type of surplus water was eliminated as part of the Monterey Amendment. In the water supply analyses here, scheduled surplus water is only included in the allocation scenario With Article 18(b) Implemented, since under that scenario scheduled deliveries of water in excess of a reduced minimum project yield (i.e., scheduled surplus water) would once again be available on a scheduled basis similar to Table A supplies.
- Unscheduled surplus water/Article 21 water is not included in the water supply analysis for any of the three water allocation scenarios. This is because it is not available on a routine or predictable basis, and is generally only available for short periods of time during low demand months, when most Contractors have a limited ability to use it.

Table 3-2. SWP Surplus Water Types

Surplus water: SWP water that can be made available to Contractors when water and capacity are available in excess of SWP storage needs and Table A supplies. See below for terminology for and descriptions of specific types of surplus water. Note that surplus water terminology changed with implementation of the Monterey Amendment.	
Without Monterey Amendment	With Monterey Amendment
Scheduled surplus water: Water that DWR determined to be available, in addition to Table A supplies, which was scheduled for delivery throughout the year (in the same manner as Table A supplies). This water was generally available only during the early years of the SWP (when Contractor demands were low).	Category deleted as part of the Monterey Amendment. Given increased Contractor demands, this water was physically no longer available.
Unscheduled surplus water: Water that DWR made available when water and capacity were available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors demands are low, and only under specific conditions that do not occur on an annual basis.	**Article 21 water:** Same as unscheduled surplus water. (Was defined under the Monterey Amendment as "interruptible water," but is more commonly referred to as "Article 21 water."

Deliveries to CLWA - For the purposes of estimating the maximum potential impact, the impact analyses assume that CLWA will take delivery of the entire amount of water made available from the 41,000 AF Table A Amount transferred. This assumption conservatively provides the largest effect on SWP operations, even though CLWA may not currently have the local demand for this entire amount of water in average and wetter hydrologic years.

Methodology

The general methodology to determine the amount of SWP water supply available to WRMWSD and CLWA that is common to all three water allocation scenarios is as follows:

1. Data from the two DWRSIM model studies described in section 2.1 were used as a starting point for the analysis. The specific model data used as this starting point consisted of: (a) input of annual Contractor demands, including demands totaled for the three broad Contractor groups of Agricultural Contractors, MWD, and Other M&I Contractors, for each hydrologic year; and (b) output of total annual SWP Table A deliveries to Contractors, for each hydrologic year.

2. The DWRSIM output of total annual SWP deliveries was allocated, for each year over the model's hydrologic period, among the three broad Contractor groups in accordance with the specific allocation rules for each of the three SWP water allocation scenarios described above (Without Monterey Amendment, With Article 18(b) Implemented, and With Monterey Amendment). In this allocation process, the supply for each year was allocated among each broad Contractor group, up to that group's demand; and any remaining SWP supply was then allocated among the remaining Contractor group(s) with unmet demand that year.

3. The annual SWP supplies available to WRMWSD and CLWA were then calculated by multiplying the supplies for each year from step 2 for the Agricultural Contractors and Other M&I Contractors by the proportionate shares of WRMWSD's and CLWA's specific Table A Amounts to the total Table A Amounts within those broad Contractor groups.

3.1.3 Scenario-Specific Assumptions and Methodology

3.1.3.1 Without Monterey Amendment

Allocation Description

Under the original terms of the Water Supply Contracts, water supply shortages, as well as any surplus water that might be available, were allocated differently among Contractors depending on whether Contractors' Table A Amounts were classified as agricultural or M&I. Under the original SWP contract terms, in a year with a water supply shortage (i.e., a year when total available SWP supplies were less than Contractor requests), available water supplies were allocated such that Agricultural Contractors received initial reductions in their deliveries of up to 50 percent in any one year, and up to a cumulative total of 100 percent in any seven consecutive years. Any shortages remaining in a year after the initial agricultural reduction were then allocated proportionately among all Contractors. When surplus water was available, priority to this water was given to agricultural use and groundwater replenishment. This priority to surplus water was given to both scheduled surplus water and unscheduled surplus water.

Since WRMWSD's Table A Amount is classified as agricultural, the Table A Amount transferred to CLWA would be considered agricultural. Therefore, in this allocation scenario, under

shortage conditions the 41,000 AF of Table A Amount would be subject to the initial agricultural reductions. Similarly, under surplus water conditions the 41,000 AF of Table A Amount would have the agricultural priority to surplus water.

Assumptions

- Since the Project's 41,000 AF of Table A Amount is classified as agricultural, this Table A Amount would be subject to the initial agricultural reductions under shortage conditions.
- Scheduled surplus water was assumed to be unavailable.

Methodology

The DWRSIM output of total annual SWP deliveries of Table A water was allocated, for each year over the model's hydrologic period, among the three broad Contractor groups. In years when there was no shortage (i.e., when available SWP supplies met Contractor demands), all three Contractor groups were allocated supplies equal to their demands. In shortage years (i.e., when supplies were less than demands), the total available SWP supply that year was allocated among the three Contractor groups according to the following methodology:

1. Agricultural Contractors received initial reductions of up to 50 percent of their demand in any one year, and up to a cumulative total of 100 percent in any seven consecutive years.
2. Any remaining shortage in a year was allocated proportionately among all Contractor groups.
3. The resulting supplies for each Contractor group were compared to that group's demands. If supplies for any Contractor group exceeded its demand, its supply was reduced to its demand.
4. Any remaining available supplies were allocated among Contractor group(s) with unmet demands.
5. Steps 3 and 4 were repeated until all available supplies for that year were allocated.

3.1.3.2 *With Article 18(b) Implemented*

Allocation Description

Under the original terms of the Water Supply Contracts, DWR could invoke Article 18(b) of the Water Supply Contracts if it determined that the SWP was in a "permanent shortage" situation. With implementation of Article 18(b), DWR would determine a new "minimum project yield"

for the SWP, and reduce Contractors' Table A Amounts proportionately until they totaled this reduced minimum project yield[7,8].

There is a great deal of controversy and uncertainty regarding this allocation scenario and how it might have been implemented by DWR. More specifically, there are several different legal and contractual interpretations, particularly between Agricultural and M&I Contractors, primarily regarding whether DWR could have validly invoked Article 18(b), and assuming that it could have done so, how it would have allocated water under Article 18(b). In general, the water allocation rules that would apply under this allocation scenario are similar to the allocation rules described for the Without Monterey Amendment scenario described above, with Agricultural Contractors receiving initial reductions in shortage years and priority to surplus when it was available. However, with all Contractor Table A Amounts reduced, shortages (i.e., supplies insufficient to meet Contractor requests for Table A water) would occur much less frequently (because the SWP could deliver the smaller Table A Amounts more regularly), and the initial agricultural reduction would be applied to a smaller Table A Amount (i.e., the reductions would be smaller). And with Table A Amounts reduced, SWP supplies in excess of the reduced minimum project yield would be available for scheduled delivery in most years. Unscheduled surplus water would be available under the same conditions, in the same amounts, and allocated in the same way as in the Without Monterey Amendment scenario.

There are two primary uncertainties under this allocation scenario. The first unknown is what value of minimum project yield DWR would have used in reducing Table A Amounts. A specific value for minimum project yield had not been calculated in the several years leading up to the Monterey Amendment, but was commonly thought at the time to be in the range of 2.0 to 2.5 million AF. The second uncertainty is how any water supply above minimum project yield would have been allocated. This is an area of controversy, with some Contractors contending it should be allocated as surplus water with Agricultural Contractors receiving a priority, and others contending it should be allocated in proportion to Table A Amounts.

Given these uncertainties, two separate Article 18(b) allocation scenarios that bound the various assumptions and interpretations described above were analyzed for this EIR. Scenario 1 assumes minimum project yield is reduced to 2.0 million AF, and scheduled surplus water is allocated with priority given to Agricultural Contractors. The second scenario assumes

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7 Without the Monterey Amendment, Article 18(b) of the Water Supply Contracts stated "In the event that the State is unable to construct sufficient additional conservation facilities to prevent a reduction in the minimum project yield, or if for any other reason there is a reduction in the minimum project yield, which, notwithstanding preventive or remedial measures taken or to be taken by the State, threatens a permanent shortage in the supply of project water to be made available to the contactors: (1) The annual entitlements and the maximum annual entitlements of all contractors, except to the extent such entitlements may reflect established rights under the area of origin statutes, shall, by amendment of Table A of this contract, be reduced proportionately by the State to the extent necessary so that the sum of the revised maximum annual entitlements of all contractors will then equal such reduced minimum project yield...".

8 Without the Monterey Amendment, Minimum Project Yield was defined in the Water Supply Contracts as "the dependable annual supply of project water to be made available, estimated to be 4,230,000 AF per year, said amount to be determined by the State on the basis of coordinated operation studies of initial project conservation facilities and additional conservation facilities, which studies shall be based upon: (1) the estimated relative proportion of deliveries for agricultural use to deliveries for municipal use for the year 1990, and the characteristic distributions of demands for these two uses throughout the year; (2) an allowable reduction in the agricultural use portion of the minimum project yield, due to drought, of not to exceed fifty percent (50%) in any one year, nor a total of one hundred percent (100%) of one year's supply in any series of seven consecutive years; and (3) agreements now in effect or as hereafter amended or supplemented between the State and the United States and others regarding the diversion or utilization of waters of the Delta or streams tributary thereto."

minimum project yield is reduced to 2.5 million AF, and deliveries above this amount are allocated in proportion to Table A Amounts. Both scenarios are discussed further and their results are presented below.

Note that in this EIR (outside of this appendix), to keep the number of allocation scenarios presented to a more manageable number, only one of these two Article 18(b) scenarios is presented. Scenario 1 would result in more water being allocated to Agricultural Contractors than Scenario 2, and, therefore, would result in more water associated with the Project's 41,000 AF of Agricultural Table A Amount. Since Scenario 1 would result in the worst case for purposes of analysis of potential growth impacts, only the results of Scenario 1 are presented in the EIR outside this appendix.

Assumptions

As was noted above, there are several different legal and contractual interpretations regarding how DWR would have allocated water under implementation of Article 18(b). The following assumptions regarding the Water Supply Contract provisions, made solely for the purpose of this EIR, are considered a reasonable interpretation.

SWP Supply Availability - DWR would maintain its existing reservoir operations and delivery criteria in determining how much water is available for delivery in a given year. DWR would deliver the same total amount of water in any given year that it would have delivered without Article 18(b) implementation. The only change is the label on the water delivered, with a portion labeled as Table A water and a portion labeled as scheduled surplus water.

Reductions in Table A Amounts - Total SWP Table A Amounts would be reduced to a new minimum project yield, and each Contractor's Table A Amount would be reduced proportionately from its current Table A Amount. In the analysis for this EIR, the minimum project yield is reduced from 4.2 million AF to an assumed value of 2.0 million AF for Scenario 1 and 2.5 million AF for Scenario 2.

Note that the specific value of a reduced minimum project yield is quite speculative. Had Article 18(b) been invoked, minimum project yield could have been determined based on a calculation, in accordance with the minimum project yield definition, or perhaps more likely, would have been reached through a negotiation or litigation process. Even if a calculated value would have been used, differing values could have been determined based on which specific methodology was used and how strictly the criteria in the definition was followed. Commonly referenced estimates of minimum project yield in the early 1990s were 2.0 to 2.5 million AF. However, these estimates were from the early 1990s, prior to D-1641 and its added restrictions on SWP operations, and so might be considered high. On the other hand, the calculation described in the minimum project yield definition can be interpreted to include yield from future SWP facilities or supply improvement programs. Given the wide range in potential values of minimum project yield and the speculative nature of how such a value might have been settled upon, two values were selected for use in this analysis. The values of 2.0 and 2.5 million AF are considered a reasonable range that would likely bound the potential value of minimum project yield that might have been settled upon.

Contractor Water Demands - A Contractor's total demand for water would not change. Its demand for Table A water would be up to its reduced Table A Amount, and its demand for scheduled surplus water would be any demand in excess of its reduced Table A Amount.

Scheduled Surplus Water Demands - A Contractor's demand for scheduled surplus water would be any demand in excess of its reduced Table A Amount, limited to the amount that would allow total scheduled deliveries up to its pre-reduction Table A Amount. Since surplus water priorities are based on both agricultural use and groundwater replenishment, M&I Contractor demands were split into demands for groundwater replenishment and demands for all other uses. M&I Contractor demands for groundwater replenishment were assumed in this analysis to be ten percent of their total demands.

Table A Water Deliveries - In any year when total SWP deliveries are less than the reduced minimum project yield, shortages would be allocated under the Without Monterey Amendment provisions, with initial cuts to Agricultural Contractors of up to 50 percent of their reduced Table A Amount in any one year and up to a cumulative 100 percent of their reduced Table A Amount in any consecutive seven years. Any remaining shortage would be shared among all Contractors in proportion to their reduced Table A Amounts.

Total Scheduled Surplus Water Deliveries - The total amount of scheduled surplus water available for delivery would be that portion of the total available SWP supply that is in excess of the reduced minimum project yield.

Surplus Water Allocation Criteria - Under Scenario 1, any scheduled surplus water available would be allocated among Contractors in accordance with the Without Monterey Amendment surplus provisions. These provisions specify that if surplus supplies are less than surplus water demands for agricultural and groundwater replenishment uses, surplus water is allocated first among Contractors upstream and downstream of Dos Amigos Pumping Plant, in proportion to their demands for those uses. The portion of the supply allocated for Contractors downstream of Dos Amigos is further apportioned, in proportion to and up to the demands for those uses, as follows: 69 percent to the San Joaquin service area, 29 percent to the Southern California service area, and 2 percent to the Central Coast service area. If surplus supplies are greater than demands for agricultural and groundwater replenishment uses but less than total surplus demands, the surplus supply in excess of agricultural and groundwater replenishment demands is allocated in proportion to the surplus demand for other uses.

Under Scenario 2, any scheduled surplus water available would be allocated among Contractors in proportion to Table A Amounts. The amount allocated to a Contractor would be limited to the amount that would allow total scheduled deliveries to that Contractor (including Table A water and scheduled surplus water) to equal its pre-reduction Table A Amount

Methodology

The DWRSIM output of total annual SWP deliveries of Table A water was allocated, for each year over the model's hydrologic period, among the three broad Contractor groups according to the following methodology:

1. The Table A Amounts of the three Contractor groups were proportionately reduced until they totaled the reduced minimum project yield.

2. In years when there was no shortage (i.e., when available SWP supplies met Contractor demands), all three Contractor groups were allocated supplies equal to their demands.

3. In shortage years (i.e., when supplies were less than demands), the total available SWP supply that year was allocated among the three Contractor groups as follows:

   a. First, Table A water was allocated. If the available SWP supply exceeded the total reduced minimum project yield, each Contractor group was allocated Table A water equal to its reduced Table A Amount. If the available SWP supply was less than the total reduced minimum project yield, the supply available was allocated among the three Contractor groups as follows:

      i. Agricultural Contractors received initial reductions of up to 50 percent of their reduced Table A Amount in any one year, and up to a cumulative total of 100 percent in any seven consecutive years.

      ii. Any remaining shortage in a year was allocated proportionately among all Contractor groups.

   b. Next, scheduled surplus water was allocated. Contractor demands for scheduled surplus water were determined to be that portion of their total demand for SWP water unmet by Table A water deliveries. The manner is which the scheduled surplus water was allocated differed between Scenarios 1 and 2, as follows:

      Scenario 1: For each Contractor group, this demand for scheduled surplus water was separated into: demand for agricultural and groundwater replenishment use, and demand for all other uses. These demands were further split into four geographic SWP areas (upstream of Dos Amigos Pumping Plant, San Joaquin service area, Southern California service area, and Central Coast service area).

      i. If scheduled surplus water supplies were less than scheduled surplus water demands for agricultural and groundwater replenishment uses, scheduled surplus water was allocated first among Contractors upstream and downstream of Dos Amigos Pumping Plant, in proportion to their demands for those uses. The portion of the supply allocated for Contractors downstream of Dos Amigos was further apportioned, up to the demands for those uses, as follows: 69 percent to the San Joaquin service area, 29 percent to the Southern California service area, and 2 percent to the Central Coast service area.

      ii. If scheduled surplus water supplies were greater than demands for agricultural and groundwater replenishment uses but less than total scheduled surplus demands: (1) scheduled surplus supply for agricultural and groundwater replenishment uses was allocated up to the demands for those uses; and (2) the scheduled surplus supply in excess of agricultural and groundwater

replenishment demands was allocated in proportion to the scheduled surplus demand for other uses, up to the demands for those uses.

iii. These various uses and locations of use were then aggregated to get total scheduled surplus supplies for each of the three Contractor groups.

Scenario 2:

i. The scheduled surplus water supply was allocated among all Contractor groups in proportion to each group's total Table A Amount.

ii. The resulting scheduled surplus water supply for each Contractor group was compared to that group's demand for scheduled surplus water. If scheduled surplus water supplies for any Contractor group exceeded its scheduled surplus water demand, its scheduled surplus water supply was reduced to its scheduled surplus water demand.

iii. Any remaining available scheduled surplus water supplies were allocated among Contractor group(s) with unmet scheduled surplus water demands.

c. The allocated Table A supplies and allocated scheduled surplus water supplies were then added to get total SWP supplies for each Contractor group.

3.1.3.3 *With Monterey Amendment*

Allocation Description

Under the terms of the Water Supply Contracts as amended by the Monterey Amendment, all SWP water supplies are shared among all Contractors in proportion to their Table A Amounts. Therefore, the 41,000 AF of Table A Amount transferred to CLWA from WRMWSD would be subject to the same shortages as all other Table A Amounts (i.e., it would not be subject to an initial agricultural reduction), and would have access to the same proportionate share of any available surplus water as all other Table A Amounts. As part of the Monterey Amendment, the category of scheduled surplus water was eliminated since it was no longer available, the category of unscheduled surplus water was retained but is now referred to as Article 21 water, and Article 18(b) was deleted.

Assumptions

- The surplus water category of scheduled surplus water was deleted as part of the Monterey Amendment and so was not considered.

Methodology

The DWRSIM output of total annual SWP deliveries of Table A water was allocated, for each year over the model's hydrologic period, among the three broad Contractor groups. In years when there was no shortage (i.e., when available SWP supplies met Contractor demands), all three Contractor groups were allocated supplies equal to their demands. In shortage years (i.e.,

when supplies were less than demands), the total available SWP supply that year was allocated among the three Contractor groups according to the following methodology:

1. The total supply was allocated among all Contractor groups in proportion to each group's total Table A Amount.

2. The resulting supplies for each Contractor group were compared to that group's demands. If supplies for any Contractor group exceeded its demand, its supply was reduced to its demand.

3. Any remaining available supplies were allocated among Contractor group(s) with unmet demands.

4. Steps 2 and 3 were repeated until all available supplies for that year were allocated.

3.2 ANALYSIS RESULTS

As was discussed above in section 3.1.1, the supply analyses for this EIR were conducted for each year in DWRSIM's period of hydrologic record because SWP water supplies vary from year to year. The results of the water supply analyses are presented below both in graphical form over the entire period of record (see Figures 3-2 through 3-13 in the subsequent sections), and in tabular form showing SWP supplies under selected hydrologic conditions (see Tables 3-3 through 3-8 in the subsequent sections). The selected hydrologic conditions are: average year, single dry year, and multiple dry year (for further definitions, see section 3.1.1.2, Hydrologic Conditions).

The graph of supplies available over DWRSIM's entire hydrologic record are presented as probability of exceedance curves. These curves show the probability of supplies being greater than or equal to specific quantities. For an explanation of how to interpret these graphs, refer to the sidebar in section 2.2.

3.2.1 Without Monterey Amendment

Wheeler Ridge-Maricopa Water Storage District

Table 3-3 provides the results of the analysis of WRMWSD's SWP Table A supply for the Without Monterey Amendment allocation scenario, under selected hydrologic conditions, and based on both the existing and 2020 conditions DWRSIM model runs.

Figure 3-2 presents the results of the analysis of WRMWSD's SWP Table A supply under the Without Monterey Amendment allocation scenario, based on the existing conditions DWRSIM model run. Figure 3-3 presents the results of this same analysis, based on the 2020 conditions DWRSIM run.

Table 3-3. WRMWSD SWP Table A Supply at Existing and 2020 SWP Demand Conditions, Without Monterey Amendment
(all values in AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year*[3]
Existing SWP Demand Conditions[1]	Without the Project	238,088	189,700	0	79,700
	With the Project	197,088	157,000	0	65,900
	Difference[4]	***41,000***	***32,700***	***0***	***13,700***
2020 SWP Demand Conditions[2]	Without the Project	238,088	165,300	42,200	98,100
	With the Project	197,088	136,900	35,000	81,200
	Difference[4]	***41,000***	***28,500***	***7,300***	***16,900***

Note: Supplies are rounded to the nearest 100 AF. Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771.
2. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
3. Multiple dry year period supplies shown are average annual supplies over the four-year period.
4. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.

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Table 3-4 provides the results of the analysis of CLWA's SWP Table A supply for the Without Monterey Amendment allocation scenario, under selected hydrologic conditions, and based on both the existing and 2020 conditions DWRSIM model runs.

Figure 3-4 presents the results of the analysis of CLWA's SWP Table A supply under the Without Monterey Amendment allocation scenario, based on the existing conditions DWRSIM model run. Figure 3-5 presents the results of this same analysis, based on the 2020 conditions DWRSIM run.

Table 3-4. CLWA SWP Table A Supply at Existing and 2020 SWP Demand Conditions, Without Monterey Amendment
(all values in AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year*[3]
Existing SWP Demand Conditions[1]	Without the Project	54,200	47,400	13,100	25,200
	With the Project	95,200	80,100	13,100	38,900
	Difference[4]	***41,000***	***32,700***	***0***	***13,700***
2020 SWP Demand Conditions[2]	Without the Project	54,200	43,500	12,400	23,300
	With the Project	95,200	72,000	19,600	40,200
	Difference[4]	***41,000***	***28,500***	***7,300***	***16,900***

Note: Supplies are rounded to the nearest 100 AF. Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771.
2. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
3. Multiple dry year period supplies shown are average annual supplies over the four-year period.
4. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.

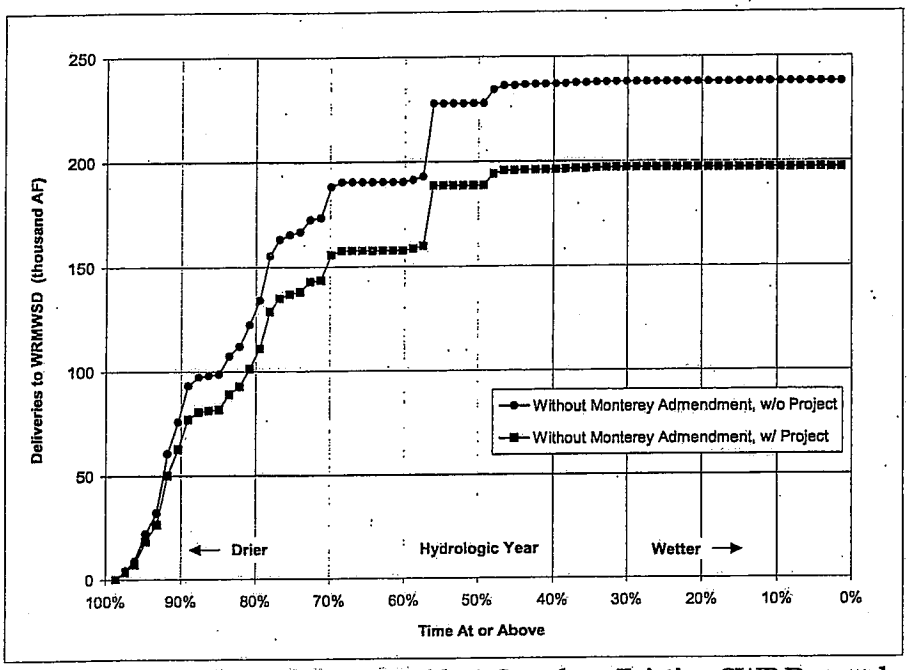

Figure 3-2. WRMWSD SWP Table A Supply at Existing SWP Demand Conditions, Without Monterey Amendment

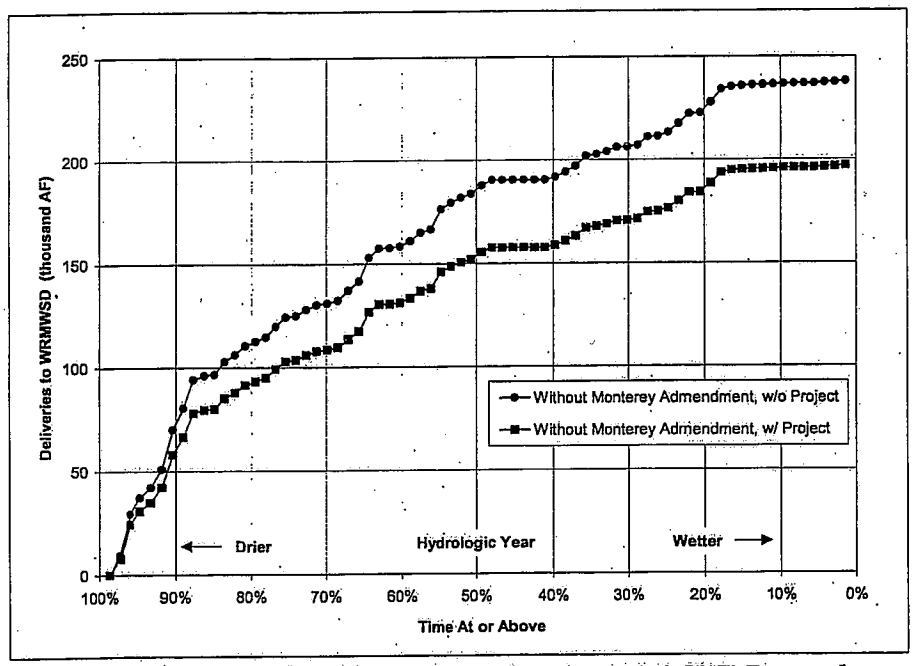

Figure 3-3. WRMWSD SWP Table A Supply at 2020 SWP Demand Conditions, Without Monterey Amendment

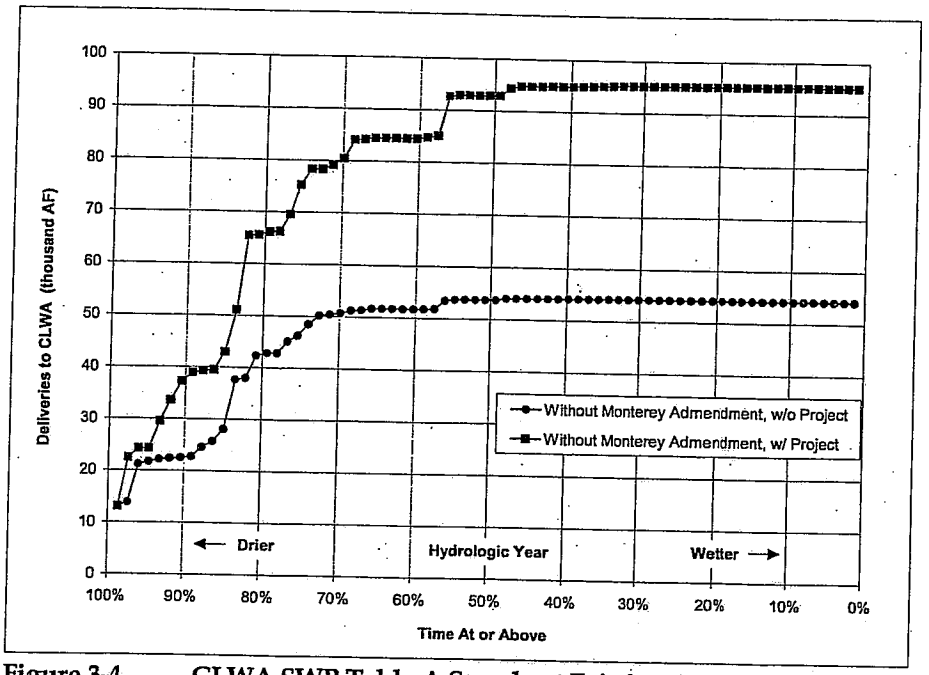

Figure 3-4. **CLWA SWP Table A Supply at Existing SWP Demand Conditions, Without Monterey Amendment**

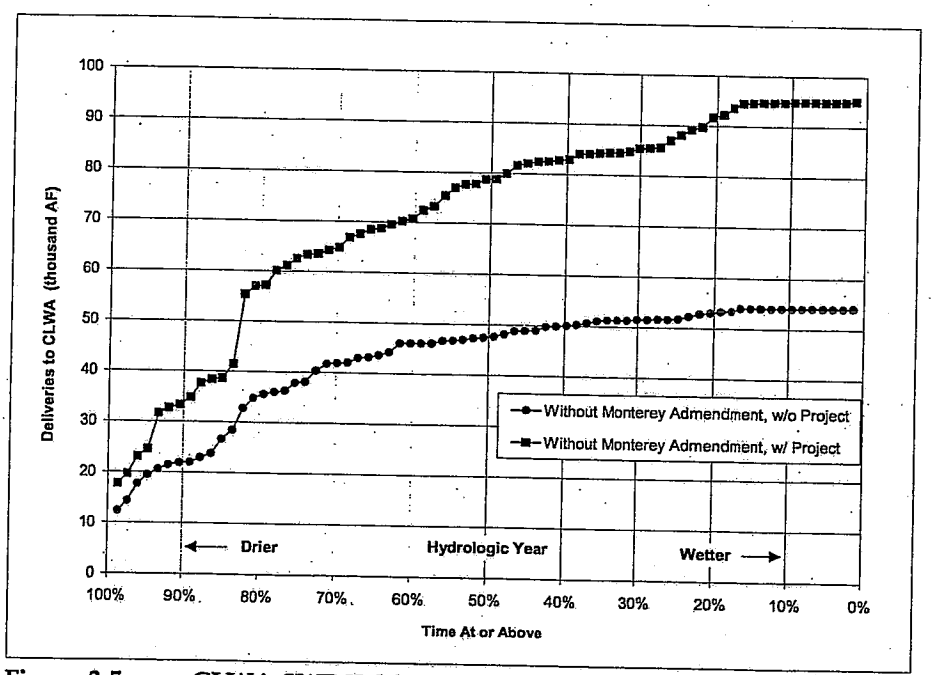

Figure 3-5. **CLWA SWP Table A Amount at 2020 SWP Demand Conditions, Without Monterey Amendment**

3.2.2 With Article 18(b) Implemented

Wheeler Ridge-Maricopa Water Storage District

Table 3-5 provides the results of the analysis of WRMWSD's SWP Table A supply for the With Article 18(b) Implemented allocation scenarios 1 and 2, under selected hydrologic conditions, and based on both the existing and 2020 conditions DWRSIM model runs.

Figure 3-6 presents the results of the analysis of WRMWSD's SWP Table A supply under the With Article 18(b) Implemented allocation scenarios 1 and 2, based on the existing conditions DWRSIM model run. Figure 3-7 presents the results of this same analysis, based on the 2020 conditions DWRSIM run.

Note that under the With Article 18(b) Implemented allocation scenarios, the supplies shown in the figures and table are the total of both Table A supplies and scheduled surplus water supplies.

Table 3-5. WRMWSD SWP Table A and Scheduled Surplus Supply at Existing and 2020 SWP Demand Conditions, With Article 18(b) Implemented
(all values in AF)

		Table A Amount[5]	*Average Year*	*Single Dry Year*	*Multiple Dry Year*[6]
		Scenario 1[1]			
Existing SWP Demand Conditions[3]	Without the Project	113,800	204,800	11,500	100,600
	With the Project	94,200	169,500	9,500	83,200
	Difference[7]	***19,600***	***35,300***	***2,000***	***17,300***
2020 SWP Demand Conditions[4]	Without the Project	113,800	202,900	12,300	99,300
	With the Project	94,200	168,000	10,200	82,200
	Difference[7]	***19,600***	***34,900***	***2,100***	***17,100***
		Scenario 2[2]			
Existing SWP Demand Conditions[3]	Without the Project	142,200	195,200	1,000	79,200
	With the Project	117,700	161,600	900	65,500
	Difference[7]	***24,500***	***33,600***	***200***	***13,600***
2020 SWP Demand Conditions[4]	Without the Project	142,200	180,700	2,000	76,500
	With the Project	117,700	149,600	1,700	63,300
	Difference[7]	***24,500***	***31,100***	***300***	***13,200***

Note: Supplies are rounded to the nearest 100 AF. Numbers may not add due to rounding.

1. Scenario 1 assumptions: SWP reduced minimum project yield is 2.0 million AF, and scheduled deliveries above reduced minim project yield are allocated based on priority for agricultural use and groundwater replenishment.
2. Scenario 2 assumptions: SWP reduced minimum project yield is 2.5 million AF, and scheduled deliveries above reduced minimum project yield are allocated in proportion to Table A Amounts.
3. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771.
4. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
5. The Table A Amounts shown are estimates of WRMWSD's reduced Table A Amount, based on its proportionate share of the reduced minimum project yield.
6. Multiple dry year period supplies shown are average annual supplies over the four-year period.
7. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.

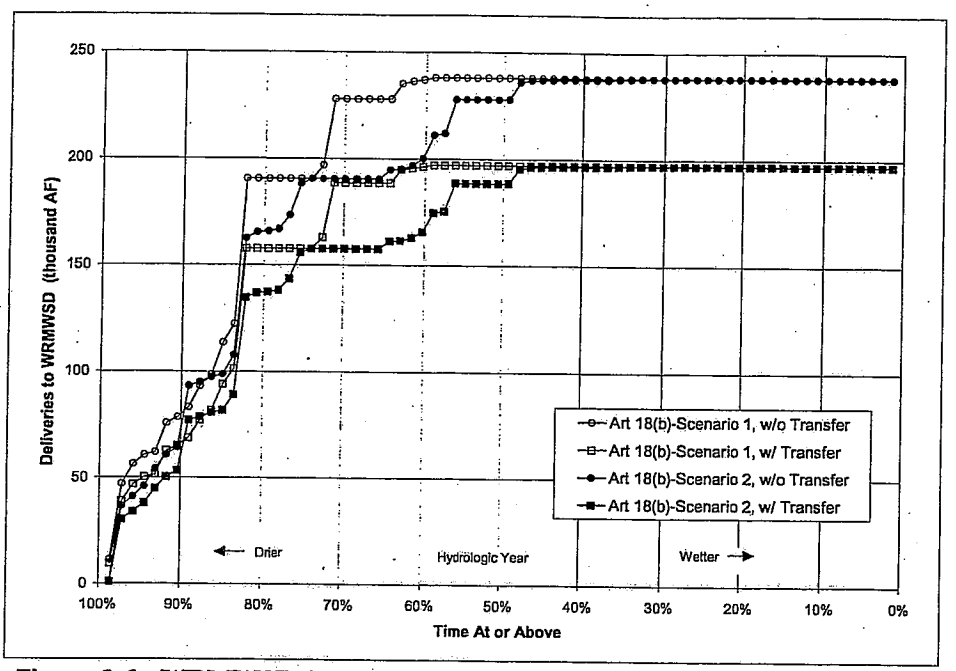

Figure 3-6. WRMWSD SWP Table A and Scheduled Surplus Supply at Existing SWP Demand Conditions, With Article 18(b) Implemented

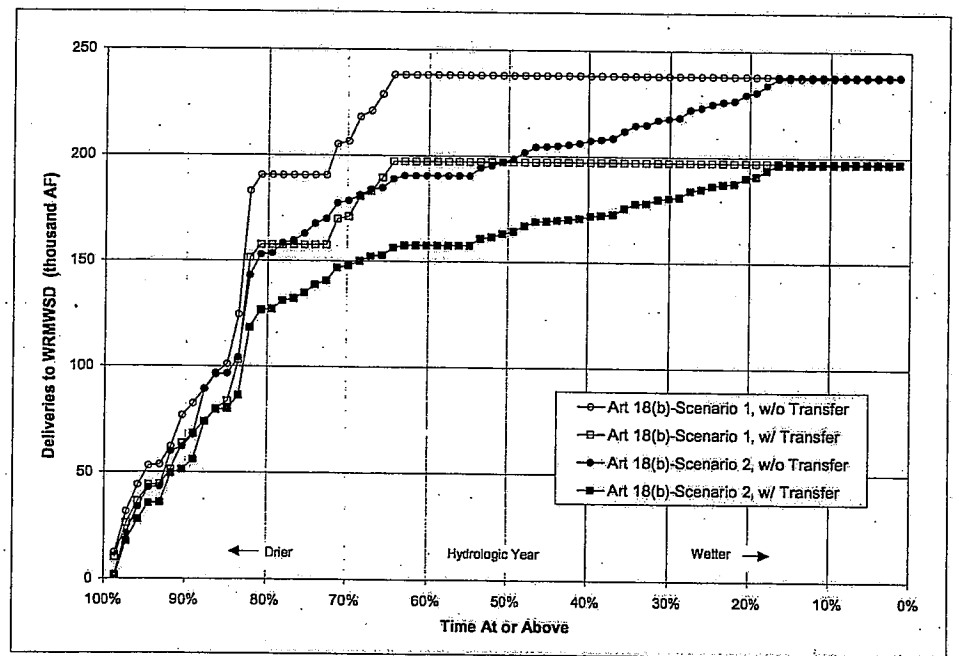

Figure 3-7. WRMWSD SWP Table A and Scheduled Surplus Supply at 2020 SWP Demand Conditions, With Article 18(b) Implemented

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Table 3-6 provides the results of the analysis of CLWA's SWP Table A supply for the With Article 18(b) Implemented allocation scenarios 1 and 2, under selected hydrologic conditions, and based on both the existing and 2020 conditions DWRSIM model runs.

Figure 3-8 presents the results of the analysis of CLWA's SWP Table A supply under the With Article 18(b) Implemented allocation scenarios 1 and 2, based on the existing conditions DWRSIM model run. Figure 3-9 presents the results of this same analysis, based on the 2020 conditions DWRSIM run.

Note that under the With Article 18(b) Implemented allocation scenarios, the supplies shown in the figures and table are the total of both Table A supplies and scheduled surplus water supplies.

Table 3-6. CLWA SWP Table A and Scheduled Surplus Supply at Existing and 2020 SWP Demand Conditions, With Article 18(b) Implemented

(all values in AF)

		Table A Amount[5]	*Average Year*	*Single Dry Year*	*Multiple Dry Year*[6]
		Scenario 1[1]			
Existing SWP Demand Conditions[3]	Without the Project	25,900	46,400	12,900	24,400
	With the Project	45,500	81,700	14,900	41,700
	Difference[7]	***19,600***	***35,300***	***2,000***	***17,300***
2020 SWP Demand Conditions[4]	Without the Project	25,900	43,000	12,800	23,300
	With the Project	45,500	78,000	15,000	40,400
	Difference[7]	***19,600***	***34,900***	***2,100***	***17,100***
		Scenario 2[2]			
Existing SWP Demand Conditions[3]	Without the Project	32,400	46,600	13,100	24,400
	With the Project	56,900	80,200	13,200	38,100
	Difference[7]	***24,500***	***33,600***	***200***	***13,600***
2020 SWP Demand Conditions[4]	Without the Project	32,400	43,000	13,000	23,700
	With the Project	56,900	74,100	13,300	36,900
	Difference[7]	***24,500***	***31,100***	***300***	***13,200***

Note: Supplies are rounded to the nearest 100 AF. Numbers may not add due to rounding.

1. Scenario 1 assumptions: SWP reduced minimum project yield is 2.0 million AF, and scheduled deliveries above reduced minim project yield are allocated based on priority for agricultural use and groundwater replenishment.
2. Scenario 2 assumptions: SWP reduced minimum project yield is 2.5 million AF, and scheduled deliveries above reduced minimum project yield are allocated in proportion to Table A Amounts.
3. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771.
4. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
5. The Table A Amounts shown are estimates of CLWA's reduced Table A Amount, based on its proportionate share of the reduced minimum project yield.
6. Multiple dry year period supplies shown are average annual supplies over the four-year period.
7. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.

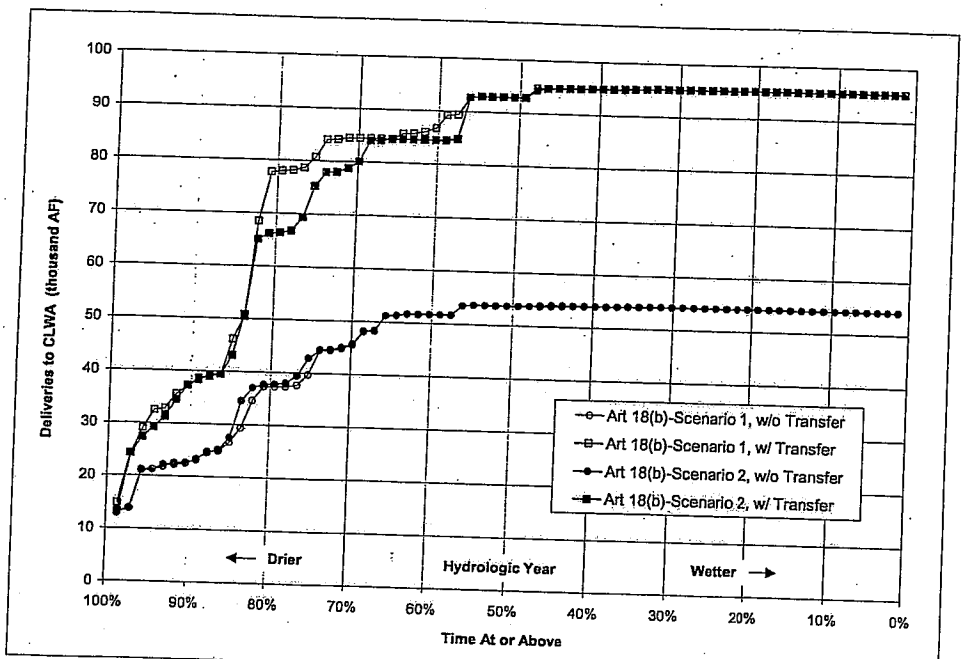

Figure 3-8. CLWA SWP Table A and Scheduled Surplus Supply at Existing SWP Demand Conditions, With Article 18(b) Implemented

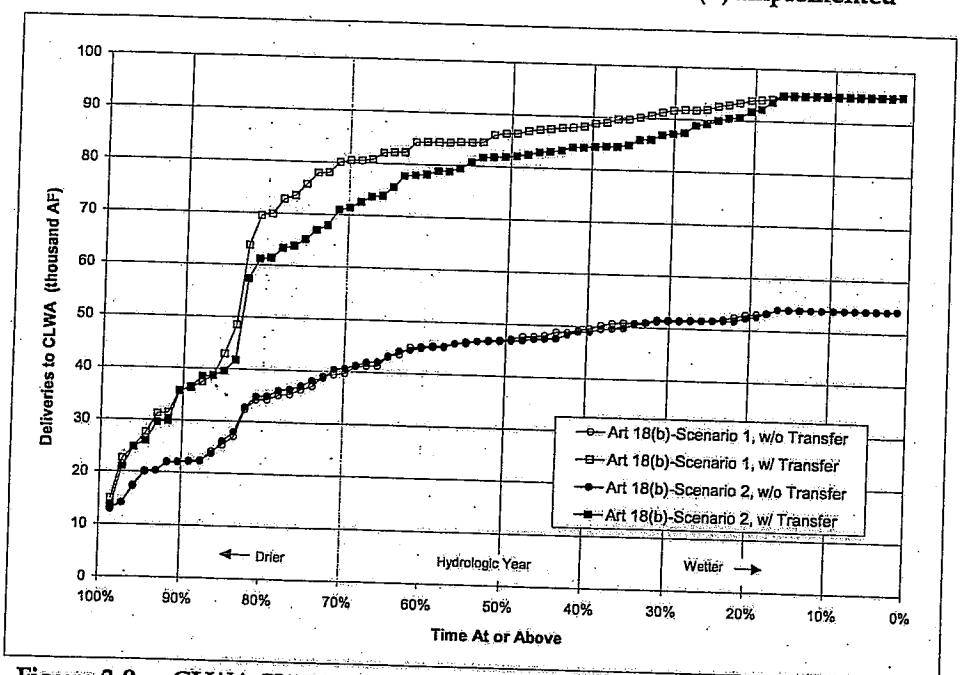

Figure 3-9. CLWA SWP Table A and Scheduled Surplus Supply at 2020 SWP Demand Conditions, With Article 18(b) Implemented

3.2.3 With Monterey Amendment

Wheeler Ridge-Maricopa Water Storage District

Table 3-7 provides the results of the analysis of WRMWSD's SWP Table A supply for the With Monterey Amendment allocation scenario, under selected hydrologic conditions, and based on both the existing and 2020 conditions DWRSIM model runs.

Figure 3-10 presents the results of the analysis of WRMWSD's SWP Table A supply under the With Monterey Amendment allocation scenario, based on the existing conditions DWRSIM model run. Figure 3-11 presents the results of this same analysis, based on the 2020 conditions DWRSIM run.

Table 3-7. WRMWSD SWP Table A Supply at Existing and 2020 SWP Demand Conditions, With Monterey Amendment
(all values in AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year*[3]
Existing SWP Demand Conditions[1]	Without the Project	238,088	199,900	53,300	105,300
	With the Project	197,088	165,500	44,100	87,100
	Difference[4]	***41,000***	***34,400***	***9,200***	***18,100***
2020 SWP Demand Conditions[2]	Without the Project	238,088	185,700	53,500	102,200
	With the Project	197,088	153,800	44,300	84,600
	Difference[4]	***41,000***	***32,000***	***9,200***	***17,600***

Note: Supplies are rounded to the nearest 100 AF. Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771.
2. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
3. Multiple dry year period supplies shown are average annual supplies over the four-year period.
4. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.

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Table 3-8 provides the results of the analysis of CLWA's SWP Table A supply for the With Monterey Amendment allocation scenario, under selected hydrologic conditions, and based on both the existing and 2020 conditions DWRSIM model runs.

Figure 3-12 presents the results of the analysis of CLWA's SWP Table A supply under the With Monterey Amendment allocation scenario, based on the existing conditions DWRSIM model run. Figure 3-13 presents the results of this same analysis, based on the 2020 conditions DWRSIM run.

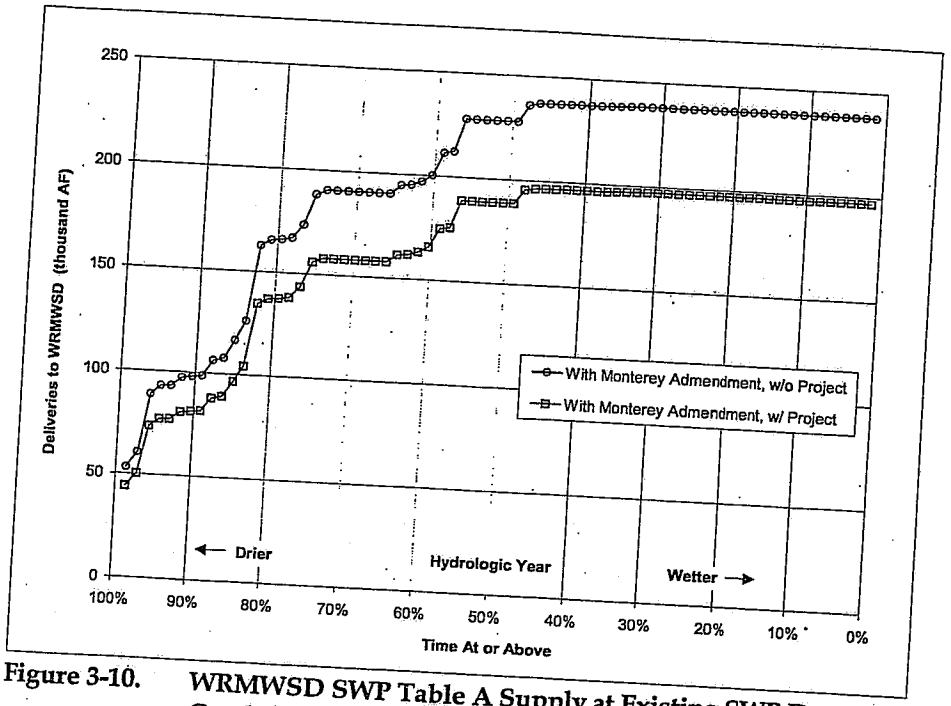

Figure 3-10. **WRMWSD SWP Table A Supply at Existing SWP Demand Conditions, With Monterey Amendment**

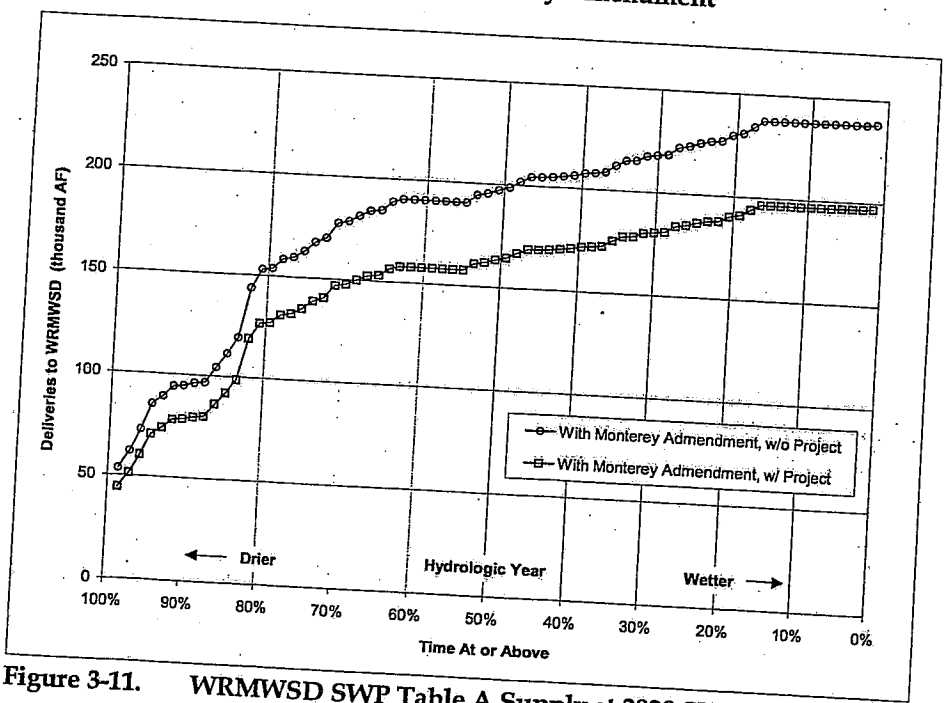

Figure 3-11. **WRMWSD SWP Table A Supply at 2020 SWP Demand Conditions, With Monterey Amendment**

Table 3-8. CLWA SWP Table A Supply at Existing and 2020 SWP Demand Conditions, With Monterey Amendment
(all values in AF)

		Table A Amount	*Average Year*	*Single Dry Year*	*Multiple Dry Year*[3]
Existing SWP Demand Conditions[1]	Without the Project	54,200	46,500	12,100	24,000
	With the Project	95,200	80,900	21,300	42,100
	Difference[4]	***41,000***	***34,400***	***9,200***	***18,100***
2020 SWP Demand Conditions[2]	Without the Project	54,200	42,900	12,200	23,300
	With the Project	95,200	74,900	21,400	40,900
	Difference[4]	***41,000***	***32,000***	***9,200***	***17,600***

Note: Supplies are rounded to the nearest 100 AF. Numbers may not add due to rounding.
1. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771.
2. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.
3. Multiple dry year period supplies shown are average annual supplies over the four-year period.
4. Supplies shown are the amount of water attributable to the 41,000 AF of Table A Amount.

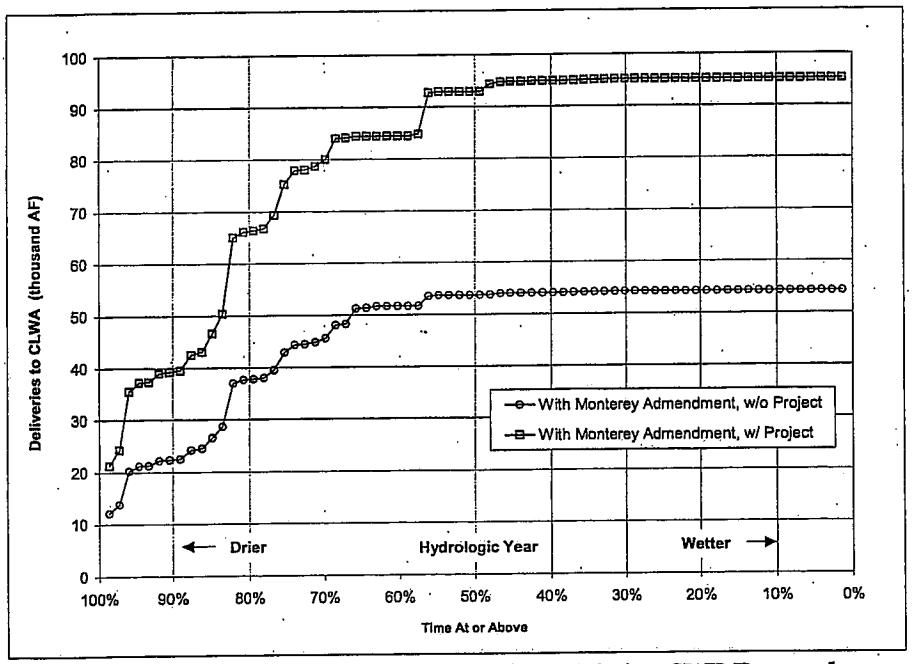

Figure 3-12. CLWA SWP Table A Supply at Existing SWP Demand Conditions, With Monterey Amendment

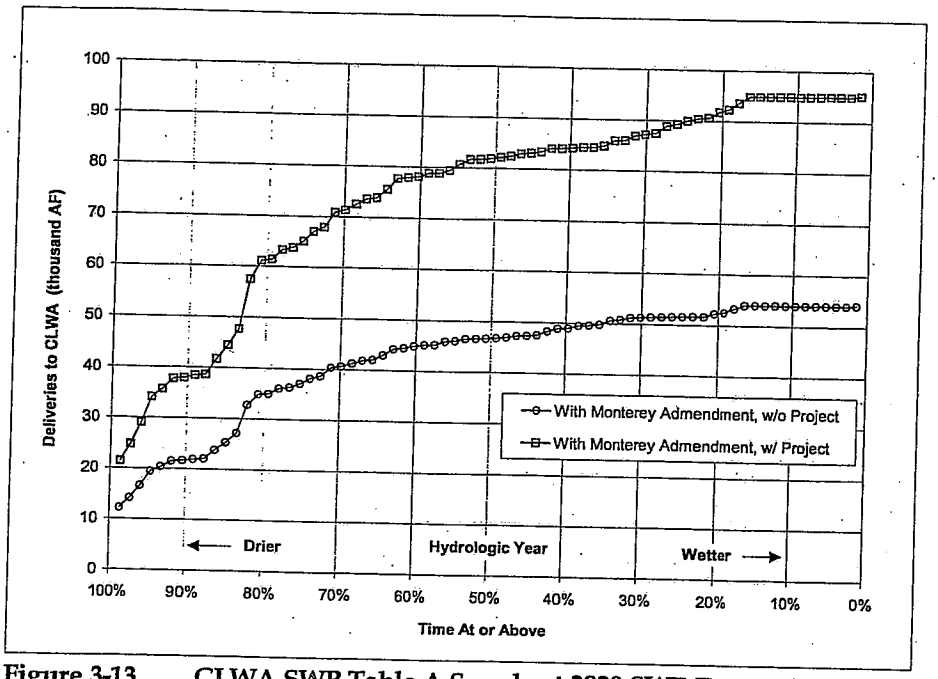

Figure 3-13. **CLWA SWP Table A Supply at 2020 SWP Demand Conditions, With Monterey Amendment**

4.0 SAN LUIS RESERVOIR STORAGE ANALYSIS

4.1 ANALYSIS METHODOLOGY AND ASSUMPTIONS

The San Luis Reservoir storage analysis shows the potential impacts resulting from implementation of the Project to SWP storage in San Luis Reservoir.

4.1.1 Background

As was noted previously, the total amount of SWP supply available in a given year is determined by that year's hydrology, the amount of storage in SWP reservoirs at the beginning of the year, and the regulatory and operational constraints that govern Delta and SWP facility operations. Since the location of use of SWP water south of the Delta is not a factor in determining the amount of SWP supply available, the Project would not result in a change in the total amount of SWP supply available for delivery to SWP Contractors. Therefore, there would be no change in the total amount of water diverted from the Delta.

The Project would, however, result in a change in the end use of the water associated with the 41,000 AF of Table A Amount from agricultural use to M&I use. Typically, agricultural water users use proportionately more of their annual water supply during the heavy irrigation months of the late spring and summer than do urban water users, and proportionately less of their supply than urban users during the remainder of the year. In the case of WRMWSD and CLWA, this difference in delivery during the year would result in a net reduction in deliveries of water associated with the 41,000 AF Table A Amount in May through September, and a net increase in deliveries during the remaining months of the year (October through April).

This net change in the timing of deliveries would require a slight change in SWP operations south of the Delta. Generally, the SWP operates to divert as much water from the Delta as is available under prevailing hydrologic conditions, within the water quality standards and operational constraints that govern Delta operations. This is true regardless of the timing of deliveries south of the Delta since when Delta diversions exceed downstream deliveries, that excess is stored in San Luis Reservoir for delivery later in the year. The general operation at San Luis Reservoir is to try to fill the reservoir during the high runoff months of the winter and early spring, and then release the stored water in meeting Contractor demands during the higher-demand summer and fall months to supplement the more limited diversions from the Delta during that period. Since Delta diversions are generally limited by either water availability or operational/ regulatory constraints, the change in the timing of deliveries of the 41,000 AF of Table A due to the Project would primarily result in changes in San Luis Reservoir storage.

4.1.2 Overview of Analysis

The analysis of the potential impact of the Project on storage in San Luis Reservoir consisted of a two-part analysis:

1. *Monthly Delivery Distribution* - The first part of the analysis was an assessment of the difference in monthly SWP deliveries to WRMWSD and CLWA. This analysis was

conducted using the annual supplies to WRMWSD and CLWA calculated in the water supply analysis described in section 3.0, and using the monthly distributions of deliveries to WRMWSD and CLWA for each year from the two DWRSIM model studies described in section 2.1.

2. *San Luis Reservoir Storage* - The second part of the analysis was an estimate of the potential impacts of the Project on storage at San Luis Reservoir. This analysis was conducted using the difference in monthly deliveries to WRMWSD and CLWA calculated in the first part of the analysis, and using San Luis Reservoir storage and aqueduct flow data from the two DWRSIM model studies.

This analysis was conducted only for water supplies allocated under the With Monterey Amendment allocation scenario. Since the amount of the water supply associated with the Project's 41,000 AF of Table A Amount is not significantly different among the three allocation scenarios, and the relative timing of deliveries would not change among the allocation scenarios, it was concluded that the storage changes under the Without Monterey Amendment and With Article 18(b) Implemented scenarios would be similar in magnitude and timing to those analyzed in the With Monterey Amendment scenario. Given this, as well as the small (less than two percent) changes in San Luis Reservoir storage determined in the analysis conducted, analysis of the other two allocation scenarios was deemed unnecessary.

Specific methodology and assumptions regarding this two-part analysis are described in sections 4.1.2.1 and 4.1.2.2 below.

4.1.2.1 Monthly Delivery Distribution

Methodology

1. Model output of monthly deliveries to WRMWSD and CLWA were taken from the two DWRSIM studies described in section 2.1, for each of the 73 hydrologic years. From this data, the monthly percent distribution of annual deliveries for both WRMWSD and CLWA was calculated for each of the 73 hydrologic years. For CLWA, the distribution calculated was for its M&I Table A delivered from Castaic Lake.

2. Monthly deliveries to WRMWSD and CLWA were then calculated for each hydrologic year by multiplying the monthly distribution percentages from step 1 by the annual deliveries calculated for WRMWSD and CLWA in the SWP water supply analysis described in section 3.0 above, for water supplies allocated under the With Monterey Amendment allocation scenario.

3. From the 73 years of monthly deliveries in step 2, the average and the expected range of deliveries to WRMWSD and CLWA were determined by month.

Assumptions

1. The distribution of deliveries to WRMWSD and CLWA in any year would not change with the Project (i.e., the reduction/increase in annual deliveries in any year would proportionately reduce/increase monthly deliveries in that year).

4.1.2.2 *San Luis Reservoir Storage*

Methodology

1. Model output of monthly San Luis Reservoir-related data for the 73 years of hydrologic data were taken from the two DWRSIM runs, including: SWP San Luis Reservoir storage, aqueduct flows just upstream and downstream of San Luis Reservoir, and diversions to and releases from San Luis Reservoir.

2. San Luis Reservoir was re-operated each month of the 73 hydrologic years, based on the output in step 1 and the change in deliveries to WRMWSD and CLWA resulting from the Project.

3. From the 73 years of monthly storage from step 2, the average storage and the expected range of the change in storage were determined by month.

Assumptions

1. Exports from the Delta (and therefore, the flow in the aqueduct upstream of San Luis Reservoir) will not change with the transfer.

2. Demands downstream of San Luis Reservoir (to meet Contractor deliveries and operational requirements such as aqueduct losses and terminal reservoir refilling) change with the transfer only by the difference in deliveries to WRMWSD and CLWA.

3. Water is diverted from the aqueduct into San Luis Reservoir when exports from the Delta exceed the demand downstream of San Luis, and water is released from San Luis when Delta exports are less than demand downstream of San Luis.

4. Losses at San Luis Reservoir will not change with the slight change in storage resulting from the transfer.

4.2 ANALYSIS RESULTS

As was described previously in section 4.1, the San Luis Reservoir storage analysis was conducted only for water supplies allocated under the With Monterey Amendment allocation scenario. While the results presented below are specifically for that allocation scenario, they are considered indicative of results that would occur under the Without Monterey Amendment and With Article 18(b) Implemented scenarios.

4.2.1 Monthly Delivery Distribution

The results of the monthly delivery distribution analysis are shown on Figures 4-1 and Figure 4-2, and in Tables 4-1 through 4-3. The average monthly changes in SWP Table A deliveries that would result from the Project, due to the difference in the timing of deliveries during the year between WRMWSD and CLWA, are shown on Figure 4-1 for existing SWP demand conditions, and on Figure 4-2 for 2020 demand conditions. These results are summarized in Table 4-1. More detailed results showing the net changes in monthly SWP Table A deliveries for the entire

hydrologic period are provided in Table 4-2 for existing SWP demand conditions, and in Table 4-3 for 2020 SWP demand conditions.

Table 4-1. Average Change in SWP Table A Deliveries Resulting From the Project at Existing and 2020 SWP Demand Conditions, With Monterey Amendment
(all values in thousand AF, unless otherwise noted)

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Total*
Existing SWP Demand Conditions													
WRMWSD	-0.4	-1.0	-1.5	-2.7	-4.0	-6.3	-5.9	-6.3	-3.7	-0.8	-0.7	-1.0	-34.4
CLWA	1.7	1.9	2.3	2.8	3.5	3.9	3.9	3.9	3.5	2.8	2.1	2.1	34.4
Net Change	*1.2*	*0.8*	*0.8*	*0.1*	*-0.5*	*-2.4*	*-2.1*	*-2.5*	*-0.1*	*2.0*	*1.4*	*1.1*	*0.0*
Net Change (cfs)	*20*	*15*	*14*	*2*	*-8*	*-41*	*-34*	*-40*	*-2*	*33*	*23*	*18*	*0*
2020 SWP Demand Conditions													
WRMWSD	-0.4	-0.9	-1.3	-2.5	-3.8	-5.9	-5.5	-5.9	-3.4	-0.7	-0.7	-0.9	-32.0
CLWA	1.4	1.7	2.1	2.6	3.3	3.6	3.6	3.6	3.3	2.6	2.0	2.0	32.0
Net Change	*1.1*	*0.8*	*0.8*	*0.1*	*-0.5*	*-2.3*	*-1.9*	*-2.3*	*-0.1*	*1.9*	*1.3*	*1.1*	*0.0*
Net Change (cfs)	*18*	*14*	*12*	*2*	*-7*	*-38*	*-31*	*-37*	*-2*	*31*	*22*	*18*	*0*

Note: Supplies are rounded to the nearest 0.1 thousand AF. Number may note add due to rounding.

4.2.2 San Luis Reservoir Storage

The results of the storage analysis are presented on Figures 4-3 and 4-4. The existing San Luis Reservoir operation, in combination with the net change in the timing of deliveries during the year between WRMWSD and CLWA, would result in an increase in storage at San Luis Reservoir from July through November, and a decrease in storage during the remainder of the year. As shown on Figure 4-3, the magnitude of the storage increase would be greatest in August and September, averaging approximately 4,500 AF at existing SWP demand conditions and approximately 4,200 AF at 2020 SWP demand conditions. The magnitude of the reduction in storage would be greatest in March and April, averaging approximately 3,000 AF at existing SWP demand conditions and approximately 2,700 AF at 2020 SWP demand conditions. As shown on Figure 4-4, the change in storage at San Luis Reservoir resulting from the Project would represent a small portion of the total average storage in the SWP share of San Luis Reservoir (SWP capacity is over one million AF), reflecting storage changes of less than 0.5 percent of average storage in most months and not more than two percent in any month.

More detailed results showing the net changes in monthly San Luis Reservoir storage for the entire hydrologic period are provided in Table 4-4 for existing SWP demand conditions, and in Table 4-5 for 2020 SWP demand conditions.

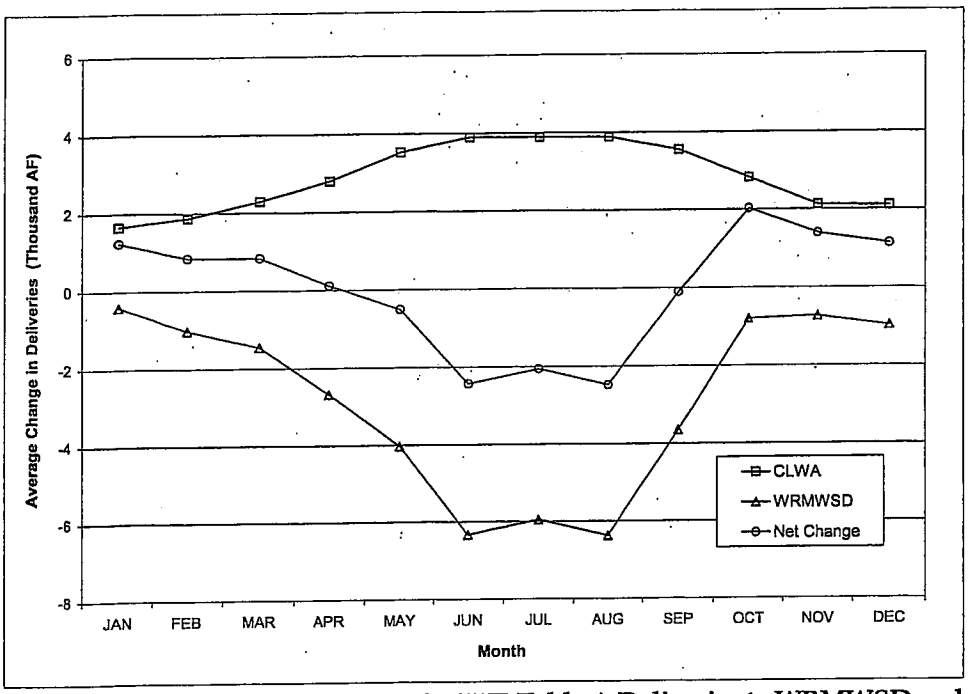

Figure 4-1. **Average Change in SWP Table A Deliveries to WRMWSD and CLWA at Existing SWP Demand Conditions**

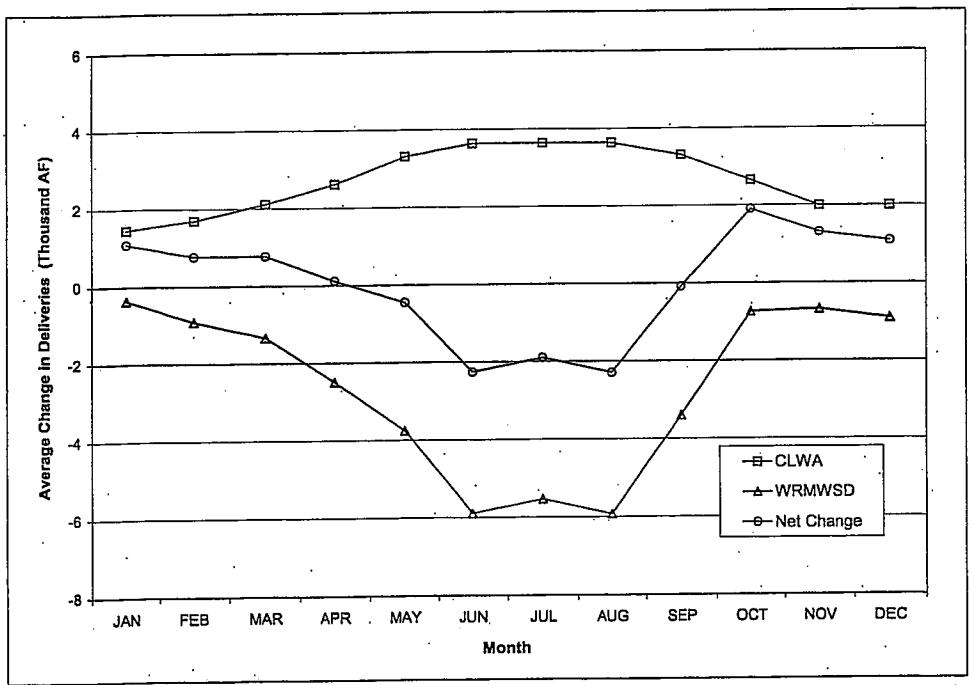

Figure 4-2. **Average Change in SWP Table A Deliveries to WRMWSD and CLWA at 2020 SWP Demand Conditions**

Table 4-2. Net Change in SWP Table A Deliveries Resulting From the Project at Existing SWP Demand Conditions, With Monterey Amendment

(all values in thousand AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1922	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1923	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1924	0.7	0.5	0.5	0.1	-0.3	-1.4	-1.2	-1.4	-0.1	1.2	0.8	0.7	0.0
1925	0.5	0.3	0.5	0.1	-0.3	-1.3	-1.0	-1.3	-0.1	1.1	0.7	0.7	0.0
1926	0.5	0.5	0.8	0.2	-0.4	-2.3	-1.9	-2.3	0.0	2.1	1.4	1.2	0.0
1927	1.2	1.1	1.1	0.1	-0.6	-2.9	-2.4	-2.9	-0.1	2.4	1.6	1.4	0.0
1928	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1929	0.6	0.5	0.5	0.1	-0.3	-1.3	-1.1	-1.3	-0.1	1.1	0.7	0.6	0.0
1930	0.6	0.6	0.7	0.2	-0.4	-2.0	-1.7	-2.0	0.0	1.8	1.2	1.0	0.0
1931	0.6	0.4	0.4	0.0	-0.2	-1.1	-0.9	-1.1	0.0	0.9	0.7	0.5	0.0
1932	0.6	0.6	0.6	0.1	-0.3	-1.5	-1.3	-1.6	0.0	1.3	0.9	0.7	0.0
1933	0.5	0.4	0.3	0.1	-0.2	-1.2	-1.0	-1.2	0.0	1.0	0.7	0.6	0.0
1934	0.5	0.4	0.5	0.1	-0.2	-1.2	-1.0	-1.2	0.0	1.0	0.7	0.6	0.0
1935	0.5	0.5	0.6	0.3	-0.4	-2.8	-2.3	-2.8	0.1	2.7	1.9	1.6	0.0
1936	0.6	0.9	1.2	0.2	-0.5	-2.8	-2.3	-2.8	0.0	2.5	1.7	1.4	0.0
1937	0.9	0.8	1.1	0.2	-0.5	-2.7	-2.3	-2.8	-0.1	2.4	1.6	1.4	0.0
1938	1.7	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.9	-0.2	2.2	1.5	1.2	0.0
1939	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1940	0.5	0.6	1.2	0.2	-0.4	-2.7	-2.3	-2.8	0.0	2.6	1.7	1.5	0.0
1941	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1942	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1943	1.7	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.9	-0.2	2.2	1.5	1.2	0.0
1944	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1945	1.7	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.4	1.6	1.3	0.0
1946	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1947	1.2	0.7	0.8	0.2	-0.5	-2.8	-2.4	-2.9	0.0	2.5	1.7	1.5	0.0
1948	0.5	0.4	0.3	0.1	-0.3	-2.4	-1.9	-2.4	0.1	2.5	1.7	1.4	0.0
1949	0.8	0.5	0.6	0.1	-0.4	-2.0	-1.7	-2.0	-0.1	1.8	1.2	1.0	0.0
1950	0.5	0.5	0.7	0.3	-0.3	-2.3	-1.9	-2.3	0.0	2.2	1.5	1.2	0.0
1951	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1952	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1953	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1954	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1955	1.1	0.8	0.7	0.0	-0.5	-2.0	-1.7	-2.0	-0.1	1.6	1.1	0.9	0.0
1956	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1957	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1958	1.7	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.9	-0.2	2.2	1.5	1.2	0.0
1959	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1960	0.5	0.5	0.7	0.2	-0.3	-2.3	-1.9	-2.3	0.1	2.2	1.5	1.2	0.0
1961	0.8	0.6	0.6	0.1	-0.3	-2.0	-1.7	-2.0	-0.1	1.8	1.2	1.0	0.0
1962	0.5	0.4	0.9	0.3	-0.4	-2.8	-2.3	-2.8	0.1	2.7	1.9	1.5	0.0
1963	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1964	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1965	1.4	1.1	0.9	0.1	-0.6	-2.6	-2.2	-2.6	-0.2	2.1	1.4	1.2	0.0
1966	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1967	1.7	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.9	-0.2	2.2	1.5	1.2	0.0
1968	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1969	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1970	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1971	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1972	1.8	1.1	1.0	0.1	-0.6	-2.9	-2.4	-2.9	-0.2	2.3	1.6	1.3	0.0
1973	1.1	1.2	1.1	0.2	-0.6	-2.9	-2.4	-2.9	-0.1	2.4	1.7	1.3	0.0
1974	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1975	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1976	1.8	1.0	0.9	0.0	-0.6	-2.7	-2.2	-2.7	-0.2	2.1	1.4	1.2	0.0
1977	0.4	0.2	0.2	0.0	-0.1	-0.6	-0.6	-0.7	-0.1	0.5	0.4	0.3	0.0
1978	0.3	0.5	1.0	0.2	-0.3	-2.2	-1.8	-2.2	0.0	2.0	1.4	1.2	0.0
1979	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1980	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1981	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1982	1.7	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.9	-0.2	2.2	1.5	1.2	0.0
1983	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1984	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1985	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1986	0.5	0.4	1.0	0.2	-0.4	-2.2	-1.9	-2.3	0.0	2.1	1.4	1.2	0.0
1987	1.3	0.8	0.8	0.1	-0.5	-2.4	-2.0	-2.4	-0.1	2.0	1.4	1.1	0.0
1988	0.5	0.5	0.4	0.0	-0.3	-1.1	-0.9	-1.1	-0.1	0.9	0.6	0.5	0.0
1989	0.5	0.4	0.3	0.2	-0.3	-2.0	-1.7	-2.1	0.1	2.0	1.4	1.2	0.0
1990	0.5	0.4	0.4	0.1	-0.2	-1.2	-1.0	-1.2	-0.1	1.0	0.7	0.6	0.0
1991	0.4	0.2	0.3	0.0	-0.2	-0.7	-0.6	-0.8	0.0	0.6	0.4	0.3	0.0
1992	0.4	0.3	0.3	0.1	-0.2	-1.1	-0.9	-1.1	0.0	1.0	0.7	0.6	0.0
1993	0.6	1.2	1.1	0.2	-0.5	-2.8	-2.4	-2.9	0.0	2.4	1.7	1.4	0.0
AVG	1.2	0.8	0.8	0.1	-0.5	-2.4	-2.1	-2.5	-0.1	2.0	1.4	1.1	0.0
MIN	0.3	0.2	0.2	0.0	-0.7	-2.9	-2.5	-3.0	-0.2	0.5	0.4	0.3	0.0
MAX	1.8	1.2	1.2	0.3	-0.1	-0.6	-0.6	-0.7	0.1	2.7	1.9	1.6	0.0

Table 4-3. Net Change in SWP Table A Deliveries Resulting From the Project at 2020 SWP Demand Conditions, With Monterey Amendment

(all values in thousand AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1922	1.2	0.8	1.1	0.2	-0.6	-2.9	-2.4	-2.9	-0.1	2.5	1.7	1.4	0.0
1923	1.7	1.1	1.0	0.1	-0.6	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1924	0.5	0.3	0.3	0.0	-0.2	-0.9	-0.8	-0.9	0.0	0.7	0.5	0.4	0.0
1925	0.5	0.3	0.5	0.1	-0.2	-1.3	-1.1	-1.4	0.0	1.2	0.8	0.7	0.0
1926	0.6	0.5	0.7	0.1	-0.3	-1.9	-1.6	-1.9	-0.1	1.7	1.2	1.0	0.0
1927	1.1	0.9	1.1	0.2	-0.5	-2.9	-2.4	-2.9	-0.1	2.5	1.7	1.4	0.0
1928	1.3	0.9	0.9	0.1	-0.5	-2.4	-2.0	-2.4	-0.2	1.9	1.3	1.1	0.0
1929	0.7	0.5	0.5	0.1	-0.3	-1.3	-1.1	-1.3	-0.1	1.0	0.7	0.6	0.0
1930	0.6	0.7	0.7	0.1	-0.4	-1.9	-1.6	-1.9	0.0	1.7	1.1	0.9	0.0
1931	0.6	0.5	0.4	0.1	-0.3	-1.2	-1.0	-1.2	-0.1	1.0	0.7	0.5	0.0
1932	0.5	0.5	0.5	0.0	-0.3	-1.4	-1.2	-1.4	0.0	1.2	0.8	0.7	0.0
1933	0.5	0.4	0.4	0.0	-0.2	-1.2	-1.0	-1.2	-0.1	1.0	0.7	0.6	0.0
1934	0.6	0.4	0.5	0.1	-0.2	-1.2	-1.0	-1.2	-0.1	1.0	0.6	0.6	0.0
1935	0.5	0.5	0.5	0.2	-0.3	-2.4	-2.0	-2.5	0.1	2.4	1.7	1.4	0.0
1936	0.5	0.5	1.0	0.2	-0.4	-2.5	-2.0	-2.5	0.0	2.2	1.6	1.3	0.0
1937	0.5	0.4	0.7	0.2	-0.4	-2.2	-1.8	-2.2	0.0	2.0	1.4	1.2	0.0
1938	1.5	1.1	1.1	0.1	-0.6	-2.9	-2.5	-2.9	-0.2	2.3	1.6	1.4	0.0
1939	1.6	0.9	0.9	0.1	-0.6	-2.5	-2.1	-2.6	-0.2	2.0	1.4	1.1	0.0
1940	0.4	0.4	1.0	0.3	-0.4	-2.6	-2.2	-2.7	0.1	2.5	1.7	1.5	0.0
1941	0.9	0.9	0.9	0.1	-0.5	-2.3	-1.9	-2.3	-0.1	1.9	1.3	1.1	0.0
1942	1.8	1.1	1.0	0.1	-0.7	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1943	1.6	1.1	0.9	0.0	-0.6	-2.6	-2.2	-2.7	-0.2	2.0	1.4	1.1	0.0
1944	1.3	1.0	1.0	0.1	-0.6	-2.8	-2.4	-2.8	-0.1	2.4	1.6	1.3	0.0
1945	1.1	0.7	1.0	0.2	-0.5	-2.6	-2.2	-2.6	-0.1	2.3	1.5	1.3	0.0
1946	1.7	1.0	0.9	0.1	-0.6	-2.6	-2.2	-2.7	-0.2	2.1	1.4	1.2	0.0
1947	0.9	0.6	0.6	0.2	-0.4	-2.2	-1.8	-2.2	0.0	1.9	1.3	1.1	0.0
1948	0.5	0.4	0.3	0.1	-0.3	-2.1	-1.7	-2.1	0.1	2.1	1.5	1.2	0.0
1949	0.7	0.5	0.5	0.1	-0.3	-1.9	-1.5	-1.8	0.0	1.6	1.2	1.0	0.0
1950	0.5	0.5	0.7	0.2	-0.3	-2.1	-1.8	-2.1	0.0	2.0	1.4	1.1	0.0
1951	1.6	1.1	1.0	0.1	-0.6	-2.7	-2.3	-2.8	-0.2	2.2	1.5	1.2	0.0
1952	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1953	1.8	1.1	0.9	0.1	-0.6	-2.7	-2.3	-2.8	-0.2	2.1	1.4	1.2	0.0
1954	1.5	1.0	0.9	0.1	-0.6	-2.7	-2.3	-2.7	-0.2	2.2	1.5	1.2	0.0
1955	1.0	0.7	0.6	0.1	-0.4	-1.8	-1.5	-1.8	-0.1	1.4	1.0	0.8	0.0
1956	1.6	1.1	1.1	0.1	-0.6	-2.9	-2.4	-2.9	-0.2	2.3	1.6	1.3	0.0
1957	1.5	1.0	0.8	0.1	-0.6	-2.5	-2.1	-2.5	-0.2	1.9	1.3	1.1	0.0
1958	1.3	1.0	0.9	0.1	-0.6	-2.9	-2.5	-2.9	-0.1	2.5	1.7	1.4	0.0
1959	1.6	1.0	0.9	0.1	-0.6	-2.6	-2.2	-2.6	-0.2	2.0	1.4	1.1	0.0
1960	0.4	0.3	0.5	0.2	-0.2	-1.8	-1.5	-1.8	0.0	1.7	1.2	1.0	0.0
1961	0.7	0.6	0.6	0.1	-0.3	-2.0	-1.7	-2.0	0.0	1.7	1.2	1.0	0.0
1962	0.5	0.3	0.9	0.2	-0.4	-2.4	-2.0	-2.4	0.1	2.3	1.6	1.3	0.0
1963	1.5	1.0	0.9	0.1	-0.6	-2.9	-2.4	-2.9	-0.1	2.4	1.7	1.3	0.0
1964	1.5	1.0	0.8	0.1	-0.6	-2.4	-2.1	-2.5	-0.2	1.9	1.3	1.1	0.0
1965	1.4	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.2	1.9	1.3	1.0	0.0
1966	1.8	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.8	-0.2	2.2	1.5	1.2	0.0
1967	1.1	1.2	0.9	0.1	-0.6	-2.8	-2.4	-2.9	-0.1	2.4	1.7	1.4	0.0
1968	1.6	1.1	0.8	0.1	-0.6	-2.5	-2.2	-2.6	-0.2	2.0	1.4	1.1	0.0
1969	0.9	0.9	0.9	0.1	-0.5	-2.3	-1.9	-2.3	-0.1	1.9	1.3	1.1	0.0
1970	1.7	1.1	0.9	0.1	-0.6	-2.7	-2.3	-2.7	-0.2	2.1	1.4	1.2	0.0
1971	1.8	1.1	0.9	0.1	-0.6	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1972	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.3	-0.1	1.8	1.2	1.0	0.0
1973	1.2	1.0	0.9	0.1	-0.5	-2.6	-2.2	-2.7	-0.1	2.2	1.5	1.2	0.0
1974	1.8	1.1	0.9	0.1	-0.6	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1975	1.6	1.0	0.9	0.1	-0.6	-2.8	-2.3	-2.8	-0.2	2.3	1.5	1.3	0.0
1976	1.7	0.9	0.8	0.1	-0.6	-2.4	-2.1	-2.5	-0.2	1.9	1.3	1.0	0.0
1977	0.4	0.2	0.3	0.0	-0.2	-0.7	-0.5	-0.7	0.0	0.5	0.3	0.3	0.0
1978	0.3	0.4	0.4	0.3	-0.3	-2.1	-1.8	-2.2	0.1	2.1	1.5	1.2	0.0
1979	1.2	0.9	0.9	0.1	-0.5	-2.5	-2.1	-2.5	-0.1	2.1	1.4	1.1	0.0
1980	1.1	0.8	0.8	0.1	-0.5	-2.3	-2.0	-2.3	-0.1	1.9	1.3	1.1	0.0
1981	1.5	1.0	0.9	0.1	-0.6	-2.5	-2.1	-2.5	-0.2	2.0	1.4	1.1	0.0
1982	1.8	1.1	1.0	0.1	-0.6	-2.9	-2.5	-3.0	-0.2	2.3	1.6	1.3	0.0
1983	1.5	0.9	0.8	0.1	-0.5	-2.3	-2.0	-2.4	-0.1	1.9	1.3	1.0	0.0
1984	1.8	1.1	1.0	0.1	-0.6	-2.8	-2.4	-2.9	-0.2	2.3	1.5	1.3	0.0
1985	1.5	0.9	0.9	0.1	-0.6	-2.7	-2.3	-2.7	-0.1	2.3	1.5	1.3	0.0
1986	0.5	0.5	0.9	0.2	-0.4	-2.3	-1.9	-2.3	0.0	2.0	1.4	1.2	0.0
1987	1.1	0.7	0.7	0.1	-0.4	-2.1	-1.8	-2.1	-0.1	1.7	1.2	1.0	0.0
1988	0.6	0.5	0.4	0.0	-0.2	-1.1	-0.9	-1.1	-0.1	0.8	0.6	0.4	0.0
1989	0.5	0.3	0.3	0.2	-0.3	-2.0	-1.6	-2.0	0.1	2.0	1.3	1.1	0.0
1990	0.5	0.4	0.4	0.0	-0.2	-1.1	-1.0	-1.1	-0.1	1.0	0.7	0.5	0.0
1991	0.4	0.2	0.3	0.0	-0.2	-0.8	-0.6	-0.8	0.0	0.6	0.4	0.4	0.0
1992	0.4	0.2	0.3	0.1	-0.2	-1.1	-0.9	-1.1	0.0	1.0	0.7	0.5	0.0
1993	0.6	1.0	1.1	0.2	-0.5	-2.8	-2.4	-2.9	0.0	2.5	1.7	1.4	0.0
AVG	1.1	0.8	0.8	0.1	-0.5	-2.3	-1.9	-2.3	-0.1	1.9	1.3	1.1	0.0
MIN	0.3	0.2	0.3	0.0	-0.7	-2.9	-2.5	-3.0	-0.2	0.5	0.3	0.3	0.0
MAX	1.8	1.2	1.1	0.3	-0.2	-0.7	-0.5	-0.7	0.1	2.5	1.7	1.5	0.0

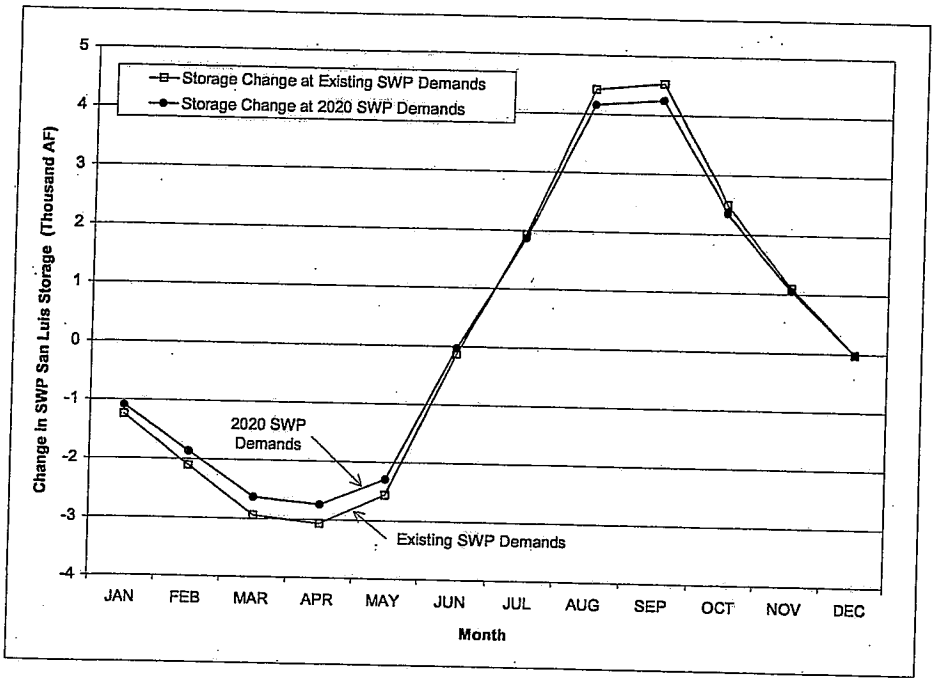

Figure 4-3. **Average Monthly Change in SWP San Luis Storage with the Project, With Monterey Amendment**

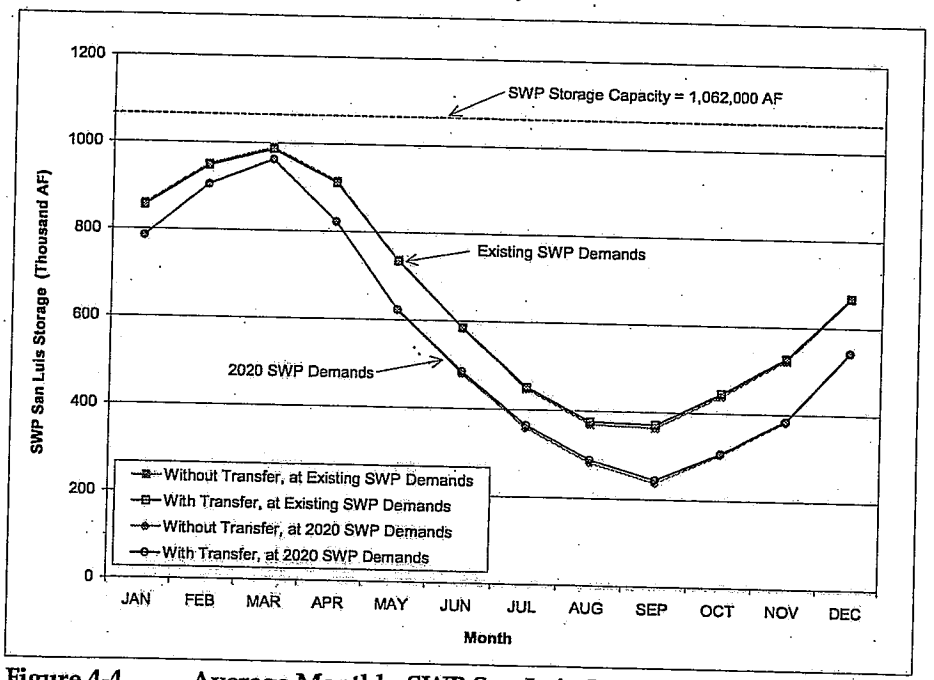

Figure 4-4. **Average Monthly SWP San Luis Storage With and Without the Project, With Monterey Amendment**

Table 4-4. Net Change in San Luis Reservoir Storage Resulting From the Project at Existing SWP Demand Conditions, With Monterey Amendment

(all values in thousand AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1922	-1.8	-2.9	-3.9	-4.0	-3.4	-0.5	2.1	5.1	5.2	2.9	1.3	-0.1
1923	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.0	5.2	2.8	1.2	-0.1
1924	-0.8	-1.3	-1.8	-1.9	-1.5	-0.2	1.0	2.5	2.6	1.4	0.6	-0.1
1925	-0.5	-0.8	-1.4	-1.4	-1.2	0.1	1.1	2.4	2.4	1.3	0.6	-0.1
1926	-0.6	-1.0	-1.8	-2.0	-1.6	0.6	2.5	4.7	4.7	2.7	1.2	0.0
1927	-1.3	-2.4	-3.5	-3.6	-3.0	-0.1	2.3	5.3	5.3	2.9	1.3	-0.1
1928	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	2.1	5.1	5.4	3.0	1.3	0.1
1929	-0.6	-1.1	-1.7	-1.7	-1.5	-0.1	1.0	2.3	2.4	1.3	0.6	0.0
1930	-0.6	-1.2	-1.9	-2.0	-1.6	0.4	2.1	4.0	4.0	2.3	1.0	-0.1
1931	-0.6	-1.0	-1.4	-1.4	-1.2	-0.1	0.9	2.0	2.0	1.1	0.5	-0.1
1932	-0.6	-1.1	-1.7	-1.9	-1.5	0.0	1.2	2.8	2.8	1.6	0.6	-0.1
1933	-0.5	-0.9	-1.2	-1.3	-1.1	0.1	1.1	2.3	2.3	1.3	0.6	0.0
1934	-0.4	-0.8	-1.3	-1.4	-1.2	0.0	1.1	2.3	2.3	1.3	0.7	0.1
1935	-0.5	-1.0	-1.6	-1.9	-1.5	1.3	3.5	6.4	6.3	3.5	1.6	0.1
1936	-0.6	-1.4	-2.7	-2.8	-2.4	0.3	2.7	5.6	5.6	3.0	1.3	-0.1
1937	-0.9	-1.7	-2.7	-2.9	-2.4	0.3	2.6	5.3	5.4	3.0	1.4	0.0
1938	-1.7	-2.9	-3.8	-4.0	-3.3	-0.5	1.9	4.8	5.0	2.7	1.2	0.0
1939	-1.9	-3.1	-4.1	-4.2	-3.5	-0.5	2.0	5.0	5.2	2.8	1.2	-0.1
1940	-0.5	-1.0	-2.2	-2.4	-2.1	0.7	3.0	5.9	5.9	3.2	1.5	0.0
1941	-1.5	-2.4	-3.2	-3.3	-2.8	-0.4	1.6	4.0	4.1	2.3	0.9	-0.1
1942	-1.9	-3.1	-4.1	-4.2	-3.5	-0.6	1.9	4.9	5.1	2.8	1.2	0.0
1943	-1.7	-2.8	-3.8	-3.9	-3.2	-0.4	2.0	4.8	5.0	2.7	1.1	-0.1
1944	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	2.1	5.1	5.2	3.0	1.3	0.1
1945	-1.7	-2.9	-3.9	-4.1	-3.4	-0.6	1.9	4.9	5.1	2.7	1.1	-0.1
1946	-1.9	-3.0	-4.0	-4.1	-3.5	-0.5	2.0	5.0	5.2	2.8	1.3	0.0
1947	-1.2	-1.9	-2.7	-2.9	-2.3	0.4	2.8	5.7	5.7	3.2	1.5	-0.1
1948	-0.5	-0.9	-1.2	-1.3	-1.0	1.4	3.3	5.7	5.6	3.1	1.4	-0.1
1949	-0.8	-1.4	-2.0	-2.1	-1.8	0.2	1.8	3.8	3.8	2.1	0.8	-0.2
1950	-0.5	-1.0	-1.7	-1.9	-1.5	0.8	2.7	5.0	5.0	2.7	1.2	0.0
1951	-1.8	-3.0	-4.0	-4.2	-3.5	-0.6	1.9	5.0	5.1	2.8	1.2	-0.1
1952	-1.4	-2.3	-3.1	-3.2	-2.6	-0.3	1.7	4.1	4.3	2.4	1.1	0.1
1953	-1.8	-2.9	-4.0	-4.1	-3.4	-0.6	1.9	4.9	5.1	2.8	1.1	-0.2
1954	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	2.0	5.1	5.2	2.8	1.2	-0.1
1955	-1.1	-1.9	-2.6	-2.6	-2.2	-0.2	1.5	3.5	3.6	2.0	0.9	-0.1
1956	-1.8	-2.9	-4.0	-4.1	-3.5	-0.6	1.9	5.0	5.1	2.8	1.2	-0.1
1957	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	2.0	5.0	5.1	2.8	1.2	-0.1
1958	-1.8	-2.9	-3.8	-3.9	-3.3	-0.5	1.9	4.7	5.0	2.7	1.2	0.0
1959	-1.8	-2.9	-4.0	-4.1	-3.5	-0.6	2.0	5.0	5.2	2.8	1.2	0.0
1960	-0.6	-1.0	-1.7	-2.0	-1.6	0.7	2.6	4.9	4.9	2.8	1.2	0.0
1961	-0.7	-1.3	-1.9	-2.1	-1.7	0.3	2.1	4.1	4.1	2.4	1.1	0.1
1962	-0.5	-0.9	-1.7	-2.1	-1.7	1.1	3.4	6.3	6.2	3.5	1.7	0.1
1963	-1.8	-2.9	-4.0	-4.0	-3.4	-0.4	2.2	5.1	5.4	2.9	1.3	0.1
1964	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.1	5.2	3.0	1.3	0.1
1965	-1.4	-2.5	-3.4	-3.5	-2.9	-0.3	1.9	4.5	4.7	2.6	1.2	0.1
1966	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	2.0	5.1	5.3	3.0	1.3	0.0
1967	-1.7	-2.8	-3.8	-3.9	-3.2	-0.4	2.0	4.8	5.0	2.8	1.2	0.1
1968	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.1	5.2	2.9	1.2	0.0
1969	-1.5	-2.4	-3.2	-3.2	-2.7	-0.4	1.6	4.0	4.2	2.3	1.0	0.0
1970	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.0	5.2	2.8	1.2	0.0
1971	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.1	5.2	2.8	1.2	-0.1
1972	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	1.9	4.9	5.0	2.7	1.2	-0.1
1973	-1.1	-2.2	-3.3	-3.5	-2.9	-0.1	2.4	5.3	5.4	3.0	1.3	0.0
1974	-1.8	-3.0	-4.0	-4.1	-3.4	-0.4	2.1	5.1	5.3	3.0	1.3	0.1
1975	-1.8	-3.0	-4.0	-4.1	-3.4	-0.6	1.9	5.0	5.1	2.8	1.2	-0.1
1976	-1.9	-2.8	-3.8	-3.8	-3.2	-0.5	1.7	4.4	4.6	2.6	1.1	0.0
1977	-0.5	-0.7	-0.9	-1.0	-0.9	-0.3	0.3	1.0	1.0	0.5	0.1	-0.1
1978	-0.3	-0.8	-1.8	-2.0	-1.7	0.5	2.4	4.5	4.5	2.5	1.1	0.0
1979	-1.9	-3.1	-4.1	-4.2	-3.5	-0.5	2.0	5.1	5.3	3.0	1.4	0.1
1980	-1.5	-2.4	-3.3	-3.4	-2.9	-0.5	1.5	3.9	4.0	2.1	0.8	-0.2
1981	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.1	5.2	2.8	1.2	0.0
1982	-1.7	-2.9	-3.8	-3.9	-3.3	-0.5	1.9	4.7	4.9	2.7	1.1	-0.1
1983	-1.5	-2.4	-3.2	-3.2	-2.7	-0.4	1.6	4.0	4.1	2.3	1.0	-0.1
1984	-1.9	-3.0	-4.0	-4.2	-3.5	-0.5	2.0	5.0	5.2	2.9	1.3	0.0
1985	-1.8	-3.0	-4.0	-4.1	-3.4	-0.5	2.1	5.1	5.3	3.0	1.3	0.1
1986	-0.6	-0.9	-1.9	-2.1	-1.7	0.5	2.4	4.6	4.6	2.5	1.1	-0.1
1987	-1.3	-2.1	-2.9	-3.0	-2.5	-0.1	1.9	4.4	4.4	2.4	1.1	0.0
1988	-0.5	-1.1	-1.5	-1.6	-1.3	-0.3	0.7	1.7	1.8	1.0	0.4	0.0
1989	-0.5	-0.8	-1.2	-1.5	-1.2	0.8	2.5	4.5	4.4	2.4	1.0	-0.1
1990	-0.5	-0.9	-1.4	-1.5	-1.3	0.0	1.0	2.2	2.4	1.3	0.6	0.1
1991	-0.4	-0.7	-0.9	-0.9	-0.8	0.0	0.6	1.4	1.5	0.9	0.4	0.1
1992	-0.4	-0.7	-1.0	-1.1	-0.9	0.2	1.1	2.2	2.2	1.3	0.6	0.1
1993	-0.6	-1.8	-2.9	-3.1	-2.6	0.2	2.6	5.4	5.5	3.1	1.4	-0.1
AVG	-1.2	-2.1	-2.9	-3.1	-2.6	-0.1	1.9	4.4	4.5	2.5	1.1	0.0
MIN	-1.9	-3.1	-4.1	-4.2	-3.5	-0.6	0.3	1.0	1.0	0.5	0.1	-0.2
MAX	-0.3	-0.7	-0.9	-0.9	-0.8	1.4	3.5	6.4	6.3	3.5	1.7	0.1

Table 4-5. Net Change in San Luis Reservoir Storage Resulting From the Project at 2020 SWP Demand Conditions, With Monterey Amendment

(all values in thousand AF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1922	-1.2	-2.0	-3.1	-3.3	-2.7	0.2	2.7	5.6	5.6	3.2	1.6	0.2
1923	-1.7	-2.9	-4.0	-4.1	-3.5	-0.5	1.9	4.9	5.1	2.8	1.2	-0.2
1924	-0.5	-0.8	-1.1	-1.1	-0.9	0.0	0.7	1.6	1.7	0.9	0.5	0.1
1925	-0.5	-0.8	-1.3	-1.4	-1.2	0.2	1.3	2.6	2.6	1.5	0.7	-0.1
1926	-0.6	-1.2	-1.9	-2.1	-1.8	0.2	1.7	3.6	3.7	2.0	0.8	-0.2
1927	-1.1	-2.0	-3.1	-3.2	-2.7	0.2	2.6	5.5	5.7	3.2	1.5	0.1
1928	-1.3	-2.3	-3.2	-3.3	-2.7	-0.3	1.7	4.1	4.2	2.4	1.1	-0.1
1929	-0.7	-1.2	-1.6	-1.7	-1.4	-0.1	0.9	2.2	2.3	1.3	0.5	-0.1
1930	-0.6	-1.3	-1.9	-2.1	-1.8	0.1	1.7	3.6	3.6	1.9	0.9	-0.1
1931	-0.5	-1.0	-1.4	-1.5	-1.2	-0.1	0.9	2.1	2.1	1.2	0.5	0.1
1932	-0.5	-1.0	-1.5	-1.6	-1.2	0.2	1.3	2.8	2.8	1.5	0.7	0.0
1933	-0.6	-1.0	-1.4	-1.4	-1.2	0.0	1.0	2.2	2.3	1.3	0.6	0.1
1934	-0.6	-1.0	-1.4	-1.5	-1.3	-0.1	0.9	2.1	2.2	1.2	0.5	-0.1
1935	-0.4	-1.0	-1.5	-1.7	-1.4	1.1	3.1	5.6	5.6	3.1	1.4	0.0
1936	-0.5	-0.9	-2.0	-2.2	-1.8	0.6	2.7	5.1	5.1	2.9	1.4	0.1
1937	-0.5	-1.0	-1.7	-1.9	-1.6	0.6	2.4	4.6	4.6	2.6	1.2	0.0
1938	-1.5	-2.6	-3.7	-3.7	-3.1	-0.2	2.3	5.2	5.4	3.1	1.5	0.1
1939	-1.6	-2.6	-3.5	-3.7	-3.0	-0.5	1.6	4.2	4.3	2.3	1.0	-0.2
1940	-0.4	-0.8	-1.9	-2.1	-1.7	0.9	3.1	5.8	5.7	3.2	1.5	0.1
1941	-0.9	-1.8	-2.6	-2.8	-2.3	0.0	1.9	4.3	4.4	2.4	1.1	-0.1
1942	-1.8	-2.9	-4.0	-4.1	-3.4	-0.5	2.0	5.0	5.2	2.8	1.3	-0.1
1943	-1.6	-2.8	-3.7	-3.7	-3.2	-0.7	1.6	4.3	4.5	2.4	1.1	-0.1
1944	-1.3	-2.3	-3.3	-3.3	-2.8	0.1	2.3	5.2	5.3	3.0	1.3	0.0
1945	-1.1	-1.7	-2.7	-2.9	-2.4	0.1	2.2	4.9	4.9	2.7	1.1	-0.1
1946	-1.7	-2.7	-3.5	-3.6	-3.0	-0.3	1.9	4.6	4.8	2.7	1.4	0.2
1947	-1.0	-1.6	-2.2	-2.4	-1.9	0.2	2.0	4.1	4.2	2.3	1.0	-0.1
1948	-0.5	-0.8	-1.2	-1.3	-1.1	1.0	2.7	4.9	4.8	2.6	1.1	-0.1
1949	-0.7	-1.2	-1.8	-1.9	-1.6	0.3	1.8	3.6	3.6	1.9	0.7	-0.2
1950	-0.5	-1.0	-1.6	-1.8	-1.5	0.6	2.4	4.5	4.5	2.5	1.1	0.0
1951	-1.7	-2.9	-3.8	-3.8	-3.2	-0.5	1.8	4.6	4.8	2.6	1.2	0.0
1952	-1.5	-2.4	-3.2	-3.3	-2.8	-0.4	1.6	4.0	4.1	2.3	1.0	-0.1
1953	-1.8	-3.0	-3.8	-3.9	-3.4	-0.6	1.7	4.5	4.7	2.6	1.1	-0.1
1954	-1.5	-2.6	-3.5	-3.6	-3.0	-0.4	1.9	4.6	4.8	2.6	1.1	-0.1
1955	-1.0	-1.7	-2.4	-2.5	-2.2	-0.3	1.3	3.1	3.1	1.8	0.9	0.0
1956	-1.6	-2.7	-3.8	-3.9	-3.2	-0.3	2.1	5.1	5.3	2.9	1.3	0.0
1957	-1.5	-2.5	-3.3	-3.4	-2.8	-0.4	1.7	4.2	4.3	2.3	0.9	-0.1
1958	-1.3	-2.3	-3.3	-3.4	-2.8	0.1	2.5	5.5	5.5	3.1	1.4	0.0
1959	-1.6	-2.6	-3.5	-3.5	-3.0	-0.5	1.7	4.3	4.5	2.5	1.1	-0.1
1960	-0.4	-0.7	-1.3	-1.4	-1.2	0.6	2.1	3.9	3.9	2.2	1.0	0.1
1961	-0.8	-1.4	-2.0	-2.2	-1.8	0.1	1.7	3.7	3.8	2.0	0.8	-0.1
1962	-0.6	-0.9	-1.7	-2.0	-1.6	0.8	2.8	5.2	5.1	2.8	1.3	0.0
1963	-1.5	-2.5	-3.4	-3.6	-3.0	-0.1	2.3	5.2	5.3	2.9	1.2	-0.1
1964	-1.5	-2.5	-3.3	-3.4	-2.8	-0.3	1.7	4.1	4.3	2.4	1.1	0.1
1965	-1.4	-2.3	-3.1	-3.2	-2.7	-0.4	1.5	4.0	4.1	2.2	0.9	-0.1
1966	-1.8	-3.0	-3.9	-3.9	-3.3	-0.4	1.9	4.8	5.0	2.9	1.3	0.1
1967	-1.1	-2.3	-3.3	-3.4	-2.9	0.0	2.4	5.4	5.4	3.1	1.4	0.1
1968	-1.6	-2.8	-3.6	-3.7	-3.1	-0.6	1.6	4.3	4.5	2.5	1.2	0.1
1969	-0.9	-1.8	-2.7	-2.8	-2.3	-0.1	2.0	4.3	4.4	2.4	1.0	-0.1
1970	-1.7	-2.9	-3.7	-3.8	-3.2	-0.5	1.9	4.6	4.7	2.6	1.3	0.1
1971	-1.8	-2.9	-3.7	-3.8	-3.2	-0.2	2.2	5.2	5.4	3.0	1.4	0.0
1972	-1.5	-2.3	-3.1	-3.1	-2.6	-0.4	1.6	3.9	4.0	2.2	1.0	0.0
1973	-1.1	-2.2	-3.1	-3.3	-2.8	-0.2	2.1	4.7	4.8	2.6	1.2	-0.1
1974	-1.8	-2.9	-3.9	-3.9	-3.3	-0.3	2.2	5.2	5.3	2.9	1.4	0.1
1975	-1.6	-2.6	-3.5	-3.6	-3.0	-0.2	2.1	4.9	5.1	2.8	1.3	0.0
1976	-1.7	-2.7	-3.5	-3.6	-3.0	-0.6	1.5	4.0	4.2	2.3	1.0	-0.1
1977	-0.3	-0.6	-0.8	-0.9	-0.7	0.0	0.5	1.2	1.2	0.7	0.3	0.1
1978	-0.3	-0.6	-1.1	-1.4	-1.1	1.0	2.7	4.8	4.7	2.6	1.1	-0.1
1979	-1.2	-2.0	-3.0	-3.1	-2.7	-0.2	1.9	4.5	4.6	2.5	1.0	-0.1
1980	-1.1	-2.0	-2.8	-2.9	-2.5	-0.2	1.8	4.0	4.2	2.3	1.0	-0.1
1981	-1.5	-2.5	-3.5	-3.5	-3.0	-0.5	1.7	4.2	4.4	2.4	1.0	-0.1
1982	-1.8	-2.9	-3.9	-4.0	-3.3	-0.4	2.0	5.0	5.2	3.0	1.3	0.0
1983	-1.4	-2.3	-3.1	-3.2	-2.7	-0.4	1.6	4.0	4.2	2.3	1.0	0.1
1984	-1.9	-3.0	-4.0	-4.0	-3.4	-0.6	1.8	4.7	4.9	2.7	1.1	-0.1
1985	-1.5	-2.4	-3.2	-3.3	-2.8	0.0	2.2	5.0	5.2	2.9	1.4	0.1
1986	-0.5	-1.1	-2.0	-2.2	-1.9	0.4	2.2	4.5	4.5	2.4	1.0	-0.1
1987	-1.1	-1.8	-2.4	-2.6	-2.1	0.0	1.7	3.8	3.9	2.2	1.0	0.0
1988	-0.6	-1.1	-1.5	-1.5	-1.3	-0.2	0.7	1.8	1.9	1.1	0.5	0.1
1989	-0.6	-1.0	-1.3	-1.5	-1.2	0.7	2.4	4.4	4.3	2.3	1.0	-0.1
1990	-0.6	-1.0	-1.3	-1.4	-1.1	0.0	1.0	2.1	2.2	1.2	0.6	0.0
1991	-0.4	-0.6	-0.9	-0.9	-0.8	0.0	0.6	1.4	1.4	0.8	0.4	0.0
1992	-0.4	-0.6	-1.0	-1.0	-0.8	0.3	1.1	2.2	2.2	1.3	0.5	0.0
1993	-0.6	-1.6	-2.7	-2.9	-2.4	0.4	2.8	5.7	5.8	3.3	1.5	0.1
AVG	-1.1	-1.9	-2.6	-2.7	-2.3	0.0	1.9	4.2	4.2	2.4	1.1	0.0
MIN	-1.9	-3.0	-4.0	-4.1	-3.5	-0.7	0.5	1.2	1.2	0.7	0.3	-0.2
MAX	-0.3	-0.6	-0.8	-0.9	-0.7	1.1	3.1	5.8	5.8	3.3	1.6	0.2

5.0 CASTAIC LAKE STORAGE ANALYSIS

5.1 ANALYSIS METHODOLOGY AND ASSUMPTIONS

The Castaic Lake storage analysis is a qualitative analysis describing the potential impacts resulting from implementation of the Project to storage in Castaic Lake.

5.1.1 Background

As was discussed previously in section 1.1, Castaic Lake is the terminal reservoir on the West Branch of the California Aqueduct and is operated to provide regulatory storage to help meet peak deliveries during the summer months to the three SWP Contractors that receive deliveries from Castaic Lake (CLWA, MWD, and the Ventura County Flood Control District), and to provide an emergency water supply to those Contractors in case of a major supply system outage. Castaic Lake is also used for year-round recreational purposes.

Total deliveries to Contractors from Castaic Lake averaged 403,000 AF from 1990 through 2000, ranging from 158,000 AF in 1995 (a very wet year) to 787,000 AF in 1990 (see Table 1-1). During this same period, deliveries to CLWA averaged 19,200 AF, while deliveries to MWD, due to its relatively larger Table A Amount and demand, averaged 380,000 AF. As a percent of total deliveries, deliveries to CLWA averaged about 6 percent of the total during this period, while deliveries to MWD averaged about 93 percent.

As part of the Monterey Amendment, the three West Branch Contractors have access to a total of 160,000 AF of the storage from Castaic Lake as "flexible storage." These Contractors may withdraw up to their proportionate share of the total flexible storage, in addition to their allocated SWP supplies, and must replace any water withdrawn within five years of withdrawal. CLWA's proportionate share of this flexible storage is 4,684 AF. CLWA's proportionate share of flexible storage and their access to this storage do not change due to the Project.

With implementation of the Monterey Amendment in 1996, annual operations at Castaic Reservoir were somewhat modified as a result of flexible storage. In order to keep enough water available in storage to provide both for flexible storage and for emergency purposes, since 1996 DWR has typically limited the amount of its storage withdrawals over the summer to meet peak deliveries to about 30,000 AF. These more limited annual storage withdrawals since 1996 can be seen on Figure 1-6. Any withdrawals from flexible storage, which have occurred in several years since implementation of the Monterey Amendment, are in addition to these typical DWR annual operations and have resulted in larger total withdrawals during those years in which they occurred.

5.1.2 Overview of Analysis

The qualitative analysis of the potential impact of the Project on storage in Castaic Lake was based on storage data from model studies conducted based on the With Monterey Amendment scenario, which includes Castaic Lake operations consistent with the Monterey Amendment.

The conclusions drawn from this analysis, however, are independent of how water is allocated and so would be the same for all allocation scenarios.

Methodology

1. Monthly target storage values for Castaic Lake that were used as input to the two DWRSIM studies described in section 2.1, and well as model output of monthly storage at Castaic Lake for the 73 hydrologic years of each study, were reviewed to determine the amount of storage that would be withdrawn in normal operations to meet peak summer Contractor deliveries from Castaic Lake.

2. This annual storage withdrawal was then compared to typical total Contractor deliveries from Castaic Lake.

Assumptions

1. The monthly target storage values used to govern Castaic Lake operations, and therefore the annual withdrawal from the Lake to meet peak summer deliveries, would not change in the future, regardless of whether deliveries from Castaic Lake increase.

5.2 ANALYSIS CONCLUSIONS

The monthly target storage values used to govern Castaic Lake operations in the model studies range from a maximum of 324,000 AF in April to a minimum of 294,000 AF in October. This means that operational targets are to have the lake full by the end of April, and to draw the storage down by 30,000 AF by the end of October. This storage withdrawal of 30,000 AF is used to meet Contractor deliveries from Castaic Lake during the peak demand period over the summer. This modeled operation of Castaic Lake is consistent with actual operations of the lake since implementation of the Monterey Amendment.

The 30,000 AF of storage withdrawal from Castaic Lake is small relative to total deliveries from the lake. These total deliveries averaged about 403,000 AF per year from 1990 through 2000, and deliveries from Castaic Lake are anticipated to increase in the future as demands within MWD and CLWA service areas increase. Typically, roughly two thirds of total annual deliveries from the lake are made during the storage withdrawal period from May through October. Applying this two-thirds value to the average deliveries from 1990 to 2000 means an average of roughly 270,000 AF delivered from May through October, which significantly exceeds the 30,000 AF of storage withdrawal during those same months. This means that under existing operations, most deliveries from Castaic Lake are conveyed through the California Aqueduct and through Castaic Lake in about the same month water is delivered. In other words, Castaic Lake is used more for conveyance than for storage.

Since the 30,000 AF of storage withdrawal at Castaic Lake is limited both by contractual and operational considerations, this amount of withdrawal is not anticipated to increase as delivery demands increase. Therefore, any additional deliveries from the lake must be delivered through the aqueduct in about the same month as the delivery, and storage in the lake would not change. This is true regardless of whether deliveries from Castaic Lake increase due to increasing Contractor demands, or due to Table A Amount transfers such as the Project.

Therefore, the increase in water delivery to CLWA from the Project would result in additional water being conveyed to, and delivered from, Castaic Lake, but would have little effect on the overall storage volume in the lake at any given time.

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6.0 CLWA SUPPLIES FOR ENVIRONMENTAL SETTING

6.1 ASSUMPTIONS

The current water supply for the Santa Clarita Valley is derived from both local and imported sources. The principal components of this supply are groundwater from the Alluvial Aquifer, groundwater from the Saugus Formation and imported water from the SWP. A variety of future water sources (including local recycled water,[9] desalted ocean water, increased Saugus Formation production, conjunctive use of local or non-local groundwater basins, and other imported water sources) could be developed to supply future development planned for the CLWA service area. CLWA completed an analysis of its water supply as part of its Urban Water Management Plan (UWMP) (CLWA 2000). The UWMP is scheduled to be updated in 2005.

The water supplies included in this EIR for the pre-project 1998 environmental baseline and current environmental setting were limited to existing supply sources and programs, with the amount of water available from these sources estimated based only on existing supply facilities. The existing supply sources are:

Local Supplies:	Groundwater from the Alluvial Aquifer
	Groundwater from the Saugus Formation
Imported Supplies:	SWP Table A
	SWP Flexible Storage
	SWP Table A Amount in Semitropic Storage

6.1.1 Common Assumptions

Assumptions that are common to both the 1998 environmental baseline and current environmental setting are described below.

Local Groundwater - The amount of available groundwater supplies from the Alluvial Aquifer and Saugus Formation are taken, for the most part, directly from the UWMP. In the UWMP, annual supplies from the Alluvial Aquifer were projected to be 30,000 to 40,000 AF in average years, and 30,000 to 35,000 AF in dry years; and annual supplies from the Saugus Formation were projected to be 7,500 to 15,000 AF in average years, and 11,000 to 15,000 AF in dry years. While an updated report on these two aquifers (Slade 2002) concluded that short-term, dry-year supply from the Saugus Formation could increase to up to 35,000 AF per year, annual pumping from existing wells and appurtenant facilities is limited to approximately 15,000 AF. Therefore, given the additional supply capability of the Saugus Formation, it is assumed that annual dry-year pumping would be limited only by existing facilities, to 15,000 AF.

The projected groundwater supplies used in this EIR are generally the midpoints of the ranges set forth in the UWMP, with the exception as noted above for dry-period pumping from the

9 Initial deliveries of recycled water commenced in 2003.

Saugus Formation. For the multiple dry-year period, it was assumed that while groundwater supplies might change from year to year during that period, the average annual supply over the dry period would be the same as for a single, very dry year. Therefore, the dry-year supply identified above was used in both the single dry year and the multiple dry-year period.

The detection of perchlorate in four production wells in the Saugus Formation in 1997 and one production well in the Alluvial Aquifer in 2002 has resulted in suspending the use of these five wells. Due to the number and distribution of the remaining production wells, however, this suspended use has not had a substantial effect on overall water supply.

SWP Flexible Storage - Under the SWP Water Supply Contracts, the Contractors that share in the repayment of Castaic Lake may access a portion of the storage in that reservoir. This accessible storage is referred to as "flexible storage." These Contractors may withdraw water from flexible storage, in addition to their allocated Table A supplies, on an as-needed basis. A Contractor must replace any water it withdraws from this storage within five years. As one of the three Contractors sharing in the repayment of Castaic Lake, CLWA has access to this flexible storage. Its share of the total flexible storage is about 4,680 AF.

For this EIR, it is assumed that this supply would only be used in dry years. For the single dry-year condition, it is assumed the entire amount would be used. For the multiple dry-year condition, it is assumed that the entire amount would be used sometime during the four-year period, so the average annual supply during that period would be one fourth of the total, or 1,170 AF.

6.1.2 Scenario-Specific Assumptions

6.1.2.1 1998 Environmental Baseline

Assumptions that are specific to the 1998 environmental baseline are described below.

SWP Table A Supplies – The SWP Table A supplies estimated for this environmental baseline are based on results from the DWRSIM model study at existing (1998) demand conditions (as was described previously in section 2.1), with SWP water supplies allocated among Contractors under the Water Supply Contract provisions then in effect (i.e., based on Monterey Amendment provisions). The availability of SWP supplies to CLWA are estimated by multiplying CLWA's pre-project Table A Amount of 54,200 AF, by the Table A delivery percentages determined in the With Monterey Amendment water supply analysis for Other M&I Contractors (see section 3.1 for an explanation of this water supply analysis). For the three hydrologic conditions evaluated, the delivery percentages used here are based on: the average over DWRSIM's entire hydrologic period for the average year, 1977 for the single dry year, and the 1988 to 1991 average for the multiple dry year. The specific delivery percentages multiplied by CLWA's Table A Amount for each of these three hydrologic conditions were 86.3 percent, 22.4 percent, and 44.2 percent, respectively.

6.1.2.2 Current Environmental Setting

Assumptions that are specific to the current environmental setting are described below.

SWP Table A Supplies - The SWP Table A supplies estimated for the current environmental setting are based on results in DWR's SWP Delivery Reliability Report (DWR, 2003) from the CALSIM II model study at existing (2001) demand conditions (as was described previously in section 2.1). In the CALSIM II studies, SWP water supplies are allocated among Contractors based on Monterey Amendment provisions. Since the Project's 41,000 AF of Table A Amount has actually already been transferred, the availability of SWP supplies to CLWA are estimated by multiplying CLWA's Table A Amount with the Project, or 95,200 AF, by the Table A delivery percentages from the CALSIM II study. For the three hydrologic conditions evaluated, the delivery percentages used here are based on the average over the model's entire hydrologic period for the average year, 1977 for the single dry year, and the 1988 to 1991 average for the multiple dry year. The specific delivery percentages multiplied by CLWA's Table A Amount for each of these three hydrologic conditions were 71.7 percent, 19.5 percent, and 36.0 percent, respectively.

Semitropic Storage - In 2002, CLWA stored some of its allocated SWP Table A supply through a groundwater banking agreement with the Semitropic Water Storage District in Kern County. Under this agreement, CLWA stored 24,000 AF of its excess SWP supply and, after consideration for losses within the groundwater basin, may withdraw up to 21,600 AF when needed over the next ten years. In addition to this short-term storage for CLWA, Semitropic has a long-term groundwater banking program with several other partners, including SWP Contractors. The facilities that Semitropic may use in the return of CLWA's banked water supply are the same facilities that Semitropic may use to return banked water to its long-term banking program partners. As a result, there may be competition for use of those facilities in a particularly dry year, which could limit CLWA's ability to access that water in that year.

It is assumed that this supply would only be used in dry years. For the single dry-year condition, it is assumed that competition among Semitropic's banking partners for use of return facilities would limit CLWA's supply to one third of the storage available, or 7,200 AF. For the multiple dry-year condition, it is assumed that the entire amount would be accessible and used sometime during the four-year period, so the average annual supply during that period would be one fourth of the total available, or 5,400 AF.

It should be noted that in February 2004, CLWA was again able to store up to 35,000 AF of its allocated 2003 SWP Table A supply on a short-term basis (10 years or less) pursuant to a groundwater banking agreement with the Semitropic Water Storage District. CLWA may withdraw up to 31,500 AF within 10 years. This recently stored water is not included in the existing water supplies (for this analysis, those available in 2002) shown below.

6.2 BASELINE SUPPLIES

6.2.1 1998 Environmental Baseline

Table 6-1 summarizes waters supplies available to meet demands in the CLWA service area in 1998, prior to the Project. The table displays water supplies available under various hydrologic conditions.

Table 6-1. 1998 Water Supplies for the CLWA Service Area
(all values in AF)

Hydrologic Condition[1]	SWP Supplies		Existing Local Supplies		Total
	Table A[2]	SWP Flexible Storage[3]	Alluvial Aquifer	Saugus Formation	
Average Year	46,500	0	35,000	11,000	**92,500**
Single Dry Year	12,100	4,680	32,500	15,000	**64,280**
Multiple Dry Year Period	24,000	1,170	32,500	15,000	**72,670**

1. As defined in section 3.1.1.2, the average year supply is the average amount of water available, based on DWRSIM model results over its entire period of hydrologic record. The single dry year supply is the supply available in the single year with the lowest total SWP deliveries, based on DWRSIM model results (1977). Multiple dry year period supply is the average amount of water available over the four consecutive drought years of 1988 through 1991, based on DWRSIM model results.
2. Values based on CLWA's Table A Amount in 1998 (prior to the Project) of 54,200 AF, and percentages for Table A deliveries based on DWR's DWRSIM SWP operations model (discussed in section 3.1).
3. CLWA may withdraw up to about 4,680 AF of water from Castaic Lake as "flexible storage". It is assumed that CLWA would use this supply only in drier years, with the entire amount used in the one single dry year. For the multiple dry year, it is assumed that the entire amount would be used during the four-year period, or an annual average of 1,170 AF.

6.2.2 Current Environmental Setting

Table 6-2 summarizes existing (2002) water supplies available to meet demands in the CLWA service area, and includes the Project. The table displays water supplies available under various hydrologic conditions.

Table 6-2. Existing Water Supplies for the CLWA Service Area
(all values in AF)

Hydrologic Condition[1]	SWP Supplies			Existing Local Supplies		Total
	Table A[2]	SWP Flexible Storage[3]	Semitropic Storage[4]	Alluvial Aquifer	Saugus Formation	
Average Year	68,300	0	0	35,000	11,000	**114,300**
Single Dry Year	18,600	4,680	7,200	32,500	15,000	**77,980**
Multiple Dry Year Period	34,300	1,170	5,400	32,500	15,000	**88,370**

1. As defined in section 3.1.1.2, the average year supply is the average amount of water available, based on DWRSIM model results over its entire period of hydrologic record. The single dry year supply is the supply available in the single year with the lowest total SWP deliveries, based on DWRSIM model results (1977). Multiple dry year supply is the average amount of water available over the four consecutive drought years of 1988 through 1991, based on DWRSIM model results.
2. Values based on current Table A Amount of 95,200 AF (which includes the Project), and percentages for Table A deliveries from DWR's SWP Delivery Reliability Report (DWR 2003b).
3. CLWA may withdraw up to about 4,680 AF of water from Castaic Lake as "flexible storage". It is assumed that CLWA would use this supply only in drier years, with the entire amount used in the one single dry year. For the multiple dry year, it is assumed that the entire amount would be used during the four-year period, or an annual average of 1,170 AF.
4. In 2002, CLWA was able to store some if its allocated SWP Table A supply on a short-term basis (10 years or less) under a groundwater banking agreement with the Semitropic Water Storage District. Under this agreement, CLWA stored 24,000 AF of SWP water, and after consideration for losses, may withdraw up to 21,600 AF within 10 years. It is assumed that CLWA could expect to withdraw up to 1/3 of this amount in the single dry year, and the entire amount would be used during the four-year dry period. It is assumed that CLWA would only use this supply in drier years.

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8.0 ACRONYMS

AF	acre-feet
AFRP	Anadromous Fish Restoration Plan
cfs	cubic feet per second
CLWA	Castaic Lake Water Agency
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVWD	Coachella Valley Water District
Delta	Sacramento-San Joaquin River Delta
DWA	Desert Water Agency
DWR	California Department of Water Resources
EIR	Environmental Impact Report
KCWA	Kern County Water Agency
M&I	municipal and industrial
MWD	Metropolitan Water District of Southern California
NOP	Notice of Preparation
PCL	Planning and Conservation League
SBCFC & WCD	Santa Barbara County Flood Control and Water Conservation District
SWRCB	California State Water Resources Control Board
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
VCFCD	Ventura County Flood Control District
WRMWSD	Wheeler Ridge-Maricopa Water Storage District

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CLWA RETURN TO WRIT

EXHIBIT NO. 4

FINAL
Environmental Impact Report
California State Clearinghouse No. 1998041127

Castaic Lake Water Agency

Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Volume II

CASTAIC LAKE WATER AGENCY

Volume I is the Draft Environmental Impact Report

December 2004

FINAL

Environmental Impact Report

California State Clearinghouse No. 1998041127

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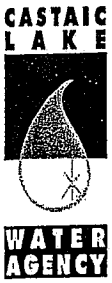
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Volume II



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Section 1 – Introduction

1.0 INTRODUCTION

The Environmental Impact Report (EIR) for the Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount contains two volumes. The first volume of the EIR, incorporated herein by reference, comprises the Draft EIR (DEIR), published in June 2004. The second volume of the EIR (this volume) contains public comments received on the DEIR, responses to the public comments and changes to the text of the DEIR.

BOTH VOLUMES OF THE EIR MUST BE READ TOGETHER. THE SECOND VOLUME DOES NOT REPEAT THE INFORMATION INCLUDED IN THE FIRST VOLUME.

A 60-day public review period (June 17 to August 16, 2004) was held to receive comments on the DEIR. A public hearing was held at CLWA on July 28, 2004 to receive comments on the DEIR.

A second public hearing was noticed prior to consideration of the adoption of the EIR to consider the comments to the DEIR and the responses to those comments. The purpose of this additional public hearing is to provide the CLWA Board the opportunity to consider the public comments and responses thereto as part of its decisional process concerning the proposed project (Project). This additional hearing neither re-opens nor extends the public review period, which closed on August 16, 2004. While the public is invited to attend the hearing, the EIR is now in final form for Board review and possible certification.

This second volume contains the following information:

Section 1—Introduction

Section 2—Public Comments contains the list of agencies, organizations, and individuals that submitted comment letters on the DEIR, copies of those letters, and the transcript of the July 28, 2004 public hearing. Each substantive comment is numbered.

Section 3—Responses to Comments contains a matrix including each of the public comments received and individual responses to those comments. The comments in the matrix were excerpted directly from the comment letters or public hearing transcript. This section also includes a Master Response that addresses similar issues raised in a number of comments regarding the appropriate lead agency for the EIR and the relationship of the Project to the Monterey Amendment EIR.

Section 4—Changes to the Text of the EIR presents text changes since publication of the DEIR.

Copies of the second volume of the EIR and a notice of availability identifying the date of the public hearing at which the CLWA Board of Directors is scheduled to consider certification of the EIR were mailed to those who provided comments on the DEIR.

Copies of both volumes of the FEIR are available for review at CLWA or can be purchased by contacting Mary Lou Cotton, CLWA Water Resources Manager, 27234 Bouquet Canyon Road,

Santa Clarita, California 93150-2173 or by calling (661) 297-1600. Both volumes of the FEIR also are available for public review at the following local public libraries:

Los Angeles County Public Library, Newhall
22704 W. 9th Street
Newhall, CA 91321

Los Angeles County Public Library, Canyon Country Jo Anne Darcy Library
18601 Soledad Canyon Road
Canyon Country, CA 91351

Los Angeles County Public Library, Valencia
23743 West Valencia Boulevard
Valencia, CA 91355

OTHER CEQA ACTIONS RELATED TO THIS EIR

A public hearing will be scheduled by the CLWA Board of Directors to consider certification of the EIR and approval of the Project. The public hearing date and time will be set forth in a separate notice provided to the public, public agencies, and other interested parties. As required by Public Resources Code (PRC), Division 13, section 21092.5, CLWA will provide a proposed written response to public agencies that commented on the DEIR at least 10 days prior to certifying the EIR. Those proposed responses are contained in Section 3 of this second volume of the EIR.

If the CLWA Board of Directors acts to certify the EIR and approves the Project, a Notice of Determination will be filed with Los Angeles County, Ventura County, and the State Clearinghouse.

Section 2 – Public Comments

2.0 PUBLIC COMMENTS

LIST OF COMMENTING AGENCIES, ORGANIZATIONS, AND INDIVIDUALS, AND COMMENT LETTERS

The following agencies, organizations, and individuals submitted comment letters on the DEIR during the 60-day review period. Verbal comments also were provided during the public hearing held on July 28, 2004. The comment letters are contained on the following pages, along with the transcript of the public hearing.

State Agencies

State of California, Department of Transportation (Caltrans)
Letter dated August 4, 2004 from Cheryl Powell, IGR/CEQA Branch Chief

California Department of Water Resources (DWR)
Letter dated July 30, 2004 from Barbara McDonnell, Chief

Department of California Highway Patrol (CHP)
Letter dated July 6, 2004 from E. Conley, Captain

State Water Contractors (SWC)
Letter dated August 16, 2004 from Terry L. Erlewine, General Manager

Local or Regional Agencies

United Water Conservation District (UWCD)
Letter dated July 26, 2004 from Dana L. Wisehart, General Manager

City of Santa Clarita (City SC)
Letter dated July 20, 2004 from Vincent Bertoni, Interim Director of Planning and Building Services

County of Los Angeles Department of Parks and Recreation (LA DPR)
Letter dated August 16, 2004 from Bryan Moscardini, Park Project Coordinator

County of Los Angeles Fire Department (LAFD)
Letter dated August 9, 2004 from David L. Leininger, Chief, Forestry Division, Prevention Bureau

County of Ventura, Resource Management Agency (VRMA)
Letter dated August 16, 2004 from Christopher Stephens, County Planning Director

County of Ventura, Public Works Agency (VPWA)
Letter dated July 21, 2004 from Lowell Preston, Water Resources Division

Stanislaus County Environmental Review Committee (SCERC)
Letter dated August 9, 2004 from W. Richard Jantz, Deputy Executive Officer

Organizations

Building Industry Association (BIA)
Letter dated July 28, 2004 from Ray Pearl, Executive Officer, and Terra Donlon, Director of Government Affairs

California Water Impact Network (C-WIN)
Letter dated August 1, 2004 from Carolee Krieger, President

Friends of the Santa Clara River (FSCR I)
Letter dated August 2, 2004 from Ron Bottorff, Chair

Friends of the Santa Clara River (FSCR II)
Letter dated August 6, 2004 from Ron Bottorff, Chair

Planning and Conservation League (PCL) and Citizens Planning Association (CPA)
Letter dated August 16, 2004 from Sage Sweetwood, PCL President and Naomi Kovacs, CPA Executive Director (PCL/CPA)

Public Citizen
Letter dated August 16, 2004 from Juliette Beck, Director, Water for All California

SCOPE
Letter dated August 16, 2004 from Pat Saletore

Sierra Club, Angeles Chapter
Letter dated August 10, 2004 from Johanna Zetterberg

TriCounty Watchdogs (TCW)
Letter dated August 13, 2004 from Jan de Leeuw

Individuals

Arve R. Sjovold
Letter dated August 15, 2004

Mr. and Mrs. Arnold D. Swan, et al.
Letter dated August 13, 2004

Jim Churchill
Letter dated August 14, 2004

Law Offices of Stephan C. Volker
Letter dated August 16, 2004 from Stephan C. Volker, Attorney

Letters from the following were received after the close of the public comment period, but these comments were considered, and responses have been provided in the FEIR.

1 Endangered Habitats League (EHL)
2 Letter dated August 19, 2004 from Dan Silver, Executive Director

3 County of Los Angeles, Public Library
4 Letter dated August 23, 2004 from Malou Rubio, Head, Staff Services

5 The Southern California Association of Governments (SCAG)
6 Letter dated September 3, 2004 from Jeffrey M. Smith, Senior Regional Planner,
7 Intergovernmental Review

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
120 SO. SPRING ST.
LOS ANGELES, CA 90012
PHONE: (213) 897-3747
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

IGR/CEQA No. 040627AL, EIR
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount
Vic. LA-5 / Various Locations
SCH # 1998041127

August 4, 2004

Ms. Mary Lou Cotton
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350-2173

Dear Ms. Cotton:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project.

The Project would not involve construction or operational changes that could generate traffic or otherwise affect traffic conditions. Based on the information received, we have no comments at this time. Thank you for the opportunity to have reviewed this project. 1

Any transportation of water which requires the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. We recommend that large size truck trips be limited to off-peak commute periods. Thank you for the opportunity to have reviewed this project.

If you have any questions, please feel free to contact me at (213) 897-3747 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 040627AL.

Sincerely,

Cheryl Powell

CHERYL POWELL
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

STATE OF CALIFORNIA -- THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

July 30, 2004

Post-it® Fax Note 7671	Date 7/30/04	# of pages ▶ 2
To CLWA - Mary Lou Cot	From H. Walter	
Co./Dept.	Co.	
Phone # 916 227-1311	Phone #	
Fax #	Fax #	

Ms. Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Dear Ms. Cotton:

The Department of Water Resources' (DWR) staff have reviewed the Draft Environmental Impact Report (DEIR) for the *Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of Table A Amount* (SCH No. 1998041127), and found that the document adequately and thoroughly discusses the proposed project and its impacts. The DEIR discusses the effects of the project on the environment and State Water Project (SWP) and uses baseline conditions consistent with those being considered for inclusion in the DEIR. DWR is currently preparing for the *Monterey Amendment to the State Water Project Contracts (including Kern Water Bank Transfer and Other Contract Amendments and Associated Actions as Part of a Proposed Settlement Agreement in Planning and Conservation League v. Department of Water Resources* (SCH No. 2003011118), referred to hereafter as "Monterey Plus." 2

The DEIR provides a good discussion of the relationship between the 41,000 acre-feet Table A transfer and the current Monterey Plus process. DWR will analyze the effects of all Table A transfers that were part of the Monterey Amendment to the SWP contracts in the Monterey Plus EIR. The proposed CLWA 41,000 acre-feet Table A transfer will be included in this analysis. 3

One of the tools being used by DWR to assess potential impacts associated with these Table A transfers is the CALSIM II model. DWR acknowledges that CLWA used an earlier model, DWRSIM, to analyze the effect of the 41,000 acre-feet transfer; however, DWR will use the next generation model, CALSIM II, to assess potential impacts associated with all Table A transfers in its DEIR for Monterey Plus. The use of CALSIM II may cause slight changes in results, which may lead DWR to different conclusions than the conclusions made by Castaic Lake Water Agency in the current DEIR. 4

As final comments, DWR notes that this DEIR adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations. 5

Coordination between DWR and CLWA is essential to produce accurate environmental documentation that leads to informed decision-making and full public disclosure as the California Environmental Quality Act mandates. DWR appreciates inclusion and consultation in the early stages of preparation of this DEIR. Please ensure that DWR's Division of Environmental Services and SWP Analysis Office receive copies of the Final EIR. 6

Sincerely,

Barbara McDonnell

Barbara McDonnell, Chief
Division of Environmental Services

State of California—Business, Transportation and Housing Agency ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
28648 The Old Road
Valencia, CA 91355
(661)294-5540
(800) 735-2929 (TT/TDD)
(800) 735-2922 (Voice)

SCH#1998041127

July 6, 2004

File No.: 540.10868.9367

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95812-3044

This is in response to the Notice of Preparation of a Draft Environmental Impact Report, dated June 18, 2004 regarding the Castaic Lake Water District Supplemental Water Project Transfer.

The proposed project will be located in the unincorporated area of Los Angeles County and within the jurisdiction of the California Highway Patrol. Therefore, traffic enforcement and accident investigation will be the responsibility of our agency.

In reviewing this project, our concern was what effect these projects will have on traffic. It is our opinion there should not have a significant impact. 7

Sergeant B. A. Dibene will be our Department's contact person for the project. If you have any questions or concerns, he may be reached at the above address or telephone number.

Thank you for allowing us the opportunity to comment on this project.

Sincerely,

For E. CONLEY, Captain
Commander
Newhall Area

RECEIVED
JUL 23 2004
STATE CLEARING HOUSE

Clear 8-16-04 e

11

State Water Contractors

455 Capitol Mall, Suite 220 • Sacramento, CA 95814-4409
Terry L. Erlewine - General Manager (916) 447-7357 • FAX 447-2734

Directors

Russell E. Fuller, President
Antelope Valley-East Kern Water Agency
Vince Wong, Vice President
Alameda County FC&WCD, Zone 7
Roy A. Stokes, Secretary-Treasurer
Central Coast Water Authority
Stephen N. Arakawa
Metropolitan Water District of Southern California
Thomas N. Clark
Kern County Water Agency
Thomas R. Hurlbut
Tulare Lake Basin Water Storage District
Thomas E. Levy
Coachella Valley Water District
Dan Masnada
Castaic Lake Water Agency
David B. Okita
Solano County Water Agency

August 16, 2004

Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Dear Ms. Cotton:

This letter provides comments on the Draft EIR entitled "Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount," on behalf of the State Water Contractors ("SWC"). As you know, the SWC represents nearly all contractors that receive water from the State Water Project ("SWP"). Thus, the SWC is vitally interested in the proper application of CEQA to water transfers under Articles 41 and 53 of the SWP water service contracts and, in general, with respect to operations of the SWP. 8

The SWC commends Castaic Lake Water Agency ("Castaic") for going far beyond what is required by CEQA and the appellate court decision that invalidated Castaic's earlier EIR for the 41,000 acre foot water transfer. Both the trial court and the appellate court found that all of the environmental analyses contained in that first EIR complied with CEQA, except for reliance (through "tiering") on the original Monterey Amendment EIR which had later been found inadequate by the Third District Court of Appeal. Nevertheless, Castaic has taken a comprehensive, fresh look at the transfer's potential impacts in a single document, when arguably a short supplement eliminating the references to the Monterey Amendment would have sufficed. By so doing, you have provided decision makers with a complete picture of the transfer and its impacts so they can make new informed decisions related to the project.

During scoping, several parties made suggestions that this Supplemental EIR should not move forward until the new EIR for the Monterey Amendment had been completed. The SWC suggests that Castaic should respond more directly to these contentions. Those contentions overlook or intentionally mischaracterize a central element of the Monterey EIR litigation Settlement Agreement. The Settlement Agreement explicitly states that the SWP will operate under the Monterey Amendment while the new EIR is prepared. This includes operation 9

under Article 53, pursuant to which the Kern County Water Agency consented to up to 130,000 acre feet of agriculture to urban transfers. Suggestions that consideration of such transfers must await completion of the new Monterey Plus EIR would render this element of the Settlement Agreement a nullity, contrary to the clear understanding of the signatories to that document. 9

Further, nothing in the Settlement Agreement affects the rights of contractors and DWR to agree to and proceed with implementing long-term transfers of Table A Amounts. In this respect, the draft Supplemental EIR contains a confusing statement to the effect that certain terms in the Settlement Agreement constitute a "specific exclusion" of the 41,000 acre foot transfer from "any prohibitions against transfers of Table A amounts by the Settlement Agreement." The Settlement Agreement does not contain any such prohibitory language. Thus, specific exclusions are not necessary. The final Supplemental EIR for the 41,000 acre foot transfer should point out that several other Table A transfers have been consummated since the Settlement Agreement was executed and that the Settlement Agreement contains no language that could be interpreted as prohibiting such transactions or the 41,000 acre foot transfer. 10

The SWC suggests that the final Supplemental EIR reference the July 14, 2004, trial court opinion in *California Water Network v. Castaic Lake Water Agency*, which discusses the proper lead agency for projects similar to the 41,000 acre foot transfer. In that case, the Court held that Castaic was the proper lead agency for a water banking project, stating "Castaic is the agency most deeply involved in the planning, and execution of this project." The trial court rejected the argument that DWR was the only proper lead agency when actions concerning the SWP are involved. As in the *California Network Case*, Castaic is the agency promoting, planning, and primarily carrying out the 41,000 acre foot transfer. It is also the agency with the greatest knowledge about growth inducement and similar local issues. State government, including DWR, has no role in local land use planning and the local water supply issues that arise from planning decisions. The plenary role of local agencies in the land use arena should be pointed out in the final Supplemental EIR. 11

The SWC has reviewed the water supply analysis set forth in the draft Supplemental EIR and believes it will provide valuable information for decision makers in determining how the 41,000 acre foot transfer will affect Castaic's ability to meet the future water needs engendered by Los Angeles County's and local cities' land use decisions. The SWC suggests that the final Supplemental EIR reemphasize that urban water suppliers do not make the land use and growth decisions; but, instead, try to provide needed water supplies in the most economical and environmentally sound manner. From this standpoint, the draft Supplemental EIR provides the best information reasonably available from recognized scientific sources. More than that can not be asked of lead agencies dealing with highly complex natural and man made water systems. 12

Thank you for the opportunity to comment on the draft Supplemental EIR. If you have any questions, please contact me at (916) 447-7357.

Sincerely,

Terry L. Erlewine
General Manager

cc: Mr. Lester A. Snow, DWR
SWC Members

City of
Santa Clarita

23920 Valencia Blvd.
Suite 300
Santa Clarita
California 91355-2196
Website: www.santa-clarita.com

Phone
(661) 259-2489
Fax
(661) 259-8125

July 20, 2004

Ms. Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Subject: Draft Environmental Impact Report for the Transfer of Supplemental Water

Dear Ms. Cotton:

Thank you for allowing the City of Santa Clarita to comment on the Draft Environmental Impact Report for the Supplemental Water Project Transfer. At this time, the City of Santa Clarita has no comments on the draft document regarding this project. 13

Thank you again for this opportunity to comment on the project. Please contact Fred Follstad, AICP, Senior Planner or myself at (661) 255-4330 if you have any questions.

Sincerely,

Vincent P. Bertoni, AICP
Interim Director of Planning and Building Services

VPB:FLF:lep
pbs\current\agency monitoring\CLWA EIR Comments 0704

cc: Mayor Kellar and Members of the City Council
Chair Trautman and Members of the Planning Commission
Chair Hauser and Members of the Parks, Recreation and Community Services Commission
Kenneth R. Pulskamp, City Manager
Michael Murphy, Intergovernmental Relations Officer
Fred Follstad, AICP, Senior Planner

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COUNTY OF LOS ANGELES
DEPARTMENT OF PARKS AND RECREATION
"Creating Community Through People, Parks and Programs"
Tim Gallagher, Director

August 16, 2004

Ms. Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Dear Ms. Cotton:

ENVIRONMENTAL IMPACT REPORT FOR THE
CASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT
TRANSFER OF 41,000 ACRE-FEET OF TABLE A AMOUNT PROJECT

The Environmental Impact Report (EIR) for the Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of Table A Amount has been reviewed for potential impacts on the facilities of this Department. The Castaic Lake Recreation Area, a recreational lake that is managed and operated by the Department, would be directly affected by the project. Common activities at the lake include sailing, power boating, water and jet skiing, fishing, non-power boating, and canoeing. That Department offers the following comments regarding the EIR:

- Page 3.0-10 of the Draft EIR states that the "DWR's operation of these lakes (Quail, Pyramid, and Castaic) generally would not change with the Project, although the project would result in additional water transported through these lakes in about the same months the water is delivered to CLWA." Page 3.15-41 also confirms that "the amount of water stored at Castaic Lake would not be expected to change as a result of the Project." The optimum operating level of Castaic Lake is 1515 above sea level. Scheduling of the release of the SWP water should be done so to maintain this level. Assuming that this operating criterion and the physical conditions of the lake do not change as a result of the project, adverse impacts to Department facilities are not anticipated. The Department requests that any future changes in the operating criteria of the lake be coordinated directly with Mr. Dana Robertson, Parks Superintendent. Contact information is provided below: 14

  Mr. Dana Robertson, Parks Superintendent
  Castaic Lake Recreation Area
  32132 Castaic lake Drive
  Castaic, CA 91384
  Phone (661) 257-4050 / Fax (661) 257-3759

- Section 3.12.3 of the Draft EIR states that the implementation of the project will have no direct or indirect impacts to recreation within the CLWA. However, the potential development (Page 4-2) for 106, 700 new residents and 35,600 new units to house them may impact future recreation opportunities for those within the CLWA, and in turn, to future Castaic Lake operations. 15

Thank you for including this department in the review of this notice. If we may be of further assistance, please me at (213) 351-5133.

Sincerely,

Bryan Moscardini, Park Project Coordinator

cc: Kathleen Ritner, DPR
Dana Robertson, DPR
Boyd Horan, DPR

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 890-4330

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

August 9, 2004

Ms. Mary Lou Cotton
Water Resource Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Dear Ms. Cotton:

DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT FROM KERN COUNTY WATER AGENCY – "CASTAIC" (EIR #2028/2004)

The Draft Environmental Impact Report for the above project has been reviewed by the Planning Division, Land Development Unit, and Forestry Division of the County of Los Angeles Fire Department. The following are their comments: The project site that is reflective of our statutory responsibilities encompasses approximately 180 square miles of land in northwestern Los Angeles County in unincorporated Castaic.

LAND DEVELOPMENT UNIT: 16
The County of Los Angeles Fire Department, Land Development Unit appreciates the opportunity to comment on this project. However, this project does not propose structures or any other improvements that appear to have a significant impact that requires a comment from the Land Development Unit.

Specific fire and life safety requirements for the construction phase will be addressed at the Building and Fire Safety plan check. There may be additional fire and life safety requirements during this time. Should any questions arise regarding subdivision, water systems or access, please contact Inspector Marvin Dorsey at (323) 890-4243.

FORESTRY DIVISION: 17
The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. The areas germane to the statutory responsibilities of the Los Angeles County Fire Department, Forestry Division have been addressed.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

DAVID R. LEININGER, CHIEF, FORESTRY DIVISION
PREVENTION BUREAU

DRL:sc

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS	BRADBURY	CUDAHY	HAWTHORNE	LA MIRADA	MALIBU	POMONA	SIGNAL HILL
ARTESIA	CALABASAS	DIAMOND BAR	HIDDEN HILLS	LA PUENTE	MAYWOOD	RANCHO PALOS VERDES	SOUTH EL MONTE
AZUSA	CARSON	DUARTE	HUNTINGTON PARK	LAKEWOOD	NORWALK	ROLLING HILLS	SOUTH GATE
BALDWIN PARK	CERRITOS	EL MONTE	INDUSTRY	LANCASTER	PALMDALE	ROLLING HILLS ESTATES	TEMPLE CITY
BELL	CLAREMONT	GARDENA	INGLEWOOD	LAWNDALE	PALOS VERDES ESTATES	ROSEMEAD	WALNUT
BELL GARDENS	COMMERCE	GLENDORA	IRWINDALE	LOMITA	PARAMOUNT	SAN DIMAS	WEST HOLLYWOOD
BELLFLOWER	COVINA	HAWAIIAN GARDENS	LA CANADA FLINTRIDGE	LYNWOOD	PICO RIVERA	SANTA CLARITA	WESTLAKE VILLAGE
							WHITTIER

RESOURCE MANAGEMENT AGENCY

County of Ventura

Planning Division
Christopher Stephens
Director

August 16, 2004

Post-it® Fax Note 7671	Date 8/16/04	# of pages ▶ 2
To M.L. Cotton	From C. Morehouse	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

FAX #: (661) 297-1610

Subject: Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 acre-feet of Table A Amount; Draft EIR

Thank you for the opportunity to review and comment on the subject document. Attached are the comments that we have received resulting from intra-county review of the subject document. 18a

Your proposed responses to these comments should be sent directly to the commentator, with a copy to Carl Morehouse, Ventura County Planning Division, L#1740, 800 S. Victoria Avenue, Ventura, CA 93009.

If you have any questions regarding any of the comments, please contact the appropriate respondent. Overall questions may be directed to Carl Morehouse at (805) 654-2476.

Sincerely,

B Smith, FOR

Christopher Stephens
County Planning Director

G:\WPC\WINWORD\1H4-7.04.doc

Attachment

County RMA Reference Number 04-053

COUNTY OF VENTURA
PUBLIC WORKS AGENCY
Watershed Protection District
Water Resources Division

MEMORANDUM

July 21, 2004

To: Carl Morehouse
RMA Planning Division

From: Lowell Preston
Water Resources Division

Subject: **RMA 04-0053, Draft EIR - Supplemental Water Project Transfer of 41,000 acre-ft of Table A**

Project Description

The project authorizes the Castaic Lake Water Agency (CLWA) to use 41,000 af of water from the State Water Plan (SWP) Table A amount for water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. Water will be transferred from the Kern County Water Agency. The project does not include the construction of any additional SWP facilities or new facilities in the CLWA. CLWA is the lead agency and has for the most part determined to have less than significant impacts.

Comment

None.

18b

Stanislaus County
Striving to be the Best

CHIEF EXECUTIVE OFFICE
1010 10th Street, Suite 6800, Modesto, CA 95354
P.O. Box 3404, Modesto, CA 95353-3404
Patricia Hill Thomas
Interim Chief Executive Officer
Phone: 209.525.6333 Fax 209.544.6886

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

August 9, 2004

Mary Lou Cotton
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 93150

SUBJECT: **ENVIRONMENTAL REFERRALS-AMENDED NOTICE OF COMPLETION-CASTAIC LAKE WATER AGENCY-SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF TABLE A AMOUNT, STATE CLEARINGHOUSE #1998041127**

Ms. Cotton:

The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has no comments at this time. 19

The ERC appreciates the opportunity to comment on this project.

Sincerely,

W. Richard Jantz, Deputy Executive Officer
Raul Mendez, Senior Management Consultant
Environmental Review Committee

cc: ERC Members

BIA
Greater L.A. / Ventura Chapter

Building Industry Association of Southern California
24005 Ventura Boulevard
Calabasas, California 91302
818.591.2001
fax 818.591.0072
http://www.biasc.org

July 28, 2004

Mr. Dan Masnada, General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

RE: Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 AF of Table A

Dear Mr. Masnada:

On behalf of the approximately 400 companies and their representative employees who make up the Greater LA/Ventura Chapter of the Building Industry Association of Southern California, thank you for the opportunity to comment on CLWA's Draft EIR on the Supplemental Water Project Transfer of 41,000 Acre-Feet of Table A.

CLWA's transfer of 41,000 acre-feet of water from Kern County in 1999 represented wise water planning for the Santa Clarita Valley. The BIA is pleased to see that the CLWA has produced this new EIR so that the litigation pending on the 1999 transaction can finally be resolved. 20

We are in the midst of a housing shortage in our State, especially in the Los Angeles and Ventura County regions. With housing supply in high demand it is critical for agencies such as CLWA to plan for future infrastructure needs. The continuance of such planning and water management programs is designed to enable the agency to meet its mission of providing water for anticipated growth in the Santa Clarita Valley. We support the Agency board and staff in continuing that mission.

CLWA has taken the proper steps to insure that its current users as well as future users will be assured safe and reliable water. The Building Industry Association would like to commend the CLWA for taking these preemptive actions.

Thank you once again for the opportunity to provide comments. Please feel free to contact us if you have any questions or comments.

Sincerely,

Ray Pearl
Executive Officer

Terra Donlon
Director of Government Affairs

An Affiliate of the National Association of Home Builders and the California Building Industry Association

by fax
30 pgs

california water impact network

Carolee K. Krieger president
Dorothy Green secretary
Joan H. Wells treasurer
Melinda Cheatham director
Yvon Chouinard director
Hap Dunning director
Michael Jackson director
Huey Johnson director
Imaging Spence director

August 11, 2004

Mary Lou Cotton, Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

RE: Comments on Castaic Lake Water Agency Supplemental Water Project Environmental Impact Report on the Proposed Transfer of 41,000 Acre-Feet of Table A Amount, State Clearinghouse Number 1998041127

Dear Ms. Cotton;

The California Water Impact Network (C-WIN) would like to submit comments on the Castaic Lake Water Agency's EIR for the proposed permanent transfer of 41,000 Acre-feet of Table A allocation from the Kern County Water Agency to the Castaic Lake Water Agency. C-WIN is opposed to the proposed transfer on the following grounds:

1. **CLWA is the Wrong Lead Agency and Must Wait for DWR to Complete the new Monterey Plus EIR** 21

Under the principles articulated by the 3rd District Court of Appeal in the PCLvDWR case (#CO24576), CLWA is not the proper lead agency in this transaction which has tremendous statewide significance as it necessarily must address the Monterey Amendments. DWR is the only proper lead agency.

This transfer is not consistent with the PCLvDWR settlement, reached in May of 2003, under which DWR has already commenced its own statewide review of the Monterey Amendments. Until the new EIR, known as "Monterey Plus" is finalized and the project is approved, the only transfers recognized as final are those listed in attachment E of the settlement. This is not one of those transfers and therefore would be illegal until completion and certification of the new "Monterey Plus" EIR. The CLWA proposed EIR is potentially on a collision course with DWR's "Monterey Plus" EIR and could produce a result that is at odds with the court mandated EIR on the Monterey Amendments currently being produced by DWR. 22

C-WIN incorporates the January 10, 2002 letter from attorney Robert H. Clark to then General Manager of CLWA Robert C. Sagehorn where he points out this problem and warns,

> "Alternatively, CLWA may choose to create an EIR that does not rely in any way on Monterey Amendment provisions, and then complete the 41,000 AF water entitlement transfer outside of Monterey. There are adverse financial implications to this course of action, and any water transfer outside of Monterey—assuming it might be acceptable to Kern County Water Agency and Wheeler Ridge—*could be made subject to agricultural water deficiency provisions in the same manner that the Devil's Den water entitlement transfer was originally made subject to those agricultural water deficiency provisions." (emphasis added)* (See Attachment A.)

C-Win also incorporates a letter from attorney Alyse M. Lazar to DWR Director Lester Snow dated May 18, 2004 and the response from Mr. Snow's office dated June 17, 2004. In the response letter, Mr. Snow says,

"DWR's treatment of the transfer of Table A amounts from Kern County Water Agency to Castaic

P.O. Box 5462, Santa Barbara, CA 93150, email: carolee.krieger@cox.net, Phone: 805.969.0626, Fax 805.565.3194

Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph III.C.4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as actions that relate to the potential environmental impacts approving the Monterey Amendments." Section 1(0) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 AF of water from Kern County Water Agency to the Castaic Lake Water Agency, approved by DWR on March 31, 1999." DWR has not completed any draft or final analysis regarding these transfers." (See Attachment B.) 22

2. This Proposed Transfer is Currently the Subject of Litigation 23

The CLWA EIR states that CLWA has 95,200 AF of Table A SWP water. This is not accurate as the 41,000 AF from the sale by KCWA to CLWA under the old Monterey Amendments is the subject of ongoing litigation. Allowing development of new homes based on this challenged and uncertain source of water is not prudent or reasonable.

C-WIN is currently a plaintiff in several cases against CLWA opposing proposed transfers that depend on the 41,000 AF transfer mentioned above. Any transfer that is dependent on a water source that is not free and clear is not reliable. C-WIN hereby incorporates our ongoing case against CLWA, the Department of Water Resources (DWR) and Semitropic Water Storage District, Civ No. 215327. Castaic is proposing to transfer 24,000 AF of its 2002 allocation of it's State Water Project (SWP) water, heavily relying on and siting the 41,000 AF transfer as complete to help justify the 24,000 AF transfer, and store it in the Semitropic Water Bank. This case is currently going to appeal.

As the EIR states, under current law, urban water suppliers must maintain updated water management plans (Urban Water Management Plan). CLWA's UWMP is currently being challenged in court for claiming to have more water than is actually available. Public comments submitted on the recently finalized DWR "SWP Delivery Reliability Report" underscore the continuing problem that contractor estimates of reliability have frequently promised more water than is actually obtainable for building purposes. This EIR is representative of the "paper water" critically described in the 3rd District Appeal Court decision mentioned above. 24 25

3. Water Reliability as Stated in the Proposed EIR is Not Accurate

This EIR, along with many other proposed developments in California, is dependent on the analysis by DWR and its State Water Project Delivery Reliability Report, Final 2002, to give planners and the public accurate information on SWP water reliability. These numbers are critical because planners and the public count on them when considering water availability to meet future demand. This Reliability Report has been seriously criticized for overstating actual available supply, questionable modeling and simulations, and lack of proper peer review. C-WIN hereby incorporates this Final Report, including all of the published comment letters in Appendix E. Please make a special note of those letters submitted by Senator Michael Machado, Robert Wilkinson, Arve Sjovold, Joan Wells, Dr. Peter Gleick and myself.

C-WIN also incorporates "A Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California" submitted by the California Bay Delta Authority Science Program Association of Bay Governments, December 4, 2003. This document raises significant questions about the accuracy of DWR's Delivery Reliability Report.

In addition, C-WIN incorporates two letters, the first from Systems Analyst Arve R. Sjovold dated November 11, 2003, titled, "Analysis of SWP Reliability of Delivery". (See Attachment C.) The second is from PCL President Sage Sweetwood dated February 2, 2004 to Delores Brown of DWR raising grave concerns about the validity of the DWR model known as CALSIM II. (See Attachment D.)

C-WIN incorporates a table prepared by DWR dated 9/16/02 titled "Historical versus Modeled Table A Deliveries and Demands." This is a draft document released by DWR. The modeled deliveries are significantly above the actual historical deliveries...graphically showing what the Third District Court of Appeal was referred to when they sited the "paper water" in the system. (See Attachment E.)

30

4. **Significant Cumulative Impacts Not Recognized** 26

CLWA is continuing to speculatively and irresponsibly approve proposed developments incrementally based on the hope that they will successfully acquire this 41,000 AF of SWP Table A allocation from the Kern County Water Agency. C-WIN hereby incorporates the following comment letters to show just how much is being proposed incrementally using this contended source as final. The cumulative impacts are not being considered. This is very significant when the true reliability numbers for the actual water supply are factored in as well.

- The C-WIN January 1, 2004 objection letter to the CLWA on the Negative Declaration for a proposed 35,000 AF transfer for a Groundwater Banking Project that depends on this same 41,000 AF transfer.
- The C-WIN February 3, 2004 objection letter to the LA County Regional Planning Department on the proposed West Creek Project #98-008 to build 2,545 residential units that depend on this same 41,000 AF transfer.
- The C-WIN February 26, 2004 objection letter to the County of Los Angeles Regional Planning Department regarding the proposed River Valley Project No.00-196 to build 1,444 residential units, 1.5 million square feet of non-residential mixed-use space, along with a 7 acre elementary school and public recreational facilities; this project also relies on this 41,000 acre foot transfer.
- The C-WIN May 4, 2004 letter to the Planning and building Services Department of the City of Santa Clarita regarding the proposed River Park Project No. 02-175 to build 1,183 residential units, heavily relying on this same 41,000 AF transfer.

This 41,000 AF water transfer should be rejected until the EIR for the new "Monterey Plus" has been finalized and adopted. When and if you do proceed, it is required that DWR be the lead agency. 27

CWN hereby incorporates all other comments by reference opposing this transfer submitted on this CLWA EIR proposing to permanently transfer 41,000 AF of Table A allocation from the Kern County Water Agency to the Castaic Lake Water Agency. 28

Sincerely,

Carolee Krieger

Carolee K. Krieger,
President

Attachments;

A. Letter from Robert H. Clark to CLWA Manager Robert C. Sagehorn, dated 1.10.02
B. Correspondence between Alyse Lazar (5.18.04) and DWR Director Lester Snow (6.17.04)
C. Analysis of SWP Reliability of Delivery by Arve Sjovold, 11.11.03
D. Letter from Sage Sweetwood to Delores Brown, 2.2.04
E. DWR Historical versus Modeled Table A Deliveries and Demands (Draft), 9.16.02

(A)

LAW OFFICES
ROBERT H. CLARK

[redacted]
SANTA CLARITA, CA [redacted]

TELEPHONE: [redacted]
FACSIMILE: [redacted]

January 10, 2002

To: Robert C. Sapahorn, General Manager
Castaic Lake Water Agency

From: Counsel

Subject: Today's Court of Appeal Decision in Friends of the Santa Clara River vs. Castaic Lake Water Agency

Further environmental work needs to be done to secure CLWA's March, 1999 acquisition of 41,000 acre feet of State Project water entitlement from Wheeler Ridge-Maricopa Water Storage District.

The Court of Appeal this afternoon found that all challenges to CLWA's environmental document on the above-specified water entitlement transfer were "without merit," except for the legal implications of the last year's PCL case wherein another Court of Appeal ordered decertification of the Monterey Amendment EIR. Specifically, the Court of Appeal in our current case wrote: "If the PCL/tiering problem had not arisen, we would have affirmed the [Superior Court] judgment in favor of CLWA)".

CLWA's 41,000 acre feet water entitlement transfer is now in the hands of the Los Angeles Superior Court, unless CLWA chooses to and receives California Supreme Court acceptance of an Agency appeal from the current Court of Appeal judgment.

It is in the Los Angeles Superior Court's discretion whether to enjoin, reverse, or condition all or portions of CLWA's 41,000 acre feet water entitlement acquisition pending completion of a new and adequate environmental document that does not tier on the Monterey Amendment EIR. In the opinion of the Court of Appeal, CLWA may be able to "cure the PCL problem by awaiting action by the State DWR complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or addendum to EIR tiering upon a newly certified Monterey Amendment EIR." Of course, as we know, the course suggested in the preceding sentence may be impossible to complete for a period of years, due to the inherent delays involved with DWR's preparation of a new EIR on the Monterey Agreement.

Alternatively, CLWA may choose to create an EIR that does not rely in any way on Monterey Amendment provisions, and then complete the 41,000 acre feet water entitlement transfer outside of Monterey. There are adverse financial implications

to this course of action, and any water transfer outside of Monterey Accounting it might be acceptable to Kern County Water Agency and Wheeler Ridge could be made subject to agricultural water deficiency provisions in the same manner that the Devils Den's water entitlement transfer was originally made subject to these agricultural water deficiency provisions.

Bottom line, this decision is not a good development; however, it creates an opportunity to preserve the Wheeler Ridge water transfer pending completion of other environmental documents as described above, provided that the Los Angeles Superior Court determines that such a course of action is appropriate under CEQA.

The text of the decision was received at approximately 3 p.m. today, is some 20 pages in length, and will require further analysis. That said, CLWA has essentially been made a victim of the Monterey Amendment environmental deficiencies as first outlined in the year 2000 decision in the PCL case.

(B)

LAW OFFICE OF
ALYSE M. LAZAR
Attorney at law
3075 East Thousand Oaks Blvd., Suite 100
Westlake Village, California 91362

Admitted to practice:
STATE BAR OF CALIFORNIA
NEW YORK STATE BAR

Telephone: (805) 496-5390
Facsimile: (805) 496-7462

May 18, 2004

Lester Snow, Director
Department of Water Resources
Room 1115-1
P.O. Box 942836
Sacramento, California 94236

RE: New Monterey Agreement EIR

Dear Director Snow:

Pursuant to the Court decision in *Planning & Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 (hereafter "*PCL*"), the Department of Water Resources is required to prepare a new Environmental Impact Report regarding all aspects of the Monterey Amendments. I understand that you will be overseeing this process.

The Settlement Agreement that was entered into between all of the parties to the *PCL* case on May 5, 2003 set forth various requirements for the EIR. According to Attachment E-1 of this Settlement Agreement, the parties specifically excluded the 41,000 afy entitlements purchased by Castaic Lake Water Agency ("CLWA") emanating from the Monterey Amendments from the list of final transfers. It is therefore my understanding that your office will be evaluating the environmental impacts of this 41,000 afy transfer as part of the Environmental Impact Report for your project (the Monterey Amendments Project.) In fact, page 11, paragraphs III C.4 of the Settlement Agreement mandates DWR to analyze the potential environmental effects relating to CLWA's project ("the Kern-Castaic Transfer").

As you may also be aware, the EIR prepared by CLWA for the 41,000 afy transfer was decertified by the Los Angeles Superior Court on November 1, 2002 in *Friends of the Santa Clara River v. Castaic Lake Water Agency*, Los Angeles County Superior Court Case No. BS 056954. In order for CLWA's new EIR to be legally sufficient and in conformance with the appellate court's decision, it must contain an analysis of the potential environmental effects of the Kern-Castaic Transfer on the entities that have and will continue to lose this 41,000 afy source of water due to the transfer as well as the impacts on the State Water Project ("SWP") system resulting from the movement of this water from its source in Kern County to Santa Clarita. Logically and in conformance with CEQA, both DWR's EIR and CLWA's EIR must contain an analysis of the impacts from this loss of water upon Kern County agricultural users as well as all others affected by the transfer.

I currently represent Friends of the Santa Clara River in the *Friends of the Santa Clara River v. Castaic Lake Water Agency*, litigation. In the Judgment Granting Peremptory Writ of Mandate in the Friends' case, the Court ordered that it " retains jurisdiction until respondent Castaic Lake Water Agency certifies an Environmental Impact Report that complies with the California Environmental

May 18, 2004 letter to Dir. Snow, Dept of Water Resources

Quality Act and is consistent with the views expressed by the Court of Appeal Opinion filed January 10, 2002, Case No. B 145283."

For these reasons, I am requesting that you provide me with a copy of any analysis performed to date by DWR regarding the potential environmental impacts of the Kern-Castaic transfer, whether in draft or final form.

Additionally, please advise me of the procedural steps that DWR will take before making a determination whether or not to approve the Kern-Castaic transfer as a "final" transfer and the criteria that will be utilized for making this determination. If there is a proposed schedule for the completion of the Monterey Amendments EIR and/or for these procedural steps for determining whether or not to approve the Kern-Castaic transfer as a long-term transfer, please provide me with a copy of same.

I would appreciate receiving this information from you by May 28, 2004. If you have questions regarding the above or would like to discuss the matter, please call me at (805) 496-5390. Thank you for your anticipated assistance. I look forward to hearing from you.

Very truly yours,

Alyse M. Lazar

cc: Delores Brown

STATE OF CALIFORNIA – THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

JUN 17 2004

Alyse M. Lazar, Esq.
3075 East Thousand Oaks Boulevard, Suite 100
Westlake Village, California 91362

Dear Ms. Lazar:

In response to your letter of May 18, 2004, the Department of Water Resources (DWR) is preparing an Environmental Impact Report (EIR) on the Monterey Amendments and the Settlement Agreement resulting from the Court of Appeal decision in *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892.

DWR's treatment of the transfer of Table A amounts from Kern Country Water Agency to Castaic Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph III.C.4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as actions that relate to the potential environmental impacts of approving the Monterey Amendments." Section 1(D) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 acre feet of water from Kern Country Water Agency to the Castaic Lake Water Agency, approved by DWR on March 31, 1999." DWR has not completed any draft or final analysis regarding these transfers. Attached is an estimated schedule for completion of the EIR.

The Settlement Agreement (Section III.E) also provides "with respect to Section III.(C)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation. The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

If you would like further information regarding the EIR on the Monterey Amendments and the Settlement Agreement, please contact Delores Brown at (916) 227-2407.

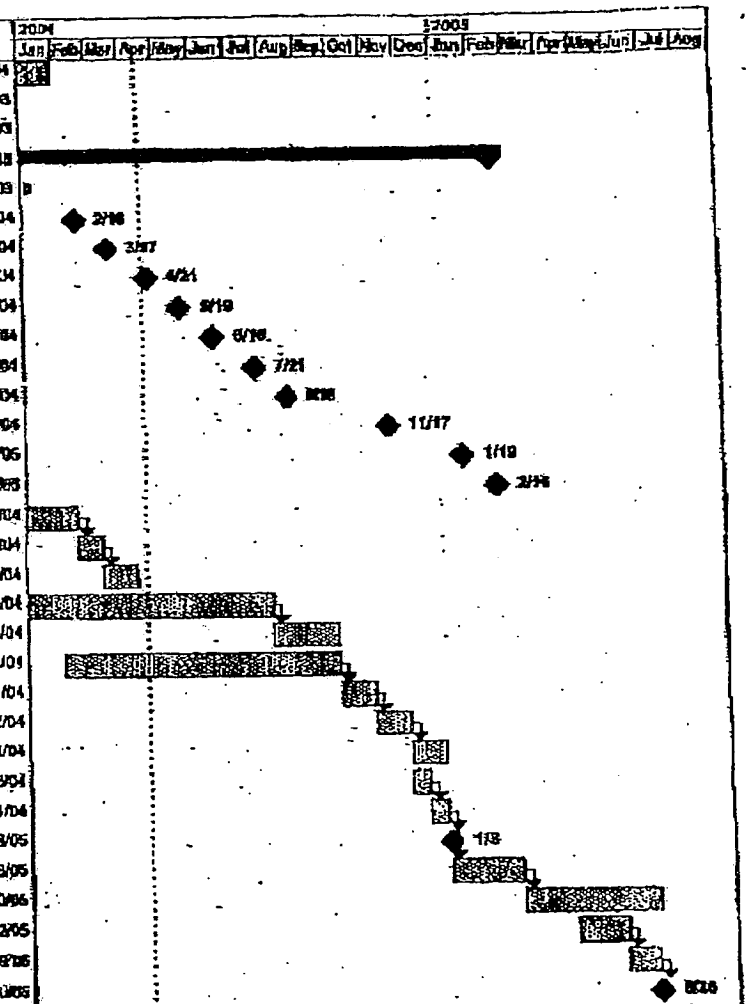
Sincerely,

Gerald E. Johns

for Lester A. Snow
Director

Attachment

ID	Task Name	Start	Finish
1	Conduct non-model dependent environmental analyses	Wed 10/1/03	Fri 1/30/04
2	DWR Review of selected sections	Mon 11/3/03	Fri 11/7/03
3	EIP Revise	Mon 11/10/03	Wed 11/12/03
4	EIR Committee Meetings	Wed 11/19/03	Wed 2/16/05
5	Meeting 1	Wed 11/19/03	Wed 11/19/03
6	Meeting 2	Wed 2/18/04	Wed 2/18/04
7	Meeting 3	Wed 3/17/04	Wed 3/17/04
8	Meeting 4	Wed 4/21/04	Wed 4/21/04
9	Meeting 5	Wed 5/19/04	Wed 5/19/04
10	Meeting 6	Wed 6/16/04	Wed 6/16/04
11	Meeting 7	Wed 7/21/04	Wed 7/21/04
12	Meeting 8	Wed 8/18/04	Wed 8/18/04
13	Meeting 9	Wed 11/17/04	Wed 11/17/04
14	Meeting 10	Wed 1/19/05	Wed 1/19/05
15	Meeting 11	Wed 2/16/05	Wed 2/16/05
16	Prepare Admin Draft EIR Part 1	Wed 10/1/03	Mon 2/16/04
17	DWR Review	Tue 2/17/04	Tue 3/2/04
18	EIP Revise	Wed 3/10/04	Thu 4/8/04
19	Conduct CALSIM modeling & Post Processing	Mon 12/1/03	Mon 8/2/04
20	Conduct Model-dependent Environmental Analysis	Tue 6/3/04	Fri 10/1/04
21	Prepare Admin Draft EIR Part 2	Mon 2/2/04	Fri 10/1/04
22	DWR Review	Mon 10/4/04	Mon 11/1/04
23	EIP Revise	Tue 11/2/04	Wed 12/1/04
24	Prepare Draft EIR	Thu 12/2/04	Fri 12/31/04
25	DWR Review	Thu 12/2/04	Thu 12/16/04
26	EIP Revise	Fri 12/17/04	Fri 12/31/04
27	Publish DEIR	Mon 1/3/05	Mon 1/3/05
28	Public Review of Draft EIR	Mon 1/3/05	Thu 3/3/05
29	Prepare Final EIR	Fri 3/4/05	Thu 6/30/05
30	DWR Review	Wed 4/28/05	Thu 6/2/05
31	EIP Revise	Fri 6/3/05	Wed 6/29/05
32	Publish FEIR	Thu 6/30/05	Thu 6/30/05



Project: Monterey Plus EIR Schedule
Date: Fri 4/16/04

Task | Split | Progress | Milestone | Summary

P:\WP Only\10000-8700\Schedule\Monterey Plus EIR

Page 1

(C)

ANALYSIS OF SWP RELIABILITY OF DELIVERY

**(Based on the DWR Report:
"The State Water Project Delivery Reliability Report,
2002, Final)**

November 11, 2003

Introduction

The California Department of Water Resources (DWR) released its final draft of a report presenting its analyses of the reliability of delivery of State Water Project (SWP) delivery reliability. The analyses are based on a series of simulations performed with its CALSIM II model, which is a combination of two previously independent models, DWRSIM developed by DWR for the SWP, and PROSIM developed by the Bureau of Reclamation (BOR) for the Central Valley Project. It was deemed necessary to merge these two models because the joint operations in the Delta from which the water is exported have become very integrated.

The CALSIM II model is also being proposed as the primary analytic tool to evaluate the impacts of the SWP under the Monterey Amendments in an EIR now underway. The adequacy of this model is now under scrutiny as part of this EIR process and questions have been raised as to how accurate its calculations are and how well those calculations have verified by model calibrations.

This analysis of SWP reliability is based on the calculations done with CALSIM II as reported in DWR's report as stated above. This report does not assume that the calculations are necessarily accurate but there still is much to be learned from these results even if their accuracy is in question.

This analysis first explores the character of the statistical output of the CALSIM II published results. Then we explore the kinds of interpretations that can be deduced from these results once we understand their statistical character. Some conclusions are then drawn about SWP delivery reliability in general and under varying circumstances that can be expected among the several SWP contractors receiving this water and what they can truly rely on. However, we must stress that even these conclusions are preliminary and still subject to change once the CALSIM II model has been properly calibrated and peer reviewed.

CALSIM Calculations

The basis for the statistical analysis in this report is the CALSIM II output record presented in the referenced report as Table B-3, "Study 2001 SWP Delta water delivery," which provides calculations of the annual export of SWP water over the 73 year period from 1922 to 1994. The reference to 2001 in the Table title refers to the condition that all actual hydrologic records for this period have been adjusted to reflect 2001 conditions of development. That is, the withdrawals of water in the Sacramento Valley are based on the

level of agriculture evident or reasonably expected to prevail at that time and the system of dams and diversions are those expected to be in place at that time. The calculations also assume the level of State Water Resources Control Board (SWRCB) constraints that will exist at that time except for variable restrictions that may be imposed by the Endangered Species Act (ESA) to protect targeted species in the Delta.

The calculations also make assumptions about the level of demands from the SWP contractors to be supplied by water exported from the Delta by the project. The explicit demand functions for each contractor are not presented in the report but it is evident in Table B-3 that the demands are variable. The Table B-3 calculations present for each year, the level of demand sought by the contractors in the aggregate, the calculated deliveries against those demands (explained in the report to be the "Table A" demands called for in the contracts), the calculated percentage of the full "Table A" demands that the estimated delivery represents, and the calculated delivery of Article 21 water that would be expected to be delivered. (Article 21 water is essentially "surplus" water that is available only on certain conditions and cannot be assumed to be reliably available.) The Table B-3 is reproduced here as Table 1 for reference except the column for the percentage calculation was not included.

This statistical analysis deals only with the deliveries of Table A water that DWR is obligated to deliver when it is available to meet contractor requests. Reliability of delivery should be related solely to that water that DWR is obligated to deliver.

How is Reliability defined?

Reliability is not a precisely calculated attribute. It involves considerations of risk. For water supply, one normally establishes the level of risk for shortfalls in the supply at some level of probability. For "Safe Yield" calculations for reservoirs like Cachuma in Santa Barbara County, a reservoir dedicated primarily to urban supply, the risk level is established at a 5% chance of not delivering the stated "safe yield" in any given year if the worst drought of record is repeated. This is a relatively prudent choice if the record of runoff supplying the reservoir is sufficiently lengthy to provide confidence in the calculation. For Cachuma, the worst drought is probably the late 40s and early 50s and it establishes a six year period that the reservoir must carry-over water before it is refilled and spilling.

For SWP contractors, it is apparent that no one level can be chosen that will provide the same risks to all. Each contractor has different capabilities to withstand a drought depending on his particular mix of other water supplies. So it is important for each contractor to be able to deduce what level of deliveries he can utilize and rely on from the SWP, so that he may be able to efficiently operate all of his sources in conjunction. Since the SWP is not operated to carry-over water for more than a year, it is important to characterize the level of deliveries that can be expected over a variety of conditions. In this manner, each contractor can deduce the reliable level of SWP deliveries appropriate to his system of water supplies.

Since periods of drought are the ones that stress water supplies, the calculation of reliability must focus strongly on the project's capability to deliver water in those periods. Contractors that have significant storage means may be able to take delivery of more water in preceding wet periods to be held in reserve for use in droughts. Thus such

TABLE 1

CALSIM RESULTS, TOTAL SAMPLE=73

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS
	1922	3407	3389	175	
	1923	3717	3727	143	
	1924	3961	1014	0	
	1925	3940	1502	0	
	1926	3777	2951	0	
	1927	3543	3504	220	
	1928	3897	3337	155	
	1929	3952	1037	0	
	1930	3922	2697	92	
.0	1931	3971	1141	0	
.1	1932	3673	1620	199	
.2	1933	3938	1663	134	
.3	1934	3981	1689	0	
.4	1935	3697	3439	81	
.5	1936	3769	3638	0	
.6	1937	3451	3297	87	
.7	1938	3418	3438	470	
.8	1939	3673	3475	227	
.9	1940	3713	3544	102	
:0	1941	3013	3036	100	
:1	1942	3583	3599	513	
:2	1943	3632	3545	447	
:3	1944	3563	3449	0	
:4	1945	3612	3479	136	
:5	1946	3710	3724	3	
:6	1947	3954	2652	0	
:7	1948	3959	2681	2	
:8	1949	3864	2568	2	
:9	1950	3812	2909	0	
;0	1951	3779	3794	311	
;1	1952	3078	3108	103	
;2	1953	3790	3801	272	
;3	1954	3833	3803	98	
;4	1955	3761	1694	0	
;5	1956	3639	3649	261	
<6	1957	3759	3331	96	
<7	1958	3481	3492	441	
<8	1959	4055	3506	265	
<9	1960	4115	1795	0	
=0	1961	4115	2873	0	
=1	1962	3689	3158	21	
=2	1963	3634	3630	223	
=3	1964	3907	3262	5	
=4	1965	3586	3256	98	
=5	1966	3722	3731	147	
=6	1967	3439	3424	497	
=7	1968	3792	3548	402	
=8	1969	3157	3151	100	
=9	1970	3714	3727	406	
>0	1971	3837	3845	0	
>1	1972	4012	3057	2	
>2	1973	3611	3592	261	
>3	1974	3649	3664	287	
>4	1975	3720	3737	415	
>5	1976	4014	3150	110	

TABLE 1 (cont.)

CALSIM RESULTS, TOTAL SAMPLE=73 (Cont.)

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS
[illegible]	1977	3948	804	0	
67	1978	3126	3036	100	
68	1979	3527	3509	140	
69	1980	3197	3208	100	
70	1981	3834	3532	124	
71	1982	3451	3471	386	
72	1983	3007	3036	200	
73	1984	3692	3706	408	
74	1985	3753	3540	0	
75	1986	3345	3023	51	
76	1987	3904	2894	0	
77	1988	4026	967	0	
78	1989	4097	2902	0	
79	1990	3961	1101	0	
70	1991	3957	983	0	
71	1992	3880	1199	0	
72	1993	3559	3505	133	
73	1994	3739	3272	9	
74	*VARIABLES	DEM	DELKAF	ARTKAF	
75	*KEYWORDS				

a contractor can improve his capability to serve demand during droughts. However, that capability for that contractor does not necessarily improve the prospects of those contractors without much storage who must rely on SWP.

The first step then is to examine the CALSIM II calculated output record in Table 1 to establish the temporal variations in expected deliveries.

Statistical Character of the 73 year record

Table 1 presents the results of the CALSIM II model for the 73 year period, 1922 to 1994. This record was analyzed using standard statistical techniques available in a software package called "COSTAT," which includes a variety of standard calculational routines for multiple regression as well as simple univariate data sets. Only the univariate capability was necessary to apply here.

The results of a univariate analysis of the entire 73 year sample are presented in Table 2 and in Figure 1. Table 2 shows the sample mean, variance, standard deviation, and other attributes of the data set. Figure 1 shows the histogram of the frequency of different levels of delivery. Figure 1 is most interesting in that it shows the sample to comprise two distinct domains, one constituting most of the sample showing the deliveries for what can be called normal or wet years and the other constituting the collection of dry years. There is a region in between these two domains, between 2100 and 2540 taf (thousands of acre-feet) for which there are no calculated deliveries. According to Table 2 the average of this 73 sample is 2961.8 taf which is not within the main mode of the normal/wet year data. Thus the sample average is not representative of any particular attribute of this bi-modal distribution.

Statistical tests were performed to determine whether or not these two subsets of the data, normal/wet and dry, can be considered to come from the same population. The answer is most definitely not. To perform this test the 73 year period was separated into the two nominal populations for which means and variances were calculated and tested for significant differences using a standardized "t-test." The probability that such a bi-modal distribution could be drawn from one population by chance is infinitesimally small. Accordingly, no confident statements can be made about probabilities of delivery by assuming the sample to come from one population. As a consequence, the reported average and the use of the frequency charts in DWR's report are without statistical validity.

If we examine the record of calculated deliveries shown in Table 1, it is quite evident that there are extensive dry periods, the worst of which is shown as that from 1929 through 1934. In fact, this is referred to as the historic worst drought. The drought most recently experienced, 1987 through 1992, also 6 years in duration, was almost as severe from a hydrologic standpoint. Each of these two periods has embedded one decent year that if it were not part of the drought episode would not be so significant. The fact that it is embedded is important because following a dry year or dry sequence the embedded year is not good enough to refill the two big SWP reservoirs, Oroville and San Luis, for the following year. Hence it is part of the drought sequence. (It would have been helpful to understanding SWP operations if the calculated record showed the end of water year storage levels for these two reservoirs.)

TABLE 2
ANALYSIS, TOTAL SAMPLE

ta Set: SWP_REL.cst
ate & Time: 01-04-80 09:37 am

VARIATE DATA ANALYSIS : (DELKAF)

Data Description		Descriptive Measures	
# of observations	: 73	Mean	: 2961.781
# of missing values	: 0	Std Dev(Sample)	: 878.175
Maximum	: 3845.000	RMS(Population)	: 872.139
Minimum	: 804.000	Median	: 3297.000
Range	: 3041.000	1st Quartile	: 2785.000
		3rd Quartile	: 3544.500
		Skewness	: -1.269

Inferential Values

Measures		Confidence Interval (95%)	
Mean	: 2961.781	Lower	: 2760.327
Std Error	: 102.783	Upper	: 3163.235

FIGURE 1

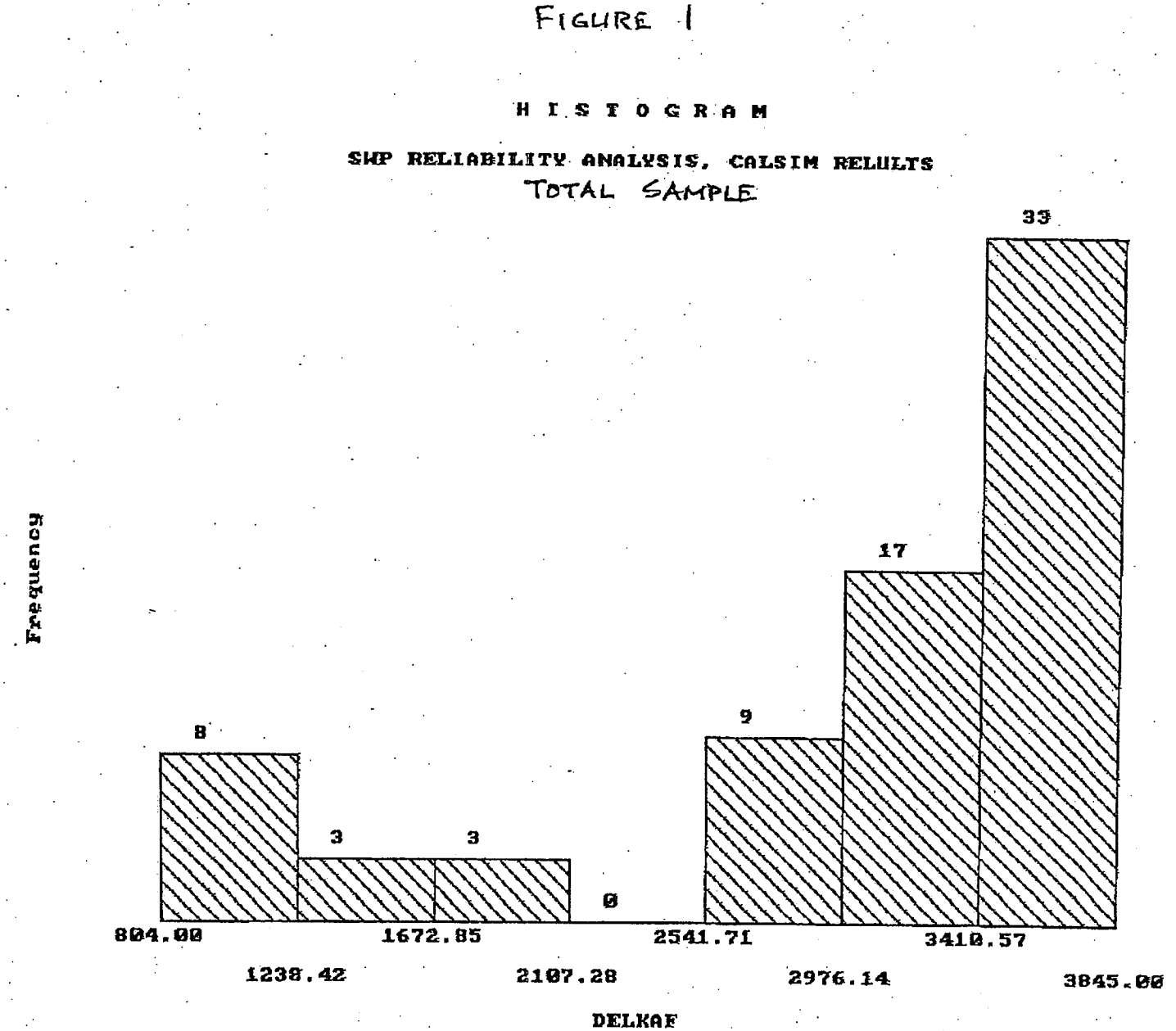

HISTOGRAM
SWP RELIABILITY ANALYSIS, CALSIM RELULTS
TOTAL SAMPLE
Frequency
33
17
9
8
3
3
0
804.00
1238.42
1672.85
2107.28
2541.71
2976.14
3410.57
3845.00
DELKAF

TABLE 2

SWP RELIABILITY ANALYSIS, DROUGHT YEARS

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS
	1929	3952	1037	0	
	1930	3922	2697	92	
	1931	3971	1141	0	
	1932	3673	1620	199	
	1933	3938	1663	134	
	1934	3981	1689	0	
	1988	4026	967	0	
	1989	4097	2902	0	
	1990	3961	1101	0	
	1991	3957	983	0	
1	1992	3880	1199	0	
2	*VARIABLES	DEM	DELKAF	ARTKAF	
	*KEYWORDS				

TABLE 4
ANALYSIS, DROUGHT YEARS

Data Set: SWP_REL4.cst
Date & Time: 01-04-80 09:18 am

UNIVARIATE DATA ANALYSIS : (DELKAF)

Data Description		Descriptive Measures	
# of observations	: 11	Mean	: 1545.364
# of missing values	: 0	Std Dev(Sample)	: 678.004
Maximum	: 2902.000	RMS(Population)	: 646.452
Minimum	: 967.000	Median	: 1199.000
Range	: 1935.000	1st Quartile	: 1037.000
		3rd Quartile	: 1689.000
		Skewness	: 1.069

Inferential Values

Measures		Confidence Interval (95%)	
Mean	: 1545.364	Lower	: 1089.903
Std Error	: 204.426	Upper	: 2000.825

is this saying that during droughts the SWP can reliably deliver:
lower 1.89 MAF
mean 1.54 MAF
upper 2.0 MAF

FIGURE 2

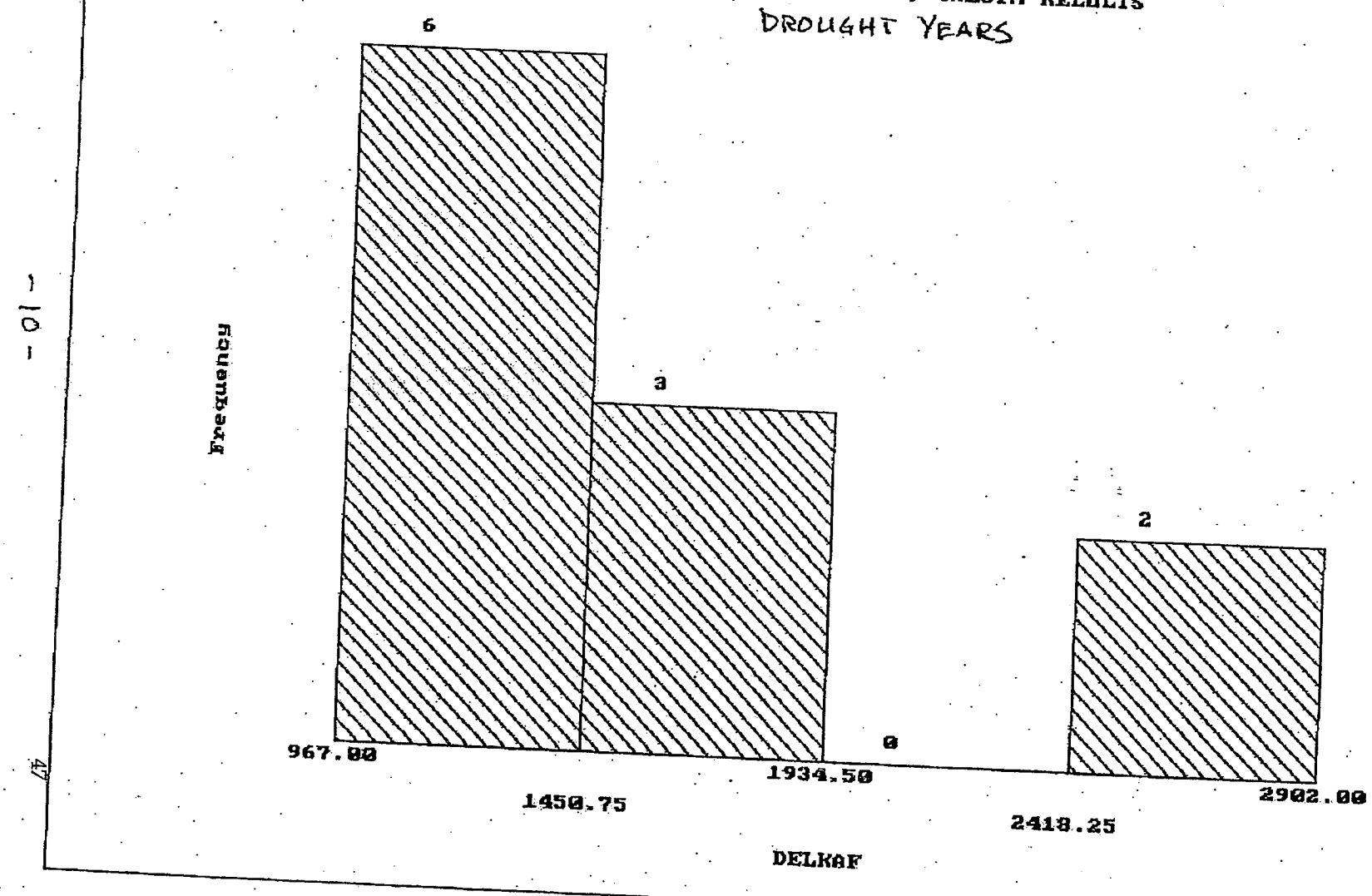

HISTOGRAM
SWP RELIABILITY ANALYSIS, CALSIM RELULTS
DROUGHT YEARS
Frequency
6
3
0
2
967.00
1450.75
1934.50
2418.25
2902.00
DELKAF

TABLE 5

SWP RELIABILITY ANALYSIS, NORMAL_WET YEARS

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS	W
1	1922	3407	3389	175		1
2	1923	3717	3727	143		1
3	1926	3777	2951	0		1
4	1927	3543	3504	220		1
5	1928	3897	3337	155		1
6	1930	3922	2697	92		1
7	1935	3697	3439	81		1
8	1936	3769	3638	0		1
9	1937	3451	3297	87		1
10	1938	3418	3438	470		1
11	1939	3673	3475	227		1
12	1940	3713	3544	102		1
13	1941	3013	3036	100		1
14	1942	3583	3599	513		1
15	1943	3632	3545	447		1
16	1944	3563	3449	0		1
17	1945	3612	3479	136		1
18	1946	3710	3724	3		1
19	1947	3954	2652	0		1
20	1948	3959	2681	2		1
21	1949	3864	2568	2		1
22	1950	3812	2909	0		1
23	1951	3779	3794	311		1
24	1952	3078	3108	103		1
25	1953	3790	3801	272		1
26	1954	3833	3803	98		1
27	1956	3639	3649	261		1
28	1957	3759	3331	96		1
29	1958	3481	3492	441		1
30	1959	4055	3506	265		1
31	1961	4115	2873	0		1
32	1962	3689	3158	21		1
33	1963	3634	3630	223		1
34	1964	3907	3262	5		1
35	1965	3586	3256	98		1
36	1966	3722	3731	147		1
37	1967	3439	3424	497		1
38	1968	3792	3548	402		1
39	1969	3157	3151	100		1
40	1970	3714	3727	406		1
41	1971	3837	3845	0		1
42	1972	4012	3057	2		1
43	1973	3611	3592	261		1
44	1974	3649	3664	287		1
45	1975	3720	3737	415		1
46	1976	4014	3150	110		1
47	1978	3126	3036	100		1
48	1979	3527	3509	140		1
49	1980	3197	3208	100		1
50	1981	3834	3532	124		1
51	1982	3451	3471	386		1
52	1983	3007	3036	200		1
53	1984	3692	3706	408		1
54	1985	3753	3540	0		1
55	1986	3345	3023	51		1

TABLE 5 (Cont.)

SWP RELIABILITY ANALYSIS, NORMAL_WET YEARS (Cont.)

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS	W
6	1987	3904	2894	0		1
7	1993	3559	3505	133		1
8	1994	3739	3272	9		1
9	*VARIABLES	DEM	DELKAF	ARTKAF	*KEYWORDS	*
10						
11	*KEYWORDS					

TABLE 6
ANAYSIS, NORMAL_WET YEARS

ata Set: SWP_REL2.cst
ate & Time: 01-04-80 09:21 am

UNIVARIATE DATA ANALYSIS : (DELKAF)

Data Description

# of observations	: 58
# of missing values	: 1
Maximum	: 3845.000
Minimum	: 2568.000
Range	: 1277.000

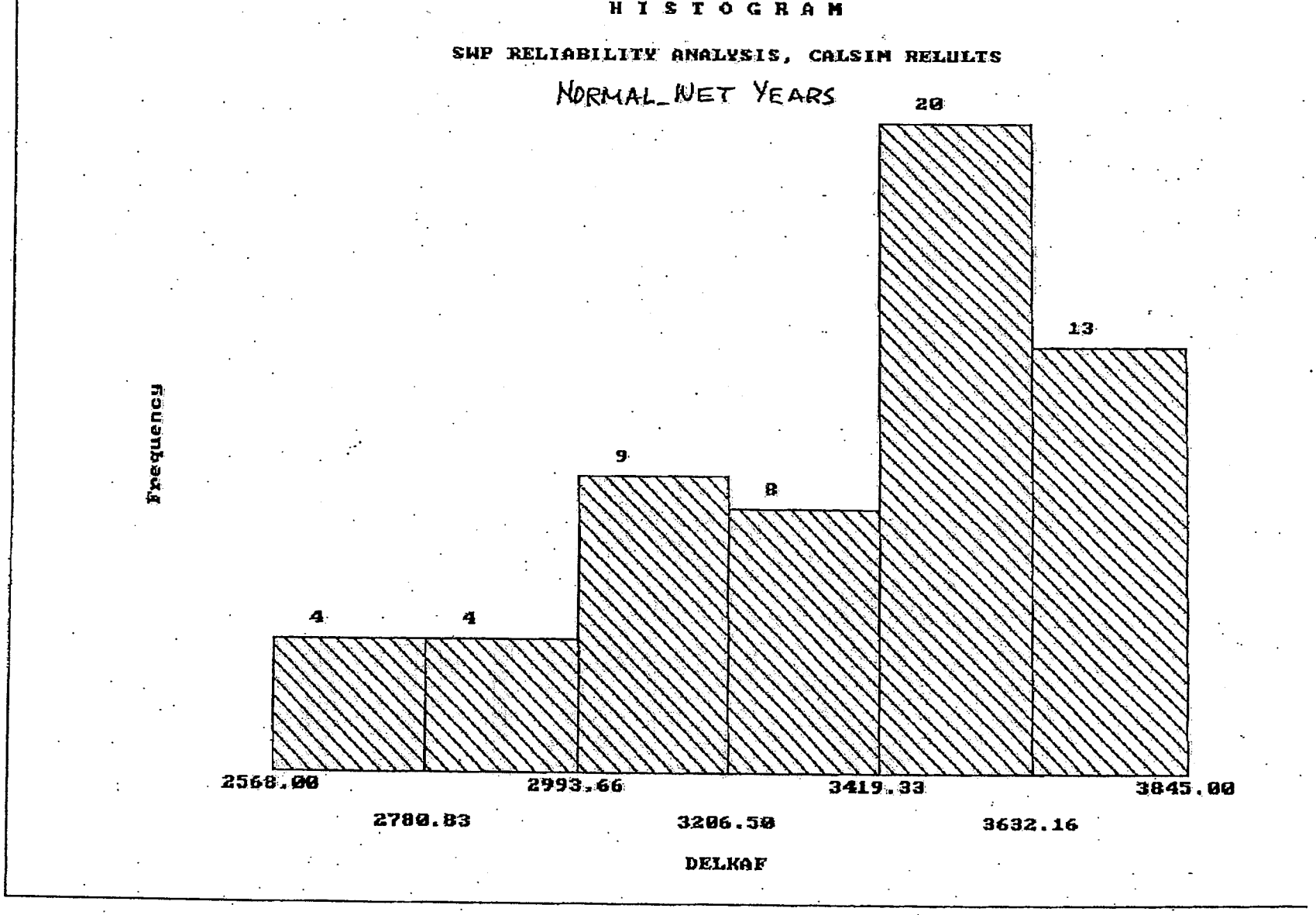
Descriptive Measures

Mean	: 3363.776
Std Dev(Sample)	: 324.661
RMS(Population)	: 321.850
Median	: 3460.000
1st Quartile	: 3139.500
3rd Quartile	: 3606.750
Skewness	: -0.659

Inferential Values

Measures		Confidence Interval (95%)	
Mean	: 3363.776	Lower	: 3278.516
Std Error	: 42.630	Upper	: 3449.036

FIGURE 3


HISTOGRAM
SWP RELIABILITY ANALYSIS, CALSIM RELULTS
NORMAL_WET YEARS
Frequency
4
4
9
8
20
13
2568.00
2780.83
2993.66
3206.50
3419.33
3632.16
3845.00
DELKAF

Further analyses were undertaken treating the two domains as independent populations. Because the dry year set comprises both the dry sequences of drought and several individual dry years sprinkled throughout the record, we have focused the dry year analyses on the drought periods. The two periods are combined into one population for analysis. However, we did exclude the beginning year, 1987, for the second period as it was not embedded in the sequence and could easily be classified as a fair to good year. Thus, we ended with a sample of 11 years, 6 years between 1929 and 1934 and 5 years between 1988 and 1992. The data set is shown in Table 3 and the resulting statistics are shown in Table 4. Table 4 shows an average delivery of 1545 taf and a standard deviation of 678 taf. If the year 1987 were included the average would increase to approximately 1657 taf with not much change in the standard deviation. If the two embedded decent years, 1930 and 1989, are eliminated from the sample the average is decreased to 1267 taf with a standard deviation of 302 taf. These changes suggest that judged as separate occurrences these two years may not be statistically representative of the dry population. However, we will assume that the results shown in Table 4 are representative of the expectation for drought periods.

Lastly, we analyze the population for the normal/wet periods, a record of 58 years, not all in sequence. The years 1930 and 1987 were included in this sample and the individual dry years not part of either of the extended drought periods were excluded. Table 5 presents the data set used in the analysis and Table 6 shows the calculated statistics. Figure 2 shows the frequency histogram for this data set which clearly depicts a central maximum but still with some skewness. (Skewness is a term used to identify distributions that are not symmetric, that is distributions whose sample mean and median are significantly different.) Table 6 shows an average delivery of 3364 taf with a standard deviation of 325 taf. This then represents what is typical of periods of non-drought, an average that is about 81% of the full Table A value of delivery. The standard deviation represents 9.66% of the average delivery, showing a very consistent delivery for normal and wet periods.

How much delivery can we rely on?

As we stated before, what each contractor can rely on depends on the circumstances of his other sources of supply. However, we now have some valid statistical analyses upon which to base the level of delivery that can be relied on for specific circumstances.

First, we note that for any contractor without significant storage availability, the reliable level of delivery is dictated almost solely by drought conditions. If a particular contractor had no other supply to tap and wanted to pick a confident level of supply from the SWP, he would have to select from among the lowest individual years on record which could be as low as 804 taf or 19.5% of the full Table A value. However, we assume that most SWP contractors have other sources available with which to operate conjunctively with SWP deliveries and the appropriate level of delivery would be the average value during a drought episode, approximately 38% of the full Table A value. If the average level is to be relied on, the other sources must make up the variation within the drought period. In other words, SWP deliveries would have to be taken at the available level shown in the CALSIM II output. This might cause a rearrangement of

priorities of when all the other local sources are brought in to play in a given year. Ordinarily, local purveyors operate on a least cost basis meaning that sources are used in the order of increasing marginal cost. Since SWP marginal costs are likely in some instances to be greater than some local sources, the requirement to use SWP as available may require it to supersede the priority of some local sources in order that the notion of a reliable average delivery is indeed fact. This switch in priorities would entail some cost increases depending on the differences in marginal costs.

If a contractor has significant storage available, he may be able to store some wet year deliveries to be held in reserve for drought periods thereby increasing his reliance on SWP during droughts. The normal/wet period deliveries at 81% could be relied on with high confidence (95%) at the average minus 1.6 times the standard deviation. This 95% confidence level would then be 69% of the full Table A value. In other words, such a contractor could state with high confidence that in normal or wet periods he can rely on 69% of full Table A deliveries with the strong likelihood that in many years he could receive more if it can be utilized. Whether or not it can be utilized depends again on his willingness to reorder the priorities of use of all his sources with the expectation that such a reordering will increase overall costs of supply slightly.

Even if a highly confident 69% can be relied on for normal and wet periods, that leaves the question of what to do in drought periods. Clearly, there will be sufficient excess delivery that can be stored for drought use but the level depends critically on the magnitude of storage. If it was desired to bring the drought level of SWP use up to the normal/wet year reliable level, 69%, enough storage would have to provided to make up the 31% of Table a value represented by the difference between the drought period average and the 69% level. Thus, 31% per year for 6 years (the worst drought on record) of the contractor's Table A value would have to be kept in storage. This amounts to 1.86 times the contractor's Table A amount and there would have to be some allowance for storage losses, say 2.5 times would be reasonable. Thus, for such a contractor to rely on 69% deliveries from the SWP through wet and dry periods, he would have to have available in magnitude 2.5 times or so his Table A amount dedicated to SWP storage. For the entire SWP contract in the aggregate, this amounts to 2.5 times 4130 taf or approximately 10 million acre-feet. This would have to be storage south of the Delta since the CALSIM already takes maximum advantage of the pumping capability of the project.

Clearly, the right level of reliance on SWP deliveries depends on the circumstances for each contractor. Because it is highly unlikely that the storage requirement to reach 69% can be achieved for many contractors, especially the larger ones, a level lower than 69% will have to be calculated. Each contractor will have to do so independently.

Some Conclusions

We have shown that the values for SWP delivery reliability presented in DWR's report are not statistically valid. The level of 76%, which represents the average calculated by CALSIM over the 73 year record, cannot be assumed without question by any contractor and it is highly unlikely that such a level can be substantiated by any contractor. The DWR report does acknowledge that during the two 6 year drought

periods, a level of only 39% to 40% can be relied on. However, that is the average for a six year drought period and still requires each contractor to analyze how he will adjust his priorities of use among all his sources. Even levels in wet years may stretch an individual contractor's capabilities given that there are capacity constraints in the aqueducts that prevent taking full deliveries in low demand months without significant means for equalizing storage between low and high demand periods. In all of this it is important to recognize that seizing on an "average" value implies that deliveries will follow the project's capability to pump the amounts calculated in the CALSIM II model. This means that in wet years the water must be taken and either used or stored if the average is to have any meaning. The DWR report is not candid on this aspect.

(D)

February 2, 2004

Delores Brown
Chief, Mitigation and Restoration Branch
Department of Water Resources
3251 S Street, Sacramento, CA 95816

Dear Ms. Brown:

As you are aware, the CALSIM II External Review Panel issued its findings on December 4, 2003. This panel included some of the world's leading experts on water resource systems modeling. We applaud CALFED's willingness to solicit input from these experts, as well as the thoughtful conclusions that they reached during their brief but concentrated model review process.

We have carefully reviewed this document and find that it raises several issues relevant to the application of CALSIM II in the context of the Monterey Plus Environmental Impact Report, which must come to terms with both the applications and limitations of the model if it is to be used. While the Panel concluded that "CALSIM II represents a state-of-the-art modeling system" (page 4), the experts also pointed out several shortcomings regarding the current formulation of this system. In general, their findings indicate that while the use of a simulation model that employs optimization to solve the allocation problem is consistent with the current state of the practice, problems remain with the way this approach is being used to model the California water system. In fact, several of the Panel findings are coincident with concerns we have articulated in the EIR committees regarding the use of CALSIM II in the context of the Monterey Plus EIR.

The following excerpts, which are taken directly from the Strategic Review, highlight points of agreement between the Panel findings and our comments to DWR over the past several months.

1. Most successful applications of optimization that attempts to simulate the behavior of a system have calibrated the objective functions (i.e. set the weights that prioritize flows over time and space) so that the model results correspond to

what actually happens or would happen under a particular hydrologic and demand scenario. It does not appear that such a calibration of the objective function weights in CALSIM has yet been completed. (page 4)

2. The model provides limited and inadequate coverage of non CVP or SWP water and of the California water system south of the Delta. (page 8)

3. Regardless of how possible it is to match the model closely with observed behavior, statistics on the accuracy of the calibration run should be supplied to users to enable them to gauge the likely errors involved with using the model output. (page 9)

4. Examination of the report *'CALSIM II Simulation of Historical SWP/CVP Operations'*, indicates that the current formulation of CALSIM II:

    - Overestimates water deliveries to SWP and CVP contractors,
    - Determines carryover storage target values that differ from those the operators have determined in the past, and
    - Operates the San Luis Reservoir at lower levels and fills it later in the season than operators have in the past. (page 11)

5. Important aspects of CALSIM II rest upon the representations of other models of Delta hydrodynamics and water quality, water demands, and groundwater. The creditability of CALSIM II also rests on testing these models, which send important data/representations to CALSIM II, and documenting them adequately. (page 22)

6. In general, it appears that the developers of CALSIM II do not have a clear idea of how to define the scope of CALSIM II use and many of its applications are evolving in a reactionary manner. Model developers should identify clearly the desired uses for CALSIM II and then determine acceptable approaches for satisfying those desires. Developers should

seek to improve data accuracy and overcome unrealistic assumptions to improve the confidence in model results. (page 25)

These findings, coming from such an esteemed review panel, deserve thorough review and assessment from DWR.

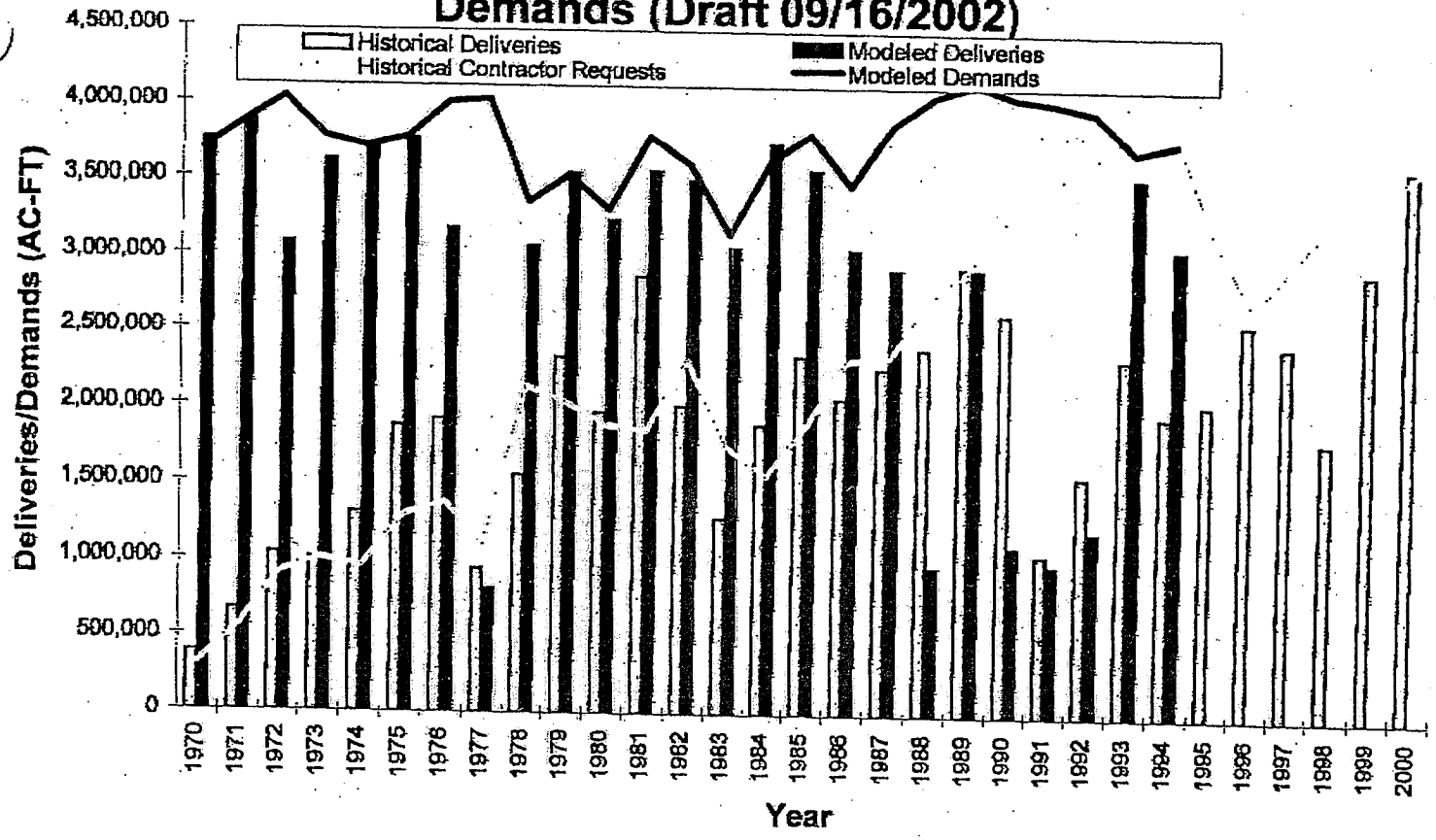
We ask that DWR be prepared present a plan to address these concerns at the next meeting of the Monterey Plus EIR Modeling Sub-Committee that is currently scheduled for February 18, 2004. We find it implausible to conclude that the results of any completed or anticipated CALSIM II runs could be considered relevant to the EIR process in advance of such an analysis. Assuming that you agree, we stand ready to work with DWR to define actions that can be taken to address the Panel's concerns.

Sincerely,

Sage Sweetwood
Planning and Conservation League

DWR

Historical versus Modeled Table A Deliveries and Demands (Draft 09/16/2002)



Friends of the Santa Clara River

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Sierra Club
Angeles Chapter
Los Padres Chapter

Surfrider Foundation

Audubon Society
Ventura Chapter

Ventura County Environmental Coalition

Wishtoyo Foundation

August 2, 2004

Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Re: Draft EIR for Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount, State Clearinghouse Number 1998041127

Dear Ms. Cotton,

Friends of the Santa Clara River (FSCR) offers the following comments on the referenced Draft Environmental Impact Report (DEIR).

As we noted in our response to the Notice of Preparation, the Castaic Lake Water Agency (CLWA) is not the proper Lead Agency to prepare an Environmental Impact Report (EIR) for this project under the California Environmental Quality Act. 29

The 1995 Monterey Agreement between the California Department of Water Resources (DWR) and water contractors of the State Water Project was put in place to control transfers of the type described in the subject document. There is at present no Monterey Agreement EIR because of the PCL decision of September 2000, which held that the Monterey Agreement EIR prepared by CCWA was inadequate. The court held that the DWR was the proper Lead Agency for this Agreement because only the DWR has the statewide perspective needed to evaluate the environmental impacts to the entire water distribution system. 30

The EIR for the 41,000 acre-feet transfer must tier from a certified Monterey Agreement EIR, which does not currently exist. This was indeed suggested by the Second Appellate District Court decision of January 2002 in the case brought against CLWA by Friends of the Santa Clara River. Page 19 of this decision states that "Respondent may be able to cure the PCL problem by awaiting action by the state DWR complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or Addendum to EIR (Guidelines 15162, 15163, 15164) tiering on a new Monterey Agreement EIR." 31

Since CLWA cannot legally be the Lead Agency for the subject transfer, the only legitimate way for CLWA to proceed with EIR preparation is to await DWR's preparation and certification of a Monterey Agreement EIR. The subject DEIR is thus invalid and not in compliance with court decisions involving this transfer of state water. 32

Thank you for the opportunity to comment.

Sincerely,

Ron Bottorff

Ron Bottorff, Chair

RECEIVED
AUG 12 2004
By

Friends of the Santa Clara River
660 Randy Drive Newbury Park, California 91320 (805) 498-4323

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Sierra Club, Los Padres Chapter

Surfrider Foundation

Ventura Audubon Society

8-6-04

Castaic Lake Water Agency
27234 Bouquet Canyon Rd.
Saugus, Ca. 91350

Re: 41,000 AF Transfer EIR SCH #1998041127

Dear Directors:

Please include the following correspondence between our attorney and the Department of Water Resources and their response regarding the timeline for the completion of the Monterey Agreement Environmental Impact Report. Because this EIR must be tiered on the State wide impacts addressed in the Monterey Agreement EIR and could not proceed without this Agreement, your Agency must wait until the state wide document has been certified before certifying the EIR for this project. 33

We continue to protest that you may not approve this document because you are not the correct lead agency for a project with state-wide impacts. Since the Dept. of Water Resources was found to be the legitimate lead agency for such a transfer in the decision *PCL v. DWR*, 2000, we protest your disregard for legal precedent on this matter. We note that your current general manager, Dan Masnada, is the same person that proceeded illegally in the above case when he was general Manager of Central Coast Water Agency. He is well aware that your agency is not proceeding according to law. 34

Further, we wish to state that none of these documents, nor the current EIR before you address the effects of an earthquake or levee break (such as recently occurred in the Sacramento Delta, news article attached). These emergencies were also not addressed in the Urban Water Management Plan 2000. We ask that you address how your agency intends to manage such a water emergency under current water availability scenarios and how water supply would be affected under such an emergency with the additional buildout this transfer would permit. 35

We ask that you respond to the recommendations made recently by the two experts, Kathy Kelly and Jonas Minton who gave testimony regarding State Water project availability before the City of Santa Clarita Planning Commission on June 29th, 2004. They both suggested that the planners should analyze the effect of cutbacks that would be required under the worst case historical delivery rate, 13% of Title A amounts in 1991, on existing businesses and residents in the Santa Clarita Valley. Since ground water sources are in the Santa Clarita Valley are fully utilized, substantial cutbacks would be required. This significant impact should be addressed. 36

Thank-you for your time.

Sincerely,
RON BOTTORFF, Chair

Attachments :
1. Court order in *PCL v. DWR*
2. Correspondence from Alyse Lazar to DWR dated May 18th, 2004 re: Status of Monterey Agreement EIR
3. Correspondence from DWR to Alyse Lazar dated June 16th, 2004 re: Status of Monterey
4. LA Times Article June 4th, 2004

FILED
ENDORSED

03 JUN -6 PM 3:27

SACRAMENTO COURTS
DEPT. #53

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SACRAMENTO

PLANNING AND CONSERVATION LEAGUE a California not for profit corporation, PLUMAS COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, a California public agency; CITIZENS PLANNING ASSOCIATION OF SANTA BARBARA COUNTY, INC., a California not for profit corporation,

Plaintiffs and Petitioners,

v.

DEPARTMENT OF WATER RESOURCES, a California State Agency, et al.,

Defendants and Respondents.

Case No. 95CS03216

ORDER PURSUANT TO PUBLIC RESOURCES CODE SECTION 21168.9

On remand from the Third District Court of Appeal on May 20, 2003, in Department 53 of the Sacramento Superior Court, the Honorable Loren E. McMaster, presiding, this proceeding came on for a status report and joint motion. Petitioners and Plaintiffs, Planning and Conservation League, Plumas County Flood Control and Water Conservation District, and Citizens Planning Association of Santa Barbara County ("Petitioners"), appeared through Antonio Rossmann and Roger B. Moore. Respondent and Defendant, Central Coast Water Authority (CCWA), appeared through Susan F. Petrovich of the Law Firm of Hatch & Parent. Respondent and Defendant, Department of Water Resources (DWR), appeared through Deputy Attorney General Marian E. Moe.

Robert S. Draper of O'Melveny and Myers, LLP and Clifford W. Schulz appeared, respectively, on behalf of the Metropolitan Water District of Southern California and Dudley Ridge Water District, entities that submitted answers to the First Amended Complaint subsequent to the Court of Appeal's final determination in this action and prior to any further order of this Court on remand.

In light of the direction from the Third District Court of Appeal on remand in Planning and Conservation League v. Department of Water Resources (2000) 83 Cal.App.4th 892, this Court hereby makes the following findings:

1. The parties to this lawsuit and other public agencies have engaged in extensive settlement negotiations, mediated by retired Judge Daniel Weinstein of JAMS Dispute Resolution, with the intent to avoid further litigation and associated expenses, to provide for an effective way to cooperate in the preparation of a new environmental impact report (EIR), and to make other specified improvements in the administration and operation of the State Water Project.

2. The mediation has resulted in an executed Settlement Agreement for approval by this Court, attached to this Order as Exhibit A.

3. DWR as lead agency has commenced the preparation of the new EIR.

4. As part of the Settlement Agreement, DWR and the State Water Project (SWP) contractors who are signatories to the Settlement Agreement have agreed that, pending DWR's filing of a return in satisfaction of the Writ of Mandate and this Court's dismissal of the Writ of Mandate, they will not approve any new project or activity (as defined in section VII.A of the Settlement Agreement) in reliance on the 1995 Environmental Impact Report for the Implementation of the Monterey Agreement.

5. This Order is made pursuant to the provisions of Public Resources Code section 21168.9 and pursuant to this Court's equitable powers. This Court finds that the actions described in this Order, including actions taken in compliance with the Writ of Mandate, comprise the actions necessary to assure DWR's compliance with Division 13 of the Public Resources Code. This Court further finds that this Order includes only those

mandates necessary to achieve compliance with Division 13.

THEREFORE, IT IS HEREBY ORDERED as follows:

1. This Court's Final Judgment denying the petition for writ of mandate, entered August 15, 1996, is reversed in accordance with the directive of the Third District Court of Appeal's decision in Planning and Conservation League v. Department of Water Resources (2000) 83 Cal.App.4th 892.

2. This Court's order granting the summary adjudication on the fifth cause of action, entered June 10, 1996, is vacated.

3. The Settlement Agreement attached as Exhibit A is hereby approved.

4. A Peremptory Writ of Mandate directed to Respondents Central Coast Water Authority and DWR shall issue under seal of this Court in the form attached hereto as Exhibit B.

5. In accordance with the Settlement Agreement and this Order, pending DWR's filing of the return in compliance with the Peremptory Writ of Mandate and this Court's Order discharging the Writ of Mandate, DWR and CCWA shall not approve any new project or activity (as defined section VII.A of the Settlement Agreement) in reliance on the 1995 EIR for the Implementation of the Monterey Agreement.

6. In the interim, until DWR files its return in compliance with the Peremptory Writ of Mandate and this Court orders discharge of the Writ of Mandate, the administration and operation of the State Water Project and Kern Water Bank Lands shall be conducted pursuant to the Monterey Amendments to the State Water Contracts, as supplemented by the Attachment A Amendments to the State Water Contracts (as defined in the Settlement Agreement) and the other terms and conditions of the Settlement Agreement.

7. Plaintiffs and petitioners shall recover such costs and attorney's fees as provided in prior court orders and in an amount as determined in the arbitration procedures agreed to in the Settlement Agreement, or as otherwise agreed to by the parties.

8. Except as provided, the Peremptory Writ of Mandate shall not limit or constrain the lawful jurisdiction and discretion of DWR. This Court retains jurisdiction until DWR files a return that complies with the terms of the Writ of Mandate, and this Court issues an order discharging the Writ of Mandate.

IT IS SO ORDERED.

Dated: JUN - 6 2003, 2003

LOREN E. McMASTER
Judge of the Superior Court

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May 18, 2004

Lester Snow, Director
Department of Water Resources
Room 1115-1
P.O. Box 942836
Sacramento, California 94236

RE: New Monterey Agreement EIR

Dear Director Snow:

Pursuant to the Court decision in *Planning & Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 (hereafter "*PCL*"), the Department of Water Resources is required to prepare a new Environmental Impact Report regarding all aspects of the Monterey Amendments. I understand that you will be overseeing this process.

The Settlement Agreement that was entered into between all of the parties to the *PCL* case on May 5, 2003 set forth various requirements for the EIR. According to Attachment B-1of this Settlement Agreement, the parties specifically excluded the 41,000 afy entitlements purchased by Castaic Lake Water Agency ("CLWA") emanating from the Monterey Amendments from the list of final transfers. It is therefore my understanding that your office will be evaluating the environmental impacts of this 41,000 afy transfer as part of the Environmental Impact Report for your project (the Monterey Amendments Project.) In fact, page 11, paragraphs III C.4 of the Settlement Agreement mandates DWR to analyze the potential environmental effects relating to CLWA's project ("the Kern-Castaic Transfer").

As you may also be aware, the EIR prepared by CLWA for the 41,000 afy transfer was decertified by the Los Angeles Superior Court on November 1, 2002 in *Friends of the Santa Clara River v. Castaic Lake Water Agency*, Los Angeles County Superior Court Case No. BS 056954. In order for CLWA's new EIR to be legally sufficient and in conformance with the appellate court's decision, it must contain an analysis of the potential environmental effects of the Kern-Castaic Transfer on the entities that have and will continue to lose this 41,000 afy source of water due to the transfer as well as the impacts on the State Water Project ("SWP") system resulting from the movement of this water from its source in Kern County to Santa Clarita. Logically and in conformance with CEQA, both DWR's EIR and CLWA's EIR must contain an analysis of the impacts from this loss of water upon Kern County agricultural users as well as all others affected by the transfer.

I currently represent Friends of the Santa Clara River in the *Friends of the Santa Clara River v. Castaic Lake Water Agency*, litigation. In the Judgment Granting Peremptory Writ of Mandate in the Friends' case, the Court ordered that it " retains jurisdiction until respondent Castaic Lake Water Agency certifies an Environmental Impact Report that complies with the California Environmental

Quality Act and is consistent with the views expressed by the Court of Appeal Opinion filed January 10, 2002, Case No. B 145283."

For these reasons, I am requesting that you provide me with a copy of any analysis performed to date by DWR regarding the potential environmental impacts of the Kern-Castaic transfer, whether in draft or final form.

Additionally, please advise me of the procedural steps that DWR will take before making a determination whether or not to approve the Kern-Castaic transfer as a "final" transfer and the criteria that will be utilized for making this determination. If there is a proposed schedule for the completion of the Monterey Amendments EIR and/or for these procedural steps for determining whether or not to approve the Kern-Castaic transfer as a long-term transfer, please provide me with a copy of same.

I would appreciate receiving this information from you by May 28, 2004. If you have questions regarding the above or would like to discuss the matter, please call me at (805) 496-5390. Thank you for your anticipated assistance. I look forward to hearing from you.

Very truly yours,

Alyse M. Lazar

cc: Delores Brown

STATE OF CALIFORNIA -- THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

JUN 17 2004

Alyse M. Lazar, Esq.
3075 East Thousand Oaks Boulevard, Suite 100
Westlake Village, California 91362

Dear Ms. Lazar:

In response to your letter of May 18, 2004, the Department of Water Resources (DWR) is preparing an Environmental Impact Report (EIR) on the Monterey Amendments and the Settlement Agreement resulting from the Court of Appeal decision in *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892.

DWR's treatment of the transfer of Table A amounts from Kern Country Water Agency to Castaic Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph III.C.4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as actions that relate to the potential environmental impacts of approving the Monterey Amendments." Section 1(O) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 acre feet of water from Kern Country Water Agency to the Castaic Lake Water Agency, approved by DWR on March 31, 1999." DWR has not completed any draft or final analysis regarding these transfers. Attached is an estimated schedule for completion of the EIR.

The Settlement Agreement (Section III.E) also provides "with respect to Section III.(C)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation. The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

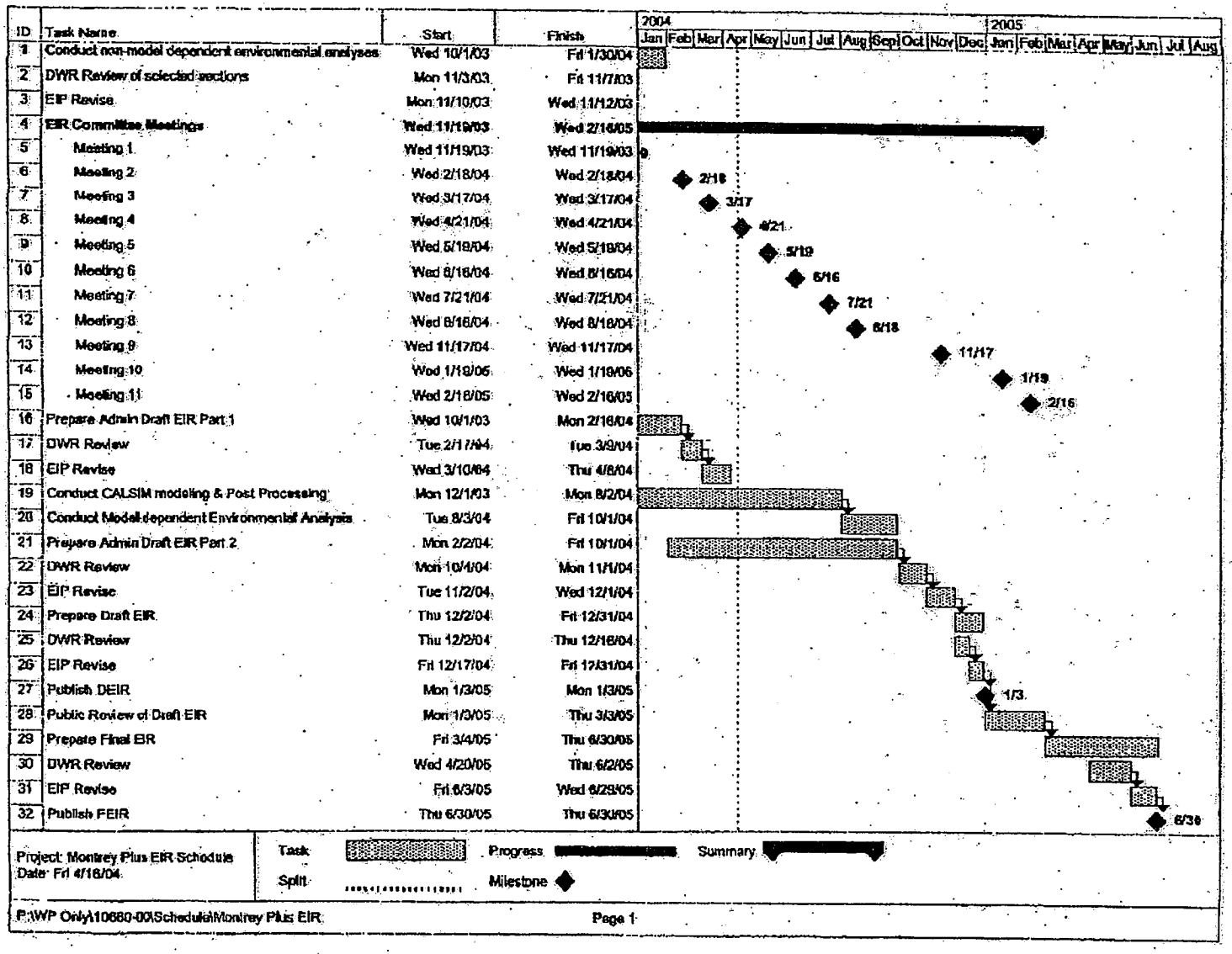
If you would like further information regarding the EIR on the Monterey Amendments and the Settlement Agreement, please contact Delores Brown at (916) 227-2407.

Sincerely,

Gerald E. Johns

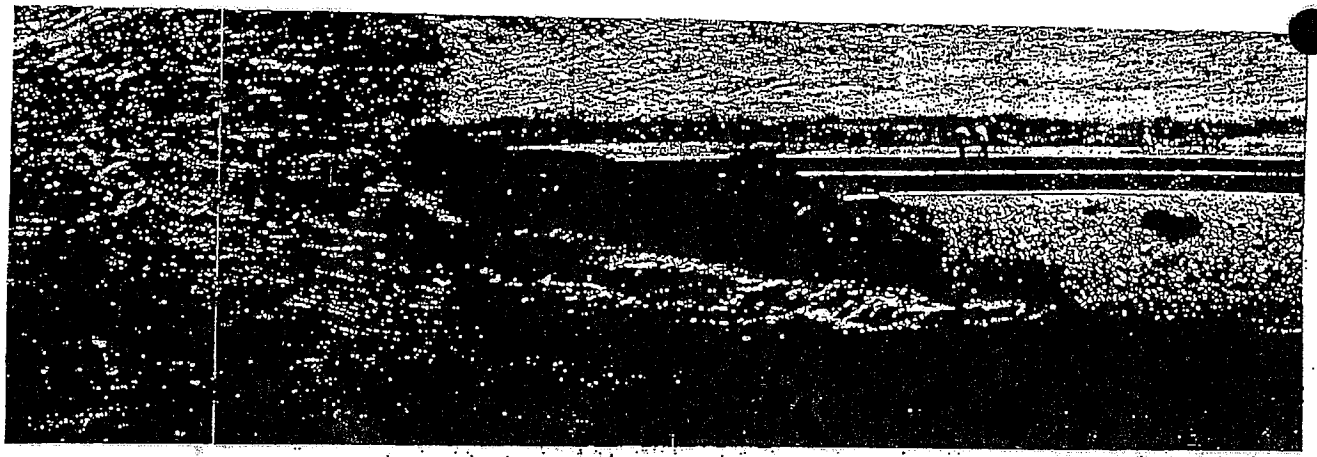
for Lester A. Snow
Director

Attachment



ID	Task Name	Start	Finish
1	Conduct non-model dependent environmental analyses	Wed 10/1/03	Fri 1/30/04
2	DWR Review of selected sections	Mon 11/3/03	Fri 11/7/03
3	EIP Revise	Mon 11/10/03	Wed 11/12/03
4	EIR Committee Meetings	Wed 11/19/03	Wed 2/16/05
5	Meeting 1	Wed 11/19/03	Wed 11/19/03
6	Meeting 2	Wed 2/18/04	Wed 2/18/04
7	Meeting 3	Wed 3/17/04	Wed 3/17/04
8	Meeting 4	Wed 4/21/04	Wed 4/21/04
9	Meeting 5	Wed 5/19/04	Wed 5/19/04
10	Meeting 6	Wed 6/16/04	Wed 6/16/04
11	Meeting 7	Wed 7/21/04	Wed 7/21/04
12	Meeting 8	Wed 8/18/04	Wed 8/18/04
13	Meeting 9	Wed 11/17/04	Wed 11/17/04
14	Meeting 10	Wed 1/19/05	Wed 1/19/05
15	Meeting 11	Wed 2/16/05	Wed 2/16/05
16	Prepare Admin Draft EIR Part 1	Wed 10/1/03	Mon 2/16/04
17	DWR Review	Tue 2/17/04	Tue 3/9/04
18	EIP Revise	Wed 3/10/04	Thu 4/8/04
19	Conduct CALSIM modeling & Post Processing	Mon 12/1/03	Mon 8/2/04
20	Conduct Model-dependent Environmental Analysis	Tue 8/3/04	Fri 10/1/04
21	Prepare Admin Draft EIR Part 2	Mon 2/2/04	Fri 10/1/04
22	DWR Review	Mon 10/4/04	Mon 11/1/04
23	EIP Revise	Tue 11/2/04	Wed 12/1/04
24	Prepare Draft EIR	Thu 12/2/04	Fri 12/31/04
25	DWR Review	Thu 12/2/04	Thu 12/16/04
26	EIP Revise	Fri 12/17/04	Fri 12/31/04
27	Publish DEIR	Mon 1/3/05	Mon 1/3/05
28	Public Review of Draft EIR	Mon 1/3/05	Thu 3/3/05
29	Prepare Final EIR	Fri 3/4/05	Thu 6/30/05
30	DWR Review	Wed 4/20/05	Thu 6/2/05
31	EIP Revise	Fri 6/3/05	Wed 6/29/05
32	Publish FEIR	Thu 6/30/05	Thu 6/30/05

07/19/2004 05:54 8050000000 LAW OFFICES:A LAZAR PAGE 05



CRAIG SANDERS *Stockton Record*

A TORRENT: *Water pours through an estimated 300-foot break in a levee along the Middle River into low-level farmland about 20 miles west of Stockton.*

Levee Break Forces 300 to Evacuate

San Joaquin Valley farmland is flooded, shutting a rail line. Drinking water supplies for millions could be affected.

By SARA LIN
Times Staff Writer

A levee break in fields west of Stockton on Thursday morning prompted the evacuation of about 300 people from a farming community, and forced federal and state water agencies to slow the pumping of delta water for irrigation and drinking water.

The break, estimated at 300 feet long, was discovered about 8:30 a.m. on the Middle River along Bacon Island Road north of California 4, about 20 miles west of Stockton, said Connie Cassinetto, a spokeswoman for the San Joaquin County Office of Emergency Services.

The amount of freshwater rushing across the low-lying farmlands of man-made Bacon Island is enough to supply 150,000 families for one year. Authorities expect the change in water levels to cause salt water from San Francisco Bay to seep into the San Joaquin-Sacramento River Delta, threatening freshwater fish and the quality of drinking water supplies for cities, including Los Angeles.

The federal Bureau of Reclamation cut its water exports from the delta by 80%, said spokesman Jeff McCracken. The California Department of Water Resources halted its exports from the area completely.

"We need to wait until island flows have stabilized to get decent readings on what salinity levels look like," McCracken said.

After that, he said, state and federal water agencies probably would consider releasing water from storage facilities to freshen the delta.

The break occurred on a stretch known as Upper Jones Tract, close to a main rail line and several pipelines that carry water to the San Francisco Bay Area. The pipes, located a mile north of the break, were not affected by floodwaters. Officials said those pipelines have been submerged before.

At 1:30 p.m., officials at the Burlington Northern and Santa Fe Railway shut down one of its two main lines after water reached the edge of the track.

While trains were being operated at restricted speeds on the second line, officials said they would shut it down if water crept closer. Forty trains pass daily through the area.

The railroad tracks, which were built on raised trestles where a levee broke in 1980, divide the island's 12,000 acres roughly in half and are keeping floodwaters from contaminating the lower portion of the island.

"Those levees in the delta are very old and very fragile," said Don Strickland, a spokesman for the Department of Water Resources.

Most levees were not built properly, he said, and were created more than a century ago by "farmers pushing dirt together."

"Over the years," he said, "more people put up dirt and rocks, and then people put a highway on it."

As a result, many of the man-made islands in that region sit more than 10 feet below sea level.

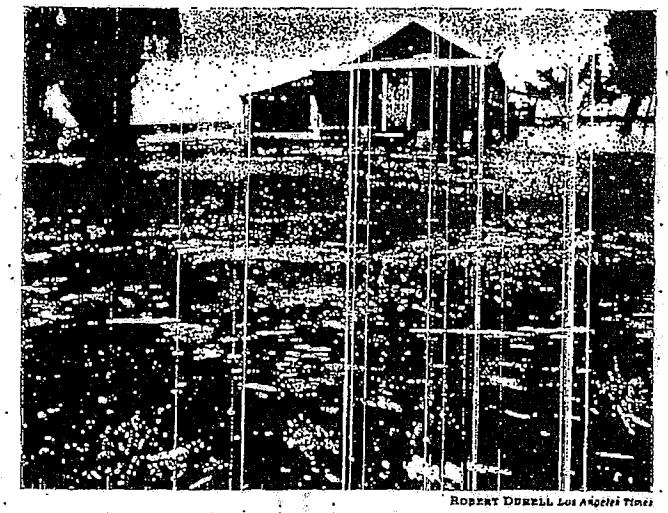
California Highway Patrol officials said a high-pressure fuel line in the flood zone was shut down, but there were no immediate plans to close California 4.

"This mostly affects farmers, their equipment, and some migrant farm laborers," Cassinetto said.

Typically, fewer than 100 migrant workers live in camps in the area, primarily used to farm row crops such as alfalfa, she said.

County officials expected water to spill through the break into the night before engineers could plug it and begin pumping water out.

"When these levees break, it's pretty slow. It's not like a flood," Cassinetto said. A levee can break at any time, she added. "They're just dirt."



ROBERT DURELL *Los Angeles Times*

ENGULFED: *Floodwaters surround a farmworker house about three miles from the levee. The occupants were among about 300 people who had to be evacuated.*

Tell of Laci Last Hours

Issues facing voters in November

The Nov. 2 general election ballot will lead with the race for U.S. president but will include 14 California measures, the last of which was qualified Thursday by the secretary of state.

Railroad — A $9.95-billion bond ... strike and imposes more severe

Jury Deliberations Begin in Killing of Transgender Teen

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Save Mount Diablo
South Yuba River Citizens League

PCL

PLANNING AND CONSERVATION LEAGUE

Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
(661) 297-1600

August 16, 2004

Dear Ms. Cotton:

This letter provides comments on the Draft EIR entitled *Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount*, on behalf of the Planning and Conservation League (PCL) and the Citizens Planning Association of Santa Barbara County (CPA). If finalized, that transfer would be the largest permanent agriculture-to-urban transfer under article 53 of the Monterey Amendments, with major implications for water resources and land use planning in Southern California. The environmental impacts of these amendments, including the instant transfer, remain to be addressed in DWR's pending "Monterey Plus" EIR review. The scoping comments submitted for that review (attached as Exhibit 1), including those of PCL, should be studied in connection with the present EIR review. 37

PCL and CPA were among the plaintiffs whose successful CEQA challenge set aside the Central Coast Water Authority's original 1995 Monterey Program EIR. That ruling led to decertification of the predecessor EIR for Castaic's transfer, which unlawfully relied upon that defective analysis. 38

The instant Draft EIR, prepared by the same firm (SAIC) as the decertified Monterey EIR, provides a case of history repeating itself. It is legally insufficient in process and substance, failing Castaic's duty under CEQA to properly inform decision-makers and the public of the project's environmental consequences. The Draft EIR cannot be reconciled with the Monterey Amendments court decision (*Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892) and the settlement agreement later reached in that case. (The full Settlement Agreement appears on DWR's website at http://www.montereyamendments.water.ca.gov/.)

California Affiliate
NATIONAL WILDLIFE FEDERATION®

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PROCESS ISSUES:

Failure to Address Comments

PCL and CPA submitted a comment letter on August 22, 2004. This letter, attached as exhibit 1; addressed both the instant transfer and a related proposal to transfer 16,000 acre-feet of Table A amounts from another of the Kern County Water Agency's member districts. PCL urged Castaic that it should "refrain from moving forward with these separate project reviews, which are premature and likely to operate at cross-purposes with DWR's statewide review" of the project referenced in the Monterey Amendments case settlement. PCL and CPA advised Castaic that if it prematurely attempted to proceed with separate EIRs on these permanent transfers, it would "lack the institutional authority and statewide accountability" to serve as CEQA lead agency. The Draft EIR simply ignores PCL's comments, and sidesteps similar ones made by other organizations. 39

PCL filed similar comment letters on several local projects contesting Castaic's improper and premature reliance on the 41,000 acre-feet transfer as an integral part of its reliable water supply. These comments (addressing, respectively, the West Creek Project, the River Village Project, and the Riverpark project) are attached as exhibits 2-4. They raise important questions affecting the adequacy of this EIS, as well as the prospect of possible cumulative impacts not addressed in Castaic's draft. 40

Inconsistency with DWR's "Monterey Plus" Review

Castaic's so-called "stand-alone" Draft EIR is fraught with potential for inconsistency with DWR's upcoming environmental review and decision on the "Monterey Plus" project. That review will address the identical transfer from a statewide perspective, with an integrated analysis of that project in its entirety. Castaic lacks the expertise and authority to proceed based upon its isolated assessment of project impacts, alternatives, and mitigation, each of which may well be undermined by DWR's subsequent analysis and decision. 41

Two recent Second District Court of Appeals cases reinforce the point that Castaic Lake Water Agency (CLWA) should not pursue its own independent EIR on the 41,000 acre foot transfer in advance of the 42

completion of DWR's tier-one "Monterey Plus" EIR.

42

In *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, the Second District court of appeal ordered the decertification of the previous EIR Castaic prepared to support the instant transfer. The Friends group and other environmental organizations opposed the project decision on that Kern/Castaic transfer, citing environmental consequences in the Santa Clara River area and association with numerous sprawl development projects. In its CEQA assessment, the court recognized that the proposed 41,000 acre-feet transfer "is part of an overall larger scheme, analyzed on a programmatic basis in the Monterey Agreement EIR." (*Id.* at 1384.)

43

Another recent Second District appellate decision, *Santa Clarita Organization for Planning and the Environment (SCOPE) v. County of Los Angeles* (2003) 106 Cal.App.4th 715, critically addressed Castaic's characterization of the 41,000 acre-feet transfer. In that case, the County of Los Angeles violated CEQA in its review of the West Creek development project that erroneously assumed that 100 per cent of Castaic's purported 41,000 acre-feet would be available in wet years and 50 per cent in drought years. Drawing on *Planning and Conservation League's* assessment of the historic disparity between Table A amounts and deliverable water, the court concluded that the EIR failed to undertake a "serious and detailed analysis" of State Water Project supplies, and observed that "[t]he dream of water entitlements for the incomplete State Water Project is no substitute for the reality of actual water the SWP can deliver." (*Id.* at pp. 723, 717.)

Inconsistency with the "Lead Agency" Principle

44

The Courts have also emphasized that DWR must act as lead agency in performing Tier 1 environmental studies. If Castaic continues with its separate environmental reviews without awaiting DWR's assessment in the "Monterey Plus" EIR, it would violate CEQA's lead agency requirement based upon the well-established standards set forth in *Planning and Conservation League v. Department of Water Resources*. The court in that case could hardly have been clearer that *DWR* is the "state agency charged with the statewide responsibility to build, maintain, and operate" the State Water Project. (*Id.* at p. 906.; see also Wat. Code, §12930, *et seq.*) Finding that DWR was the only entity with the requisite statewide perspective and expertise to serve as lead agency, the court found it "incongruous to assert that any of the regional contractors" could "assume

DWR's principal responsibility for managing the SWP." (*Id.*)

44

The court-approved settlement agreement in *Planning and Conservation League* recognizes DWR's duty as "the State agency responsible for administration and operation of the SWP," as well as its continuing obligation to comply with applicable requirements of CEQA and the Water Code. (Settlement Agreement, Section X.B.) The transfer guidelines disclosed to contractors under the settlement agreement also recognize the continuing need to comply with all existing legal requirements, including CEQA, and to honor the lead agency principles identified in the Third District's decision in the Monterey Amendments case (see http://ceres.ca.gov/ceqa/cases/2000/PCLvDWR-2000.html).

These principles apply clearly to the proposed permanent transfers of the Table A amounts referenced in the state project contracts, which require DWR's approval and presuppose the application of Monterey. They also concededly require changes in the amount of supplies available to several water agencies, the location and timing of project deliveries, and changed utilization of the project's conveyance and storage facilities. The transfers, which may require the fallowing of farmland in agricultural areas outside the jurisdiction of CLWA and are associated with proposed annexations linked to some of the more controversial development projects in California, demand the statewide authority and experience that only DWR can provide.

Improper Hypothetical Assessment of Non-Monterey Transfer

45

Lastly, Castaic's hypothetical "non-Monterey" analysis of the transfers in the Draft EIR cannot substitute for DWR's new assessment of the Monterey changes. In *Friends*, Castaic unsuccessfully attempted to portray its transfer EIR as capable of standing alone, outside the Monterey Amendments program. Although transfers were available under Article 41 of the pre-Monterey State Water Project contracts subject to express DWR approval, DWR has neither reviewed nor conferred approval on the present transfer under Article 41. Moreover, it is highly speculative whether agriculture-to-urban transfers such as the 41,000 acre foot transfer would even have taken place without the Monterey Amendments, since those Table A amounts would have been subject to "agriculture first" cutbacks under pre-Monterey article 18(a). Read in context, such maneuvers would amount to little more than the "straw man" argument considered and rejected in the *Friends* appeal. (95 Cal.App. 4th at p. 1387.)

SUBSTANTIVE ISSUES

Mischaracterization of Settlement Agreement

The instant Draft EIR, includes glaring errors. A piecemeal and startlingly inaccurate description of the Monterey case Settlement Agreement (ES 2-4) fails even to inform the reader that DWR's statewide review of the "Monterey Plus" project could affect the future of this transfer or of the Monterey Amendments themselves. 46

The "Settlement Agreement underscores the non-finality of the 41,000 acre-feet transfer and the need for DWR's statewide review. For example: 47

- Section III.D refers to a list of transfers listed in attachment E to the agreement, which the settling parties, without specifically endorsing or opposing them, recognize as "final" and agree not to challenge. This transfer is *not* included in that list.

- Further evidence of the non-finality of the Castaic transfer is that section III.E singles out this transfer for a special acknowledgment recognizing that it is the subject of pending litigation in this Court.[1]

- Section III.C.4 recognizes DWR's commitment to provide in its forthcoming statewide programmatic EIR an "[a]nalysis of the potential environmental effects" relating to "the Kern-Castaic Transfer," identifying it as one of the actions "that relate to the potential environmental impacts of approving the Monterey Amendments."

DWR has recently confirmed that this transfer remains subject to the Settlement Agreement and its future "Monterey Plus" EIR. As DWR Director Lester Snow wrote on June 17, 2004 to *Friends* case lead counsel 48

[1] The Draft EIR erroneously attempts to recast this provision as a "specific exclusion" of this transfer from "any prohibitions against transfers of Table A amounts by the Settlement Agreement." That is simply wrong. Section III.E recognizes that this transfer is "subject to pending litigation in the Los Angeles Superior Court following remand from the Second District Court of Appeal." It reflects a recognition that "jurisdiction with respect to that litigation should remain in the [Los Angeles] court," and the settling parties' concurrence that "nothing in this settlement agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

Alyse Lazar, "DWR's treatment of the transfer of Table A amounts from Kern County Water Agency to Castaic Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph IIIC4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as actions that relate to the potential environmental impacts approving the Monterey Amendments." Section 1(0) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 AF of water from Kern County Water Agency to the Castaic Lake Water Agency, approved by DWR on March 31, 1999." DWR has not completed any draft or final analysis regarding these transfers." Given both the required state leadership on an ongoing Tier 1 environmental study and the pending litigation, the future of the Castaic transfer and, indeed, the broader Monterey Amendments, cannot be assumed. 48

The Draft EIR's assertion that the Settlement Agreement "did not change the substance of the Monterey Amendments" is also misleading. Although those amendments are part of the "Monterey Plus" project, the agreement also eliminates misleading references to "entitlements" from the state contracts and adds a new provision to the contracts imposing water reporting requirements. The agreement also imposes a host of other substantive changes in State Water Project operation that should be described in the Final EIR. 49

Faulty Assessment of the No Project and Project Alternatives

Castaic's refusal to await DWR's "Monterey Plus" EIR would fatally compromise its ability to identify alternatives to the proposed transfer that might maximize its benefits and minimize its environmental impacts statewide prior to rendering the transfer a *fait accompli*. DWR's EIR will programmatically address Castaic's transfer in the context of statewide contract amendments. A major issue requiring assessment in that document will be the possible *alternative* dispositions of the 41,000 acre feet of Table A amounts to serve other uses. To list several possible examples, the alternative uses subject to statewide analysis might include ecological restoration, urban infill development in Los Angeles or San Diego, and relief from cutbacks of Colorado River deliveries in excess of the California's 4.4 million acre-feet in annual entitlement. (See *Arizona v. California* (1964) 376 U.S. 340 (Colorado River); fn. 7, *supra* p. 16).) In short, legally adequate assessment of these issues under CEQA will require 50

DWR's "statewide perspective" rather than the provincial experience of a local water agency, and demands recognition that this transfer is an overall part of the Monterey program. (*Friends I*, 95 Cal.App.4th at p. 1384.) 50

Faulty Assessment of Water Reliability

The Draft EIR's water supply assessment (especially in sections 3.15 and Appendix D) make highly problematic assumptions about state water reliability, as well as the availability of "surplus" water under Article 21 of the state project contracts. DWR's record of deliveries to contractors under the SWP figured centrally in the Third District's conclusion that the 1995 EIR must be set aside. (See *PCL v. DWR*, 83 Cal. App. 4th at 908 (noting the "huge gap between what is promised and what can be delivered" and that "actual, reliable water supply" is "in the vicinity of 2 to 2.5 MAF of water annually" rather than the 4.23 MAF of Table A "entitlements"); 83 Cal. App. 4th at 913 (average actual deliveries under the SWP from 1980-1993 "were around 2.0 MAF"). A frank assessment of DWR's record of deliveries is essential to a wide variety of issues addressed in the EIR, including the no project alternative as well as the assessment of hydrologic impacts, land use and planning impacts, growth-inducing impacts, and cumulative impacts. Anticipating the importance of this issue, the Monterey Settlement Agreement required periodic SWP reporting on the reliability of SWP deliveries. 51a 51b 51c

The Draft EIR uses dubious modeling assumptions to claim an average of annual deliveries exceeding the historical record by approximately a million acre-feet. (See DEIR, 3.15-7.) In part, Castaic's EIR relies upon dated studies employing an outmoded model (DWRSIM). To move beyond DWRSIM's obvious deficiencies, the Draft EIR also makes unwarranted extrapolations from DWR's 2003 reliability report. 51d 51e 51f

That report has faced significant controversy regarding its overall conclusions and the computer modeling that underpins its reliability projections. For instance, the reliability report constructs delivery probability charts for the SWP for two years, 2001 and 2021. As noted by several commenters, the median delivery identified in the report (3.297 MAF) is on the order of 50% greater than the actual record of historic deliveries to the SWP as reported by DWR. A detailed analysis by Dennis O'Connor for the California Research Bureau, referenced in the comment 51g

letter of Senator Machado,[2] indicates that the draft reliability report provides no credible explanation for this disparity. O'Connor's analysis concludes that among other problems, the results are inconsistent with previous estimates and models, recent deliveries were lower than the modeled 2001 conditions, and 2021 does not reflect any growth in upstream consumptive use. His assessment also observes that CALSIM II is not calibrated or otherwise verified, and that the draft reliability report does not use the CALSIM II model as designed. Because the draft reliability report appears to overstate the supply reliability of the SWP, O'Connor's analysis warns that DWR's assessments of reliability should not replace the "paper water" problem with a new, simulation-based "cyber water" problem. Other comment letters, notably those of Robert C. Wilkinson, Peter Gleick, and Arve Sjovold, reach similar conclusions. (Please see http://swpdelivery.water.ca.gov/ and comments submitted regarding the instant EIR by Arve Sjovold.) 51g

Controversy over the reliability report, on which this EIR relies, led to review of CALSIM II modeling by an External Review Panel including some of the world's leading experts on water resource systems. Their report, "Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California" was released on December 4, 2003. The Panel raised serious concerns regarding the application of the model to predicting reliable deliveries, especially as those deliveries related to particular contractors. Many of the Panel findings agree with concerns we have articulated throughout the Monterey EIR process. Notably, the Panel found that: 51h

- "Examination of the report "CALSIM II Simulation of Historical SWP/CVP Operations,' DWR (2003) indicates that the current formulation of CALSIM II: Overestimates water deliveries to SWP and CVP contractors..." (p. 11)
- "Most successful applications of optimization [CALSIM's type of computer model] ...have calibrated their objective functions...so that the model results correspond to what actually happens or would happen under a particular hydrologic and demand scenario...It does not appear that such a calibration of the objective function weights in CALSIM has yet been completed." (p. 4)

[2] See Appendix E page E-94 at http://swpdelivery.water.ca.gov/SWP%20Delivery%20Reliability.final.2002.pdf.

- "...currently many users are not sure of the accuracy of the results. A sensitivity and uncertainty prediction capability and analysis is needed" (p. 8)
- "In our opinion, CALSIM II has not yet been calibrated or validated for making absolute predictions values." (p. 9)
- Regardless of how possible it is to match the model closely with observed behavior, statistics on the accuracy of the calibration run should be supplied to users to enable them to gauge the likely errors involved with using the model output. (page 9)
- In CALSIM II, "Groundwater resources are assumed infinite, i.e., there is no upper limit to groundwater pumping." (p. 8)
- "Realistic upper bounds to pumping from any of the aquifers represented in the model need to be developed and implemented." (p. 27)
- "In general, the level of representation of groundwater in CALSIM II is not reasonable from the point of view of the reviewers." (p. 27)
- "In many cases, it appears that water use and other hydrologic data inputs to CALSIM II are based on data collection and analyses that took place during the 1960's when DWRSIM and PROSIM were being constructed. It is important to ensure that data used for CALSIM II are up-to-date and consistent with the best current information." (p. 20).
- In general, it appears that the developers of CALSIM II do not have a clear idea of how to define the scope of CALSIM II use and many of its applications are evolving in a reactionary manner. Model developers should identify clearly the desired uses for CALSIM II and then determine acceptable approaches for satisfying those desires. Developers should seek to improve data accuracy and overcome unrealistic assumptions to improve the confidence in model results. (page 25)

51h

Furthermore, as numerous CEQA cases have consistently held, local agencies such as CLWA have an independent responsibility to adequately assess reliability. Castaic therefore, and cannot rest its analysis solely on its old DWRSIM studies and the DWR Reliability Report.

52

Faulty Assessment of Growth-Inducing Impacts

Without adequate review, the transfer would place available water in one of the places in California most likely to promote urban sprawl and destroy environmental habitat. The Draft EIR's growth inducement section (Chapter 4) fails to appreciate the significance of this transfer as a linchpin of sprawl development. Following the *PCL* decision and through the Monterey EIR, the state has a responsibility and, as noted above is the only entity with the requisite resources and purview, to determine the environmental impacts, particularly including induced growth impacts, of transfers such as the 41,000 acre-foot transfer. Local agency analysis of these impacts prior to the Tier I Monterey EIR impermissibly and imprudently ignore the state's role in considering alternatives to that transfer which would, for example, meet existing shortfalls in developed Southern California dependent on diminishing Colorado River supplies, while avoiding "dumb growth" in the undeveloped frontier at the Los Angeles-Kern County border. 53

Rather than squarely confronting the scope and mitigation of growth inducement, the Draft EIR improperly defers the issue to subsequent decisions of local agencies on individual projects. A "chicken and egg" problem emerges here. As reflected in PCL's comment letters on specific projects, local agencies are relying upon *Castaic* to inform them of the reliable water available to support specific proposed projects ranging in scope from small developments to Newhall Ranch. The Draft EIR is entirely speculative in its assumption that project-related growth can be mitigated to insignificance. This issue cannot be credibly reviewed in isolation from the statewide Monterey EIR. 54

Your consideration of these comments is greatly appreciated.

Sincerely,

Sage Sweetwood
President, PCL

Naomi Kovacs, MPA
Executive Director, CPA

STATE OF CALIFORNIA -- THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

JUN 17 2004

Alyse M. Lazar, Esq.
3075 East Thousand Oaks Boulevard, Suite 100
Westlake Village, California 91362

Dear Ms. Lazar:

In response to your letter of May 18, 2004, the Department of Water Resources (DWR) is preparing an Environmental Impact Report (EIR) on the Monterey Amendments and the Settlement Agreement resulting from the Court of Appeal decision in *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892.

DWR's treatment of the transfer of Table A amounts from Kern Country Water Agency to Castaic Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph III.C.4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as actions that relate to the potential environmental impacts of approving the Monterey Amendments." Section 1(O) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 acre feet of water from Kern County Water Agency to the Castaic Lake Water Agency, approved by DWR on March 31, 1999." DWR has not completed any draft or final analysis regarding these transfers. Attached is an estimated schedule for completion of the EIR.

The Settlement Agreement (Section III.E) also provides "with respect to Section III.(C)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation. The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

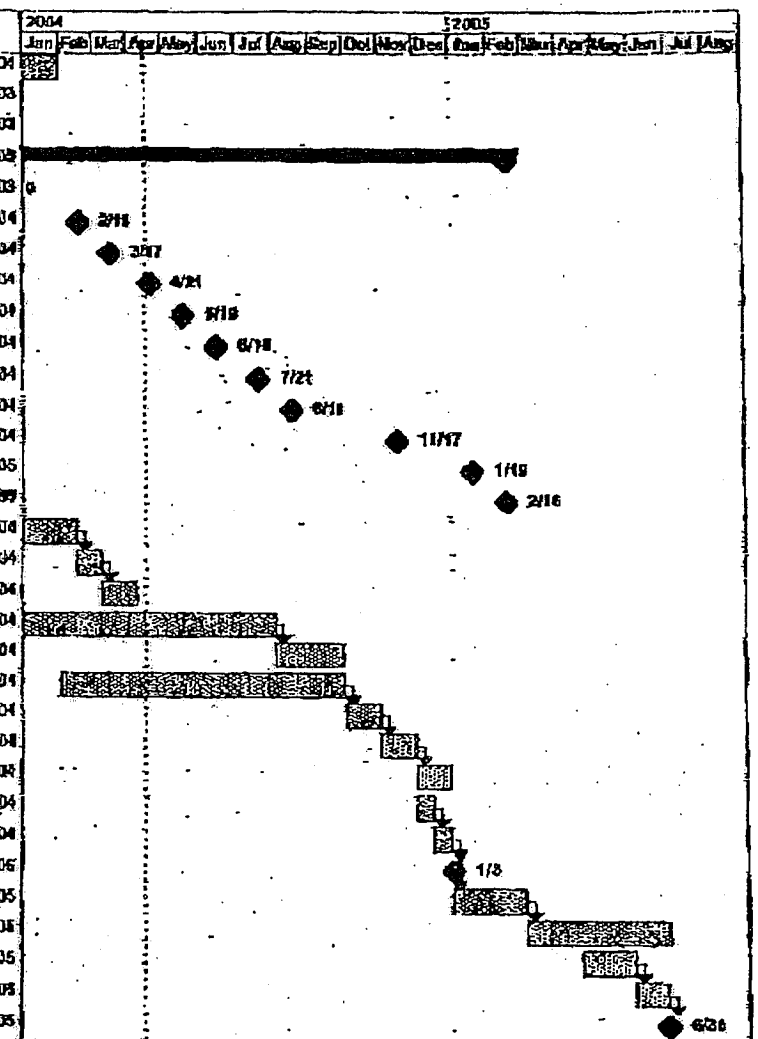
If you would like further information regarding the EIR on the Monterey Amendments and the Settlement Agreement, please contact Delores Brown at (916) 227-2407.

Sincerely,

for Lester A. Snow
Director

Attachment

ID	Task Name	Start	Finish
1	Conduct non-model dependent environmental analyses	Wed 10/1/03	Fri 1/30/04
2	DWR Review of selected sections	Mon 11/3/03	Fri 11/7/03
3	EIP Revise	Mon 11/10/03	Wed 11/12/03
4	EIR Committee Meetings	Wed 11/19/03	Wed 2/18/05
5	Meeting 1	Wed 11/19/03	Wed 11/19/03
6	Meeting 2	Wed 2/18/04	Wed 2/18/04
7	Meeting 3	Wed 3/17/04	Wed 3/17/04
8	Meeting 4	Wed 4/21/04	Wed 4/21/04
9	Meeting 5	Wed 5/19/04	Wed 5/19/04
10	Meeting 6	Wed 6/16/04	Wed 6/16/04
11	Meeting 7	Wed 7/21/04	Wed 7/21/04
12	Meeting 8	Wed 8/18/04	Wed 8/18/04
13	Meeting 9	Wed 11/17/04	Wed 11/17/04
14	Meeting 10	Wed 1/19/05	Wed 1/19/05
15	Meeting 11	Wed 2/16/05	Wed 2/16/05
16	Prepare Admin Draft EIR Part 1	Wed 10/1/03	Mon 2/16/04
17	DWR Review	Tue 2/17/04	Tue 3/8/04
18	EIP Revise	Wed 3/10/04	Thu 4/8/04
19	Conduct CALSIM modeling & Post Processing	Mon 12/1/03	Mon 8/2/04
20	Conduct Model dependent Environmental Analysis	Tue 8/3/04	Fri 10/1/04
21	Prepare Admin Draft EIR Part 2	Mon 2/2/04	Fri 10/1/04
22	DWR Review	Mon 10/4/04	Mon 11/1/04
23	EIP Revise	Tue 11/2/04	Wed 12/1/04
24	Prepare Draft EIR	Thu 12/2/04	Fri 12/31/04
25	DWR Review	Thu 12/2/04	Thu 12/16/04
26	EIP Revise	Fri 12/17/04	Fri 12/31/04
27	Publish DEIR	Mon 1/3/05	Mon 1/3/05
28	Public Review of Draft EIR	Mon 1/3/05	Thu 2/3/05
29	Prepare Final EIR	Fri 3/4/05	Thu 6/30/05
30	DWR Review	Wed 4/20/05	Thu 6/2/05
31	EIP Revise	Fri 6/3/05	Wed 6/29/05
32	Publish FEIR	Thu 6/30/05	Thu 6/30/05



Project: Monterey Plus EIR Schedule
Date: Fri 4/16/04

Task | Split | Progress | Milestone | Summary

P:\WP Only\10680-02\Schedule\Monterey Plus EIR

Page 1

LAW OFFICE OF
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May 18, 2004

Lester Snow, Director
Department of Water Resources
Room 1115-1
P.O. Box 942836
Sacramento, California 94236

RE: New Monterey Agreement EIR

Dear Director Snow:

Pursuant to the Court decision in *Planning & Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 (hereafter "*PCL*"), the Department of Water Resources is required to prepare a new Environmental Impact Report regarding all aspects of the Monterey Amendments. I understand that you will be overseeing this process.

The Settlement Agreement that was entered into between all of the parties to the *PCL* case on May 5, 2003 set forth various requirements for the EIR. According to Attachment E-1 of this Settlement Agreement, the parties specifically excluded the 41,000 afy entitlements purchased by Castaic Lake Water Agency ("CLWA") emanating from the Monterey Amendments from the list of final transfers. It is therefore my understanding that your office will be evaluating the environmental impacts of this 41,000 afy transfer as part of the Environmental Impact Report for your project (the Monterey Amendments Project.) In fact, page 11, paragraphs III C.4 of the Settlement Agreement mandates DWR to analyze the potential environmental effects relating to CLWA's project ("the Kern-Castaic Transfer").

As you may also be aware, the EIR prepared by CLWA for the 41,000 afy transfer was decertified by the Los Angeles Superior Court on November 1, 2002 in *Friends of the Santa Clara River v. Castaic Lake Water Agency*, Los Angeles County Superior Court Case No. BS 056954. In order for CLWA's new EIR to be legally sufficient and in conformance with the appellate court's decision, it must contain an analysis of the potential environmental effects of the Kern-Castaic Transfer on the entities that have and will continue to lose this 41,000 afy source of water due to the transfer as well as the impacts on the State Water Project ("SWP") system resulting from the movement of this water from its source in Kern County to Santa Clarita. Logically and in conformance with CEQA, both DWR's EIR and CLWA's EIR must contain an analysis of the impacts from this loss of water upon Kern County agricultural users as well as all others affected by the transfer.

I currently represent Friends of the Santa Clara River in the *Friends of the Santa Clara River v. Castaic Lake Water Agency* litigation. In the Judgment Granting Peremptory Writ of Mandate in the Friends' case, the Court ordered that it "retains jurisdiction until respondent Castaic Lake Water Agency certifies an Environmental Impact Report that complies with the California Environmental

May 18, 2004 letter to Dir. Snow, Dept of Water Resources

Quality Act and is consistent with the views expressed by the Court of Appeal Opinion filed January 10, 2002, Case No. B 145283."

For these reasons, I am requesting that you provide me with a copy of any analysis performed to date by DWR regarding the potential environmental impacts of the Kern-Castaic transfer, whether in draft or final form.

Additionally, please advise me of the procedural steps that DWR will take before making a determination whether or not to approve the Kern-Castaic transfer as a "final" transfer and the criteria that will be utilized for making this determination. If there is a proposed schedule for the completion of the Monterey Amendments EIR and/or for these procedural steps for determining whether or not to approve the Kern-Castaic transfer as a long-term transfer, please provide me with a copy of same.

I would appreciate receiving this information from you by May 28, 2004. If you have questions regarding the above or would like to discuss the matter, please call me at (805) 496-5390. Thank you for your anticipated assistance. I look forward to hearing from you.

Very truly yours,

Alyse M. Lazar

cc: Delores Brown

Public Citizen

Buyers Up • Congress Watch • Critical Mass • Global Trade Watch • Health Research Group • Litigation Group
Joan Claybrook, President

August 16, 2004

Castaic Lake Water Agency
Attn: Marylou Cotton
27234 Bouquet Canyon Rd.
Saugus, Ca. 91350
Fax 661 297-1611

Re: 41,000 Acre Foot Water Transfer SCH# 1998041127

Dear Ms. Cotton:

Public Citizen, a consumer rights organization that has been working to strengthen public oversight over water, urges Castaic Lake Water Agency to refrain from conducting the environmental review of permanent transfers of State Water Project Table Amounts. We believe that is unlawful for CLWA to be the lead agency under CEQA for this project because the Department of Water Resources is currently conducting its statewide review of the "Monterey Plus" Project. 55

Please refer to the Sierra Club's August 15 letter for further reasoning why the DWR must be the lead agency.

We request that this document be withdrawn and that the document not be re-submitted for circulation until the Monterey Agreement EIR is completed and certified. 56

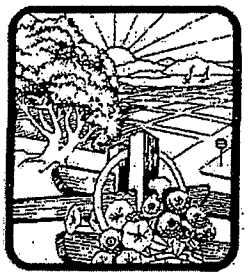
Sincerely,

Juliette Beck

Juliette Beck
Director, Water for All California

1615 Broadway, Ninth Floor • Oakland, CA 94612 • (510) 663-0888 • www.citizen.org

SCOPE
Santa Clarita Organization for Planning the Environment
TO PROMOTE, PROTECT AND PRESERVE THE ENVIRONMENT, ECOLOGY AND QUALITY OF LIFE IN THE SANTA CLARITA VALLEY
POST OFFICE BOX 1182, CANYON COUNTRY, CA 91386



8-10-04

Castaic Lake Water Agency
Attn: DEIR Comments
27234 Bouquet Canyon Rd.
Saugus, Ca. 91350
Fax 661 297-1611

08-16-2004 P01:17

Re: 41,000 Acre Foot Water Transfer SCH# 1998041127

Dear Sirs:

As we stated in our NOP comments, we believe that Dept. of Water Resources must be the lead agency for the following reasons 57

- The published appellate decision in *PCL v. DWR*, 2000 found that the Dept, of Water Resources should be the lead agency for this review.
- DWR is best suited to ensure that widespread notification of interested parties occur.
- DWR is best suited to recognize environmental impacts that might be incurred to a wide spread area of the state as a result of this water transfer and to properly asses such impacts.
- DWR, in its capacity as operations manager of the SWP, will be acquainted with other state projects that would affect or be affected by this transfer.

Changes to water quality including increased chlorides, nitrates or other constituents of SWP project water, and how those constituents will affect the new TMDL requirements approved by Regional Water Quality Control Board approved subsequently to the previous EIR, should be discussed and mitigated. Increased pollution from Trihalimethanes in public water supply due to higher percentage of reliance on SWP project water as main source should be disclosed. Trihalamethanes now exceed the new MCL standards after filtration by CLWA due to the filtration method currently used. 58

This document relies on transfers to the Semi-Tropic Water Banking project for supply reliability, but does not address potential water quality issues that could preclude ground water from being pumped back into the aqueduct. This is an issue that would be addressed if DWR were the lead agency. We incorporate by reference all contracts between, DWR, CLWA, and Semitropic, particularly the pumpback agreements and sections of the EIR indicating high arsenic and radon levels in the Semi-tropic ground water basin. There is no up to date water quality data from the ground water in the Semi-Tropic area included in this report. If the Semi-tropic Water Storage program is going to be relied upon to increase water supply reliability, then water quality data should be made available for review. 59

In conclusion, we request that this document be withdrawn, that the document not be re-submitted for circulation until the Monterey Agreement EIR is completed and certified, and that all parties whose ground water may be impacted are properly notified when re-circulation occurs. 60

Sincerely,
Pat Saletore
Pat Saletore

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Angeles Chapter

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Los Angeles, CA 90010-1904

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08-16-2004 P01:17

8-10-04

Castaic Lake Water Agency
Attn: Marylou Cotton
27234 Bouquet Canyon Rd.
Saugus, Ca. 91350
Fax 661 297-1611

Re: 41,000 Acre Foot Water Transfer SCH# 1998041127

Dear Ms. Cotton:

In the notice of preparation for this project, the Castaic Lake Water Agency announced its intention to move forward with its own separate environmental review of permanent transfers of State Water Project Table A Amounts. The Sierra Club and others commented at that time that such a procedure would violate state law, several court decisions and the Monterey Agreement Settlement to which CLWA is a signatory. 61

As you are aware, in the Monterey settlement agreement, which Castaic signed, the court-identified lead agency, the Department of Water Resources. DWR is already conducting a statewide environmental review of a new "Monterey Plus" project. We strongly urge Castaic to refrain from moving forward with this separate project review, which is premature and likely to operate at cross-purposes with DWR's statewide review.

Moreover, even if Castaic continues to proceed now with its own separate EIR on this transfer, it lacks the institutional authority and statewide accountability to serve as CEQA lead agency under the *Planning and Conservation League* decision. 62

The Sierra Club re-iterates the following legal issues put forward in the January 2004 comment letter by the Planning and Conservation League. These issues were either ignored or inadequately addressed in the Environmental Impact Report now under review: 63

The "Monterey Amendments" Problem

Under *Planning and Conservation League* and two sequel decisions addressing Castaic's transfer of Table A amounts, "tiering" or otherwise relying on that EIR would render the approval decision vulnerable to CEQA challenge. However, any attempts by Castaic to conduct a separate Monterey review in advance of DWR's, or to rely on its own hypothetical non-Monterey analysis, would shift rather than solve this fundamental CEQA problem.

In *Planning and Conservation League*, the Third District Court of Appeal found that Central Coast Water Agency's 1995 EIR "failed to meet the most important purpose of CEQA, to fully inform the decision makers and the public of the environmental impacts of the choices before them." (83 Cal.App.4th at 920.) CCWA improperly served as lead agency in place of DWR and prejudicially failed to analyze the enforcement of the pre-Monterey permanent shortage provision, article 18(b), prior to its elimination from the State Water Project contracts. The appellate court found it unnecessary to adjudicate the other CEQA deficiencies identified by the Monterey plaintiffs after analyzing the defects in the lead agency selection and no project assessment, 89

observing that "DWR, with its expertise on the statewide impacts of water transfers, may choose to address those issues in a completely different and more comprehensive manner." (*Id.*) The court also noted that the deficiencies in the 1995 EIR might be related to the "provincial experience" of CCWA. (*Id.*) 63

In *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, the Second District Court of Appeal ordered the decertification of an EIR prepared by Castaic, supporting its Monterey Amendments-based attempt to permanently acquire 41,000 acre-feet of State Water Project entitlements (now "Table A" amounts) from the Kern County Water Agency and its Wheeler Ridge member district. The appellate court found that Castaic's EIR violated CEQA by "tiering" from the invalidated Monterey EIR. This ruling involved precisely the same transfer that Castaic now attempts to address in its separate 41,000 NOP. That piecemeal approach, however, is in apparent defiance of the expectation of the court of the appeal in the *Friends* case that Castaic would await "action by the DWR complying with the *PCL* decision." (95 Cal.App.4th at p. 1388.)

Another recent Second District appellate decision, *Santa Clarita Organization for Planning and the Environment (SCOPE) v, County of Los Angeles* (2003) 106 Cal.App.4th 715, critically addressed Castaic's characterization of the 41,000 acre-feet transfer. In that case, the County of Los Angeles violated CEQA in its review of the West Creek development project that erroneously assumed that 100 per cent of Castaic's purported 41,000 acre-feet would be available in wet years and 50 per cent in drought years. Drawing on *Planning and Conservation League's* assessment of the historic disparity between Table A amounts and deliverable water, the court concluded that the EIR failed to undertake a "serious and detailed analysis" of State Water Project supplies, and observed that "[t]he dream of water entitlements for the incomplete State Water Project is no substitute for the reality of actual water the SWP can deliver." (*Id.* at pp. 723, 717.)

The EIR appears to confuse the legitimacy of Castaic's separate review with the distinct issue of the interim operation of the 41,000 acre-feet transfer pending further environmental review. (See Public Resources Code section 21168.9; 41,000 NOP p. 1.) The trial court did not enjoin interim operation, but left the issue open to further demonstrations that could lead to interim prohibition. Various cases addressing the interim use of this water for new projects prior to the completion of CEQA review are now working their way through the Court system.

The 41,000 acre-feet transfer is on not on the list of Table A amount transfers recognized as "final" in the Monterey Amendments settlement agreement (Attachment E). Such transfers cannot proceed without new environmental analysis satisfying CEQA. (Monterey Settlement Agreement, section VII.A.) That settlement agreement, while recognizing that the remedial issue remains before the Second District, also requires DWR's "Monterey Plus" EIR to analyze the 41,000 acre-feet transfer, as well as other transfers facilitated by Monterey Amendments provisions, such as other agriculture-to-urban transfers referenced in Article 53 of those amendments. (Section II.C.4.)

If Castaic rushes to finality by continuing its separate environmental reviews at this stage, without the benefit of DWR's statewide "Monterey Plus" EIR, its perspective would mirror the "provincial experience" criticized in the *Planning and Conservation League* decision. (83 Cal. App. 3d at 918.) Such an attempt would also create a substantial risk of final decisions based on local analysis that may well prove inconsistent with DWR's "Monterey Plus" EIR.

The "Lead Agency" Problem 64

If Castaic continues with this separate environmental review without awaiting DWR's assessment in the "Monterey Plus" EIR, it would violate CEQA's lead agency requirement based upon the well-established standards set forth in *Planning and Conservation League v. Department of Water Resources*. The court in that case could hardly have been clearer that DWR is the "state agency charged with the statewide responsibility to build, maintain, and operate" the State Water Project. (*Id.* at p. 906.; see also Wat. Code, §12930, *et seq.*) Finding that DWR was the only entity with the requisite statewide perspective and expertise to serve as lead agency, the court found it "incongruous to assert that any of the regional contractors" could "assume DWR's principal responsibility for managing the SWP." (*Id.*)

Similarly, the court-approved settlement agreement in *Planning and Conservation League* expressly recognizes DWR's duty as "the State agency responsible for administration and operation of the SWP," as well as its continuing obligation to comply with applicable requirements of CEQA and the Water Code. (Agreement, Section X.B.) The transfer guidelines disclosed to contractors under the settlement agreement also recognize the continuing need to comply with all existing legal requirements, including CEQA, and to honor the lead agency principles identified in the Third District's decision in the Monterey Amendments case. (Agreement, Attachment C.)

These principles apply clearly to the proposed permanent transfers of the Table A amounts referenced in the state project contracts, which require DWR's approval and presuppose the application of Monterey. They also concededly require changes in the amount of supplies available to several water agencies, the "location and timing" of project deliveries, and changed utilization of the project's "conveyance and storage facilities." The transfers, which may require the fallowing of farmland in agricultural areas and are associated with proposed annexations linked to some of the more controversial development projects in California, demand the statewide authority and experience that only DWR can provide.

Neither the summary references to other project EIRs nor a hypothetical "non-Monterey" analysis of the transfers can substitute for DWR's new assessment of the Monterey changes based on its statewide expertise and authority. For example, although transfers with DWR approval were available under Article 41 of the pre-Monterey State Water Project contracts, it is highly speculative whether agriculture-to-urban transfers such as this proposal would even have taken place without the Monterey Amendments, since those Table A amounts would have been subject to "agriculture first" cutbacks under pre-Monterey article 18(a). Read in context, such maneuvers would amount to little more than the "straw man" argument considered and rejected in the *Friends* appeal. (95 Cal.App. 4th at p. 1387.)

Lastly, we note that the same General Manager of Central Coast Water Agency, Dan Masnada, under whose guidance, CCWA proceeded in violation of CEQA as the wrong lead agency, is now the general manager of Castaic Lake Water Agency. In that capacity, he is once again directing his agency with full knowledge of the consequences, to proceed as lead agency in violation of the law.

Failure to notify all interested parties 65

Communities, local organizations and agencies that would have the most knowledge of impacts surrounding these statewide issues, the accuracy of the environmental disclosure and the viability of proposed mitigation, were not notified. Failure to notice and receive input from interested parties deprives the decision-makers of a full disclosure of all impacts and deprives the affected community or public agency of its right to provide information during the public process. The

91

DWR would be better equipped to ensure that all parties are properly noticed and involved in the project review. 65

Issues not addressed by the Environmental document 66

This EIR purports to analysis statewide issues, including but not limited to, impacts to agricultural lands, sensitive species, the accuracy of the DWR CalSim model, air quality, etc., but since the EIR was not circulated on a statewide basis, the public and agencies from other areas may not have been informed of the release of the document, and thus did not have the opportunity to review its accuracy.

Inpacts to DWR facilities - Castaic Lake Water Agency cannot presume to be the lead agency for State Water Project facilities. Nor does it discuss the ability of the State Water Project facilities to accommodate this huge transfer now that the Metropolitan Water District will be requiring delivery of a greater amount, if not all of its Tile A amount. Adequacy of facilities such as the Banks pumping station, effects of the ESA and CalFED Record of Decision, capacity in the San Luis Reservoir in light of recent sharing agreements are not discussed. 67 68

Impacts to Agricultural Resources - In a letter dated 5-19-98 from the Planning Department of Kern County to the original Notice of Preparation for this project, a request was made to ensure that the transfer of 130,000 acre feet from the Monterey agreement was not exceeded. This Agency requested that acknowledgment of previous actions be made in the DEIR and that cumulative impacts of SWP capacity rights be analyzed. We would like to re-state that request for this document and include that letter which you have in your possession by reference into these comments. They also requested an analysis of the impacts on the land within the WRMWSD in Kern County including agricultural Preserve Map 204, 220 and 220No. 4-12-19. Additionally, they requested a table showing "the ultimate potential amount of capacity that could be transferred how many acre feet would be converted to M&I allotment for urban users and as a condition of transfer, if any land in WRMWSD would be permanently fallowed, retired or detached from the District". This information is important because it allows the decision-makers to access the impacts that might be caused to agricultural land or the increase in pumping of groundwater that might be caused by this project. 69 70

The EIR includes a report entitled "Effects on Agricultural Production ...etc." found in Appendix C. We note that this report, included for circulation in the DEIR is labeled as *DRAFT* report. We wonder why the Final Report was not included for circulation and request that CLWA state how they can base their assumptions on a draft report. 71

A chart found on page 15 of this report is apparently presented in response to the Kern Agency request. It appears to show water needs already in excess of WRMWSD Title A amount even using 100% of the water entitlement, a situation that the Court has already found not to be tenable (see foot note 7, *PCL v DWR*, 2000). This chart is footnoted with the statement that it "Assumes supplies available regardless of source." There is no analysis as to whether this transfer will cause fallowing in future drought years, only the statement that it hasn't in the past. There is also no analysis as to whether overdraft is occurring or will occur in the next drought cycle, only a statement that the chart assumes supplies are available without any explanation of the impacts of over-pumping to make them available. There is no chart that shows how much water was used from what sources before the transfer in question and how much water will be needed and how it will be supplied *after the transfer.* 72

The original purpose of the state water project was to provide a supplementary water source so that ground water would not be pumped in excess of sustainable levels. Now it appears that this water transfer will bring about the very situation one sought to avoid. We believe it is imperative that CLWA notify all interested parties in surrounding areas of their intention to make this transfer, and of the possible increased need for ground water pumping if this transfer occurs. Because pumping of ground water sources to replace state water transferred to other areas will have significant impacts on the Public Trust and the viability of farming operations, we reiterate, the DWR should be the lead agency for this document. 73

The closing paragraphs of this report include a rather chilling understatement 74

> ***"In a series of consecutive 'dry years', the unavailability of a proportional share of the SWP contract amount may contribute to a mismatch between water supply and demand."***

Have farmers been notified of this "mismatch"? How much fallowing will this cause, what will be the economic impacts to farmers, laborers and communities? Isn't this exactly the question that everyone has requested that the EIR address? Where is the answer? Given the substantial move away from annual row crops into permanent orchards of fruits, nuts and vineyards that require multiple years of investment (see Table 2 on pg. 6), dry years with insufficient state water will substantially damage these crops. *One should also note the increase in groundwater pumping indicated by this table.*

Flooding and water quality changes - In a letter dated May 21st 1998 also from the previous EIR review, the Ventura County Flood Control Department notes that the NOP correctly identifies downstream flooding from increased effluent flows as a potential significant impact. There should be a discussion of the potential for this impact in the DEIR for the project before you. 75

Changes to water quality including increased chlorides, nitrates or other constituents of SWP project water, and how those constituents will affect the new TMDL requirements approved by Regional Water Quality Control Board approved subsequently to the previous EIR, should be discussed and mitigated. Increased pollution from Trihalimethanes in public water supply due to higher percentage of reliance on SWP project water as main source should be disclosed. (See attached news article). 76

This document purports to address statewide issues, but fails to discuss the impacts of the Bay-Delta water quality standards on this project. Again, this is but another example of why DWR must be the lead agency. 77

This document relies on transfers to the Semi-Topic Water Banking project for supply reliability, but does not address potential water quality issues that could preclude ground water from being pumped back into the aqueduct. This transfer project is currently being litigated. 78

Growth Impacts - In a letter dated May 12th, 1998 from the City of Santa Clarita, the City states that "the DEIR should define current and anticipated water availability for the CLWA service area as compared to the ultimate buildout of the City of Santa Clarita General Plan, and the Santa Clarita Valley Areawide Plan. This information was requested to clearly identify the need for the project, and should be included for the current project. The City's requests for disclosure in the areas of geology, growth inducement and impacts to Kern County ground water and development monitoring system analysis should also be addressed for the current project. 79

In response to this question, the CLWA relies, but pretends not to rely, on the Urban Water Management Plan that is being litigated. The issue under litigation is over-statement of 80 93

water supply, particularly the reliance on the availability of polluted water from wells that are now closed because they exceed the MCL for ammonium perchlorate. The Sierra Club requests that an analysis of the impact of growth in a multiyear drought scenario in the Santa Clarita Valley be conducted as part of this EIR. Santa Clarita is now relying on state water as its primary source of supply (since the ground water is either fully committed or polluted -see attachment). We believe it would be particularly important for decision makers to understand the impacts of the recurrence of the historical SWP worst case scenario when only 13% of the contractors' Title A amounts were available. (See notes attached from presentation to Santa Clarita City Council, June 29, 2004. Transcript to be provided before Final EIR is released.) 80

Sensitive Species - The current project is based on an EIR that does not address impacts to endangered species as a result of the entitlement transfer. Draw down of ground water will result in reduction or elimination of surface water and may occur in both the transferring and receiving agencies (during drought periods when state water is unavailable) as a result of this project. Since species issues were not addressed in the Warm Springs/Maricopa/Belridge EIR, they should be addressed for the proposed project, as its implementation would cause significant impacts. These include impacts to endangered species impacted in both areas including but not limited to the San Joaquin Kit Fox in the WRMWSD and the Unarmored Three-Spine Stickleback in the Castaic Lake Water Agency . The Kit fox could be impacted by drawdown of ground water that impacts surface flows or diversion of surface flows required by lack of state water project supplies. The Stickleback could be affected by increased effluent flows that cause a change in surface water quality (this problem has already been identified as an area of concern by the Regional Water Quality Board) or increased pumping of ground water required to make up for delivery cutbacks during a drought. Impacts and proposed mitigations should be discussed. We note that a section 4d consultation may be required if endangered species will be affected and request that the US Army Corps of Engineers be sent notification of this project since it appears that they have not been so notified. 81

The EIR includes a list of sensitive species in Appendix B, but does not discuss how these species will be affected when substantial over-draft occurs, either due to over-reliance on this SWP water in the Santa Clarita Valley without sufficient back up sources or over-draft in the farming areas due to transferring away to much of their supplemental SWP water supply. 82

Further, it has recently come to our attention that Berenda Mesa has published a draft EIR to withdraw/divert approximately 70,00AF from local streams and ground water sources. Since the transfer of SWP surface water will affect ground water pumping sources, this EIR and its impacts must be included and addressed during the water transfer review process. We therefore believe this document must be included in the review process and incorporate it by reference. 83

Air Quality - The effect of the project on increasing particulate matter from increased or overdraft use of ground water in a PM10 non-attainment zone for this air pollution problem should also be addressed. THE EIR only addressed project specific impacts such as pumping facilities and grading for new pipes. It did not address fugitive dust created by dried up landscapes. CLWA is well aware of the problems created by dust due to draw down of the Owens Lake and its impact on surrounding communities because one of its Directors helped negotiate the settlement on behalf of LADWP. This is an example of an impact that must be anticipated in both the transferring farmlands and the receiving Santa Clarita area. Santa Clarita is already in a non-attainment zone for PM10s as is the Central Valley. Clean Air Act compliance will be necessary. A cut-back in water supply caused by air quality concerns as already occurred for the LA Dept. of Water and Power in the Owens Valley, would be much more appropriately dealt with in the planning process than after new building is already approved based on that water. 84

State Water Reliability - One of the most apparent reasons that the review must await completion of the Monterey "Plus" environmental review is that a new hydrological model "CalSim II" is being proposed for use in evaluating the reliability of water deliveries of the sate project supply. This information is obviously critical to all the above stated issues. There has been substantial criticism of the model (peer review attached). Among other circumstances, the model does not address climate change or levee breaks such as the substantial recent failure in the Jones tract (news article attached). The DWR must complete its environmental review of this issue and resolve discrepancies before reliability factors on which the Castaic EIR is based, can be assumed to be accepted. Again, tiering is based on a DWR document that has not been circulated for review, has not been through the public comment process and has not been certified. 85

Summary 86

We believe that DWR must be the lead agency for the following reasons

- The published appellate decision in *PCL v. DWR*, 2000 stated:

  "We agree with the trial court that DWR, not CCWA, has the statutory duty of assessing environmental consequences of projects involving the SWP [State Water Project]." (Pg. 1 of Decision).

  We incorporate this decision by reference into the administrative record.
- DWR is best suited to ensure that widespread notification of interested parties occur.
- DWR is best suited to recognize environmental impacts that might be incurred to a wide spread area of the state as a result of this water transfer and to properly asses such impacts.
- DWR, in its capacity as operations manager of the SWP, will be acquainted with other state projects that would affect or be affected by this transfer.
- CLWA failed to address many issues of statewide concern in this document.

We therefore request that this document be withdrawn, that the document not be re-submitted for circulation until the Monterey Agreement EIR is completed and certified, and that all parties whose ground water may be impacted are properly notified when re-circulation occurs. 87

Sincerely,
Johanna Zetterberg
Conservation Coordinator

Attachments
1. News article on Trihalimethane pollution
2. Excerpt from "Groundwater Modeling Analysis Upper Santa Clara River Basin". Ch2Mhill showing loss of production from perchlorate contaminated wells.
3. Excerpts from reports indicating safe yield of the Santa Clara River and current pumping levels.
4. Notes from Presentation by DWR and the Planning and Conservation League to the City of Santa Clarita on June 29th, 2004.
5. Peer review of CalSim II water model for the state water project
6. News article on the June 2004 levee break in Upper Jones tract from the ACWA newsletter

nta Clarita Valley
e
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Tuesday, August 10, 2

Royal Beating | The Angels win their fifth straight and sweep Kansas City. B1

Getting Even | Teen seeks to buy maker of gun that left his a quadriplegic. A9

50

reatment Taints Val Verde Wate

:yond-threshold levels of ılomethanes found in drinking :r, officials say.

By Matt Levin
IGNAL STAFF WRITER

potentially dangerous of compounds linked to cancer risks and miscarrates have exceeded ble levels in Val Verde's g water, county water officials said Monday.

More than 3,700 customers of Water Works District 36, the water utility that supplies Val Verde, have been drinking beyond-threshold levels of trihalomethanes (TTHMs), chemicals associated with various health problems including liver and kidney failure, bladder and colon cancer and failed pregnancy.

Water district and Environmental Protection Agency officials downplayed the danger and stressed that only a period of "prolonged exposure" of several years could cause serious health problems.

Val Verde water users have been exposed to the high contaminant levels for only three months and should not worry about their water, water district spokeswoman True Pawluk said.

"The water is safe," Pawluk said. "If it was dangerous, we would have taken it off-line immediately."

Water officials discovered the abnormally high levels of the contaminant in early July after conducting a routine test.

Samples revealed a TTHM concentration of 88 parts per billion, above the federal standard of 80 parts per billion.

This is the first time Water Works District 36 has exceeded the legal maximum TTHM concentration after the threshold was lowered in 2001, Pawluk said.

TTHMs are byproducts of the disinfection process used by many State Water Project wholesalers, including the Castaic Lake Water Agency. The chlorine used to kill bacteria and other harmful microorganisms bonds with organic matter present in the state water system, and the resulting toxic compound escapes the treatment plant undetected.

Water Works District 36 supplies only CLWA water to its customers.

CLWA officials said tl to replace chlorine as thi ry disinfection agent 2005. They will inste more costly chloram. does not produce TTHM combined with organic r

"This switch has bee plans for the better part years," CLWA General I Dan Masnada said. "Ess chloramine deals w TTHMs better, and tha

See WATER, p

ying to Beat the Summer Heat

Protecting

Water

Continued from page A1

we're phasing it in."

Other Santa Clarita utilities that purchase water from CLWA are less at risk for a high TTHM concentration because they combine CLWA's state water with local groundwater that is not susceptible to TTHM production.

Water Works District 36 is in negotiation with the Sheriff's Department to share some of the well water from the Pitchess Detention Center in Castaic until CLWA's chlorination process is phased out.

Although most of Val Verde's water would still come from CLWA, the new groundwater would help dilute the concentration of contaminants.

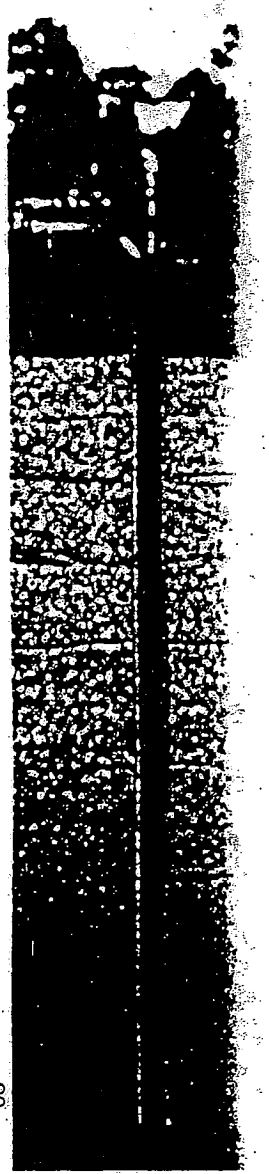
Pawluk said that although TTHM levels may not subside for the next few months, it is unnecessary for residents to take extreme measures such as boiling tap water or purchasing bottled water.

"This doesn't mean that customers will get sick," she said. "It's just an increased chance of getting sick. They (customers) don't need to use bottled water, but they can if they want."

Although most studies conducted on TTHMs concluded that only prolonged consumption leads to higher cancer risks, several studies have found a correlation between consumption during the first trimester of pregnancy and an increased likelihood of miscarriage.

A 1988 California study found a miscarriage rate of 15.7 percent for women who drank five or more glasses of cold water containing more than 75 parts per billion TTHMs, compared to a miscarriage rate of 9.5 percent for women with relatively low exposure.

> 'This doesn't mean that customers will get sick. It's just an increased chance of getting sick. They (customers) don't need to use bottled water, but they can if they want.'
>
> — True Pawluk, Spokeswoman Water Works District 36



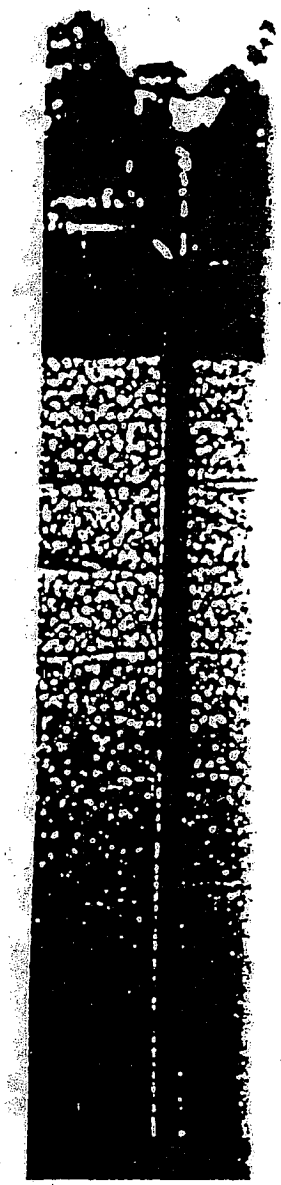
Groundwater Modeling Analysis
Upper Santa Clara River Basin

Restoring Impacted Water Supplies Near Whittaker-Bermite

presented by

John Porcello/CH2M HILL

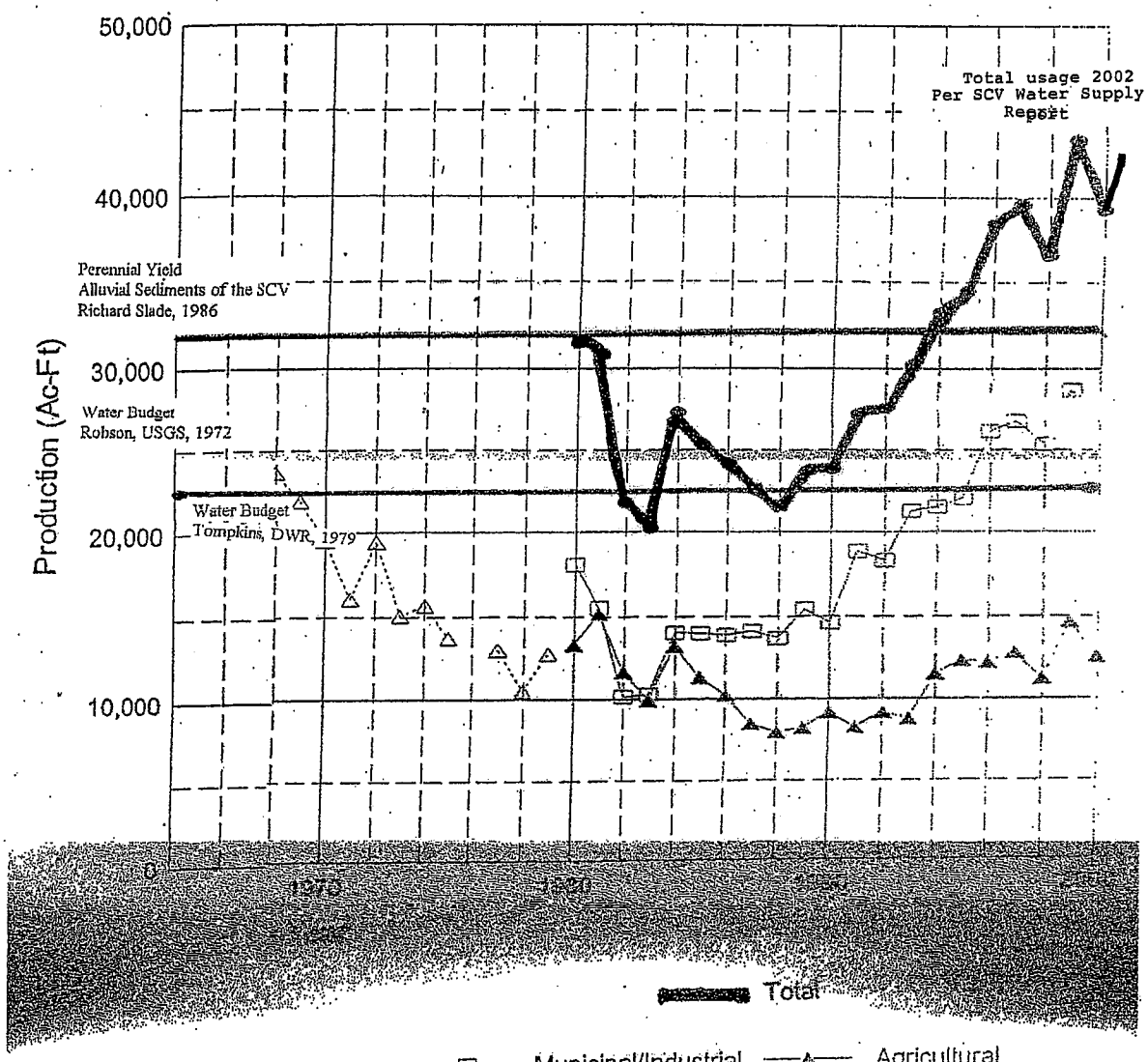
December 10, 2003



Objectives and Methods

- Evaluate pumping strategies for impacted wells that meet specific goals
  - Restoring lost water supplies
    - Saugus: 4,000 AF/yr
    - Alluvium: 700-1,000 AF/yr
  - Protecting downgradient wells
- Develop and apply groundwater flow model

Groundwater Production
Santa Clarita Valley Alluvial Aquifer



FROM: Figure II-2

Santa Clarita Valley Water [illegible]
2000

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VOLUME I — REPORT TEXT

HYDROGEOLOGIC INVESTIGATION
PERENNIAL YIELD
and
ARTIFICIAL RECHARGE POTENTIAL
of the
ALLUVIAL SEDIMENTS
in the
SANTA CLARITA RIVER VALLEY
of
LOS ANGELES COUNTY, CALIFORNIA

FOR
UPPER SANTA CLARA WATER COMMITTEE
MEMBERS: LOS ANGELES COUNTY WATERWORKS
DISTRICT NO. 36 — VAL VERDE
NEWHALL COUNTY WATER DISTRICT
SANTA CLARITA WATER COMPANY
VALENCIA WATER COMPANY

AFFILIATE: CASTAIC LAKE WATER AGENCY

DECEMBER 1986

RICHARD C. SLADE
CONSULTING GROUNDWATER GEOLOGIST

a larger degree in the shallow wells of the alluvium compared to wells in the underlying Saugus Formation.

The Saugus Formation ranges in thickness between at least 1500 feet and at least 5000 feet from the northerly to the southerly sides of the San Gabriel fault, respectively. Little is known of the hydrogeology and water-yielding characteristics of the Saugus Formation.

2. Groundwater flows from east to west across the alluvium in the river valley; April 1945 represents the all-time water level high, while November 1965 represents the all-time water level low in much of the alluvium. In general, 1985 water levels are 10 to 30 feet lower than the 1945 levels. Water levels west of Castaic Junction have remained high throughout the period of record.

3. Groundwater in storage in the alluvium has ranged from a high in April 1945 of 201,000 ac-ft, to a low of 107,000 ac-ft in November 1965; at present (Fall 1985) groundwater in storage is approximately 176,400 ac-ft. Because the theoretical maximum storage capacity in the alluvium is 239,900 ac-ft, there is a theoretically available storage capacity of 63,500 ac-ft between the 1985 storage and the theoretically maximum possible storage.

4. Though historic groundwater extraction data are somewhat contradictory, groundwater production for 1985 was: 24,103 ac-ft from the alluvium, using 59 active wells; and 4892 ac-ft from the underlying Saugus Formation, using 8 active wells. The numbers, locations, and annual production from wells actively used by private homeowners, industries and/or commercial establishments are not known; it is probable that total annual production from these sources does not presently exceed a few hundred ac-ft/yr.

5. For our base period of study of 1957-58 through 1984-85, we calculate a practical perennial yield for the alluvium of 31,600 to 32,600 ac-ft per year.

6. Alluvial groundwater quality ranges from a natural calcium-bicarbonate character on the east near Lang to a degraded sodium-sulfate character west of Castaic Junction. Generally, TDS increases in the

their annual extractions are not metered. Because the cumulative total production by these private pumpers is not considered to be large, it has not been included in our perennial yield assessment.

Prior to 1954, alluvial groundwater production accounted for almost 100 percent of the total water production in the study area. However, in 1954, this percentage decreased to approximately 95 percent because in that year Newhall County Water District constructed the first of six wells which tap the Saugus Formation for domestic use. By 1985, production from the Saugus Formation approached 16 percent of total groundwater extractions (refer also to Table 2).

In recent years, there have been several shifts in the supply/demand usage of water in the region. Groundwater extractions from the Saugus Formation have gradually increased to about 15 percent of the total local production, while total extractions (alluvium plus Saugus Formation) have declined slightly. Water usage has shifted toward a greater proportion for urban uses, with a reduction for agricultural uses, as the region has become urbanized. In the future, it is projected that local alluvium production will remain relatively constant with more water going to urban uses as the agriculture is phased out, and there will be greater use of groundwater from the Saugus Formation.

Urbanization has had a rather startling impact on the availability of areas for recharge, however. All recharge to the aquifer system does not occur in the low-flow channels of the river and its tributaries, but infiltrates over much of the alluviated areas which are not within the flood channels of the Santa Clara River system. Paving of these areas has, and will continue to reduce the net effective area for natural recharge to the underlying groundwater system.

calculated values of average annual pumpage and average annual change in storage.

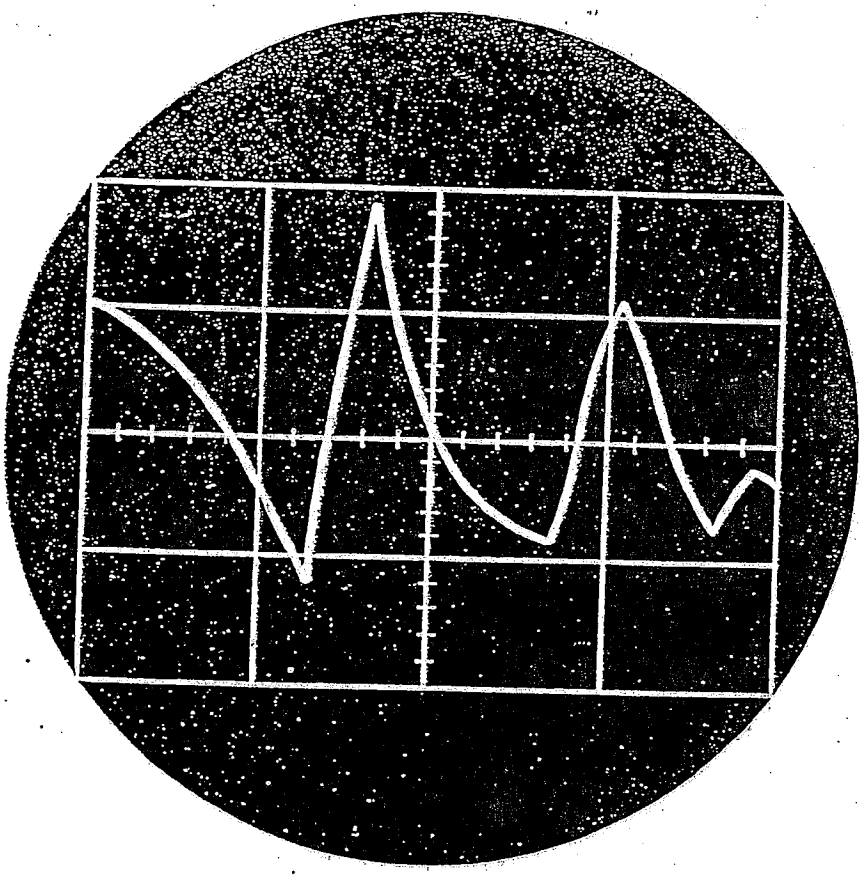
To determine the average annual groundwater production from the alluvial sediments in the Valley, files at the major water purveyors concerning present and historic production were obtained. These data vary widely in their apparent level of accuracy. For example, some of the data do not date back to 1957-58, other data are based on electrical consumption at the pump and not on actual metered gallonage, while other data are only estimates based on the number of persons using the water. Regardless, during the 28-year base period 1957-58 to 1984-85, we estimate the average annual groundwater production from the alluvial sediments in the Santa Clarita Valley to have been approximately in the range of 31,000 to 32,000 acre-feet per year.

In addition, at the beginning of the base period, the quantity of groundwater stored in the alluvial sediments was calculated to be approximately 159,688 acre-feet. By 1985, the quantity of groundwater in storage in the alluvium had been increased to 176,409 acre-feet (see Table 8). The increase in the quantity of water in storage in the alluvium is thus 16,721 acre-feet. This increase is the total quantity of groundwater added to storage during the 28-year Base Period as a result of excess precipitation. Hence, the average annual net change in groundwater in storage was determined by dividing the total quantity of water added to storage by the length of the Base Period, or +597 acre-feet per year.

The perennial yield is the quantity of groundwater what can be pumped annually without any change in groundwater levels or net change in groundwater in storage over the Base Period. This may be computed by determining the average annual pumping during the Base Period (31,000 to 32,000 acre-feet), and adding or subtracting from this value, that amount

WATER-RESOURCES INVESTIGATION USING ANALOG MODEL TECHNIQUES

IN THE SAUGUS-NEWHALL AREA LOS ANGELES COUNTY, CALIFORNIA



UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

OPEN-FILE REPORT
Menlo Park, California
1972

PREPARED IN COOPERATION WITH THE NEWHALL COUNTY WATER DISTRICT

Because of the lack of data only four short-term deep-well hydrographs were available to use in the non-steady-state verification of the Saugus aquifer (pl. 7). The measurements indicate that in the area south of the San Gabriel fault and east of Castaic Junction, the potentiometric surface produced by the model is too flat (pl. 7). This was also indicated by the steady-state run. The model-based heads shown on plate 7 are correct south of Castaic Junction but are about 70 feet low at Newhall. This is shown by the discrepancy between the two hydrographs for well 4N/16W-35L1 (pl. 7). Because there are no water-level measurements for the area north of the San Gabriel fault and Castaic Junction, it is not known whether or not the potentiometric surface shown for that area is correct.

In view of the lack of definitive data for the Saugus aquifer, it is felt that this layer of the model is adequately verified for present needs. The hydrologic parameters used to model the Saugus aquifer are initial estimates. Consequently, before more detailed information about the Saugus aquifer can be obtained from the model, additional studies of the hydrologic characteristics of the aquifer should be made. With present data only general information can be deduced regarding the ground-water flow network in the Saugus aquifer.

A comparison of the assumed steady-state potentiometric surface (pl. 6) with the 1963 potentiometric surface (pl. 7) shows that in the model the Saugus aquifer has undergone a decline in head over most of the area of the aquifer. This decline is due to pumping from the Saugus aquifer and to water-level declines in the overlying alluvial aquifer. The model-generated hydrographs on plate 7 indicate that the declines in the Saugus aquifer have been similar to those that occurred at adjacent points in the alluvial aquifer. This suggests that future pumping from or artificial recharge to one of the aquifers will have an effect on the head in the other aquifer. Head changes in the Saugus aquifer, however, are generally less than the corresponding changes in the alluvial aquifer. This is due to the low vertical component of permeability between the two aquifers and lesser quantities of pumping from the Saugus aquifer than from the alluvial aquifer.

WATER BUDGET

Table 5 shows the water budgets for the steady-state and the non-steady-state model. All quantities of inflow and outflow used in the model are shown. Under steady-state conditions the quantity of inflow to the model must equal the quantity of outflow. As shown, the total inflow and total outflow are both equal to about 25,000 acre-feet per year. Surface-water recharge and underflow are the major sources of inflow, and ground-water discharge is the principal outflow.

In the water budget for the non-steady-state condition the figures shown are the total quantities of inflow or outflow which occurred in each area during the 23-year study period. When the ground-water storage depletion is added to the inflow data, the total inflow must equal the total outflow within the limits of accuracy of the model. As shown, these totals agree within 5.2 percent or about 44,000 acre-feet. Surface-water recharge and underflow are still the main sources of inflow, but ground-water pumpage is by far the greatest source of outflow from the basin.

MODEL READOUTS

The major water purveyors in the Saugus-Newhall area are presently considering the effects of various water-resources management practices in order to arrive at management techniques that will make the best use of the existing and future water resources of the areas. The analog model was used to supply information about the response of the aquifers to each of the following conditions:

1. What are the effects of loss of natural floodwater recharge to the aquifers?

2. What are the effects on the aquifers of artificial recharge of imported water?

3. What are the effects on the aquifers of increased pumpage to meet future water requirements?

Effects of Loss of Floodflow

Because water levels in the alluvial aquifer respond to variations in surface-water recharge, information about the effects of an extended drought during which no floodflow recharge occurs is of value.

To simulate an extended drought, the model was run for the 1945-67 period under the following conditions:

1. The surface-water recharge to the model did not exceed steady-state surface-water recharge.

2. Loss of floodflow recharge to the aquifers will cause large water-level declines which will decrease the quantity of ground-water discharge in the Santa Clara River below Castaic Junction. This ground-water discharge cannot be decreased by more than the original steady-state ground-water discharge. To simulate this limit in the model, the induced recharge in the area was not allowed to exceed the value of the steady-state ground-water discharge.

3. The aquifers were assumed to be in steady-state conditions at the beginning of the drought.

4. All other hydrologic parameters were maintained at the values which were normally used in the non-steady-state model during the 1945-67 study period.

Under these conditions the model produced the hydrographs shown in figure 9. Because the transmissibility in the model does not vary as a function of head, these hydrographs represent the theoretical response of the basin to the conditions set forth above." Under actual field conditions the decrease in transmissibility with decline in head would cause the alluvial aquifer to be dewatered sooner than indicated by the hydrographs in figure 9. The hydrographs do indicate, however, that without the effects of floodflow recharge most of the alluvial aquifer could not support the modeled rate of ground-water pumpage for more than 14 to 18 years after steady-state conditions. The aquifer would support this pumpage for an even shorter perio of time if the basin were not at steady-state condition at the beginning of the drought. The benefit the basin receives from floodflow recharge can be seen by comparing the hydrographs produced by the model for the alluvial aquifer under 1945-67 historic conditions with the hydrographs for the no-floodflow condition.

The loss of floodflow recharge in the alluvial aquifer causes head declines in the Saugus aquifer. As shown by the hydrographs in figure 10, after 23 years the no-floodflow condition produces declines in the Saugus aquifer about 100 feet below those of the normal condition. These declines do not produce complete dewatering of the aquifer because of its large saturated thickness.

Effects of Artificial Recharge

The Upper Santa Clara Valley Water Agency has contracted with the State of California for delivery of northern California water to meet future water requirements in the study area. The quantities of imported water tentatively will range from 1,600 acre-feet per year in 1971 to 41,500 acre-feet per year in 1990 but could be increased somewhat if required (table 6). One management procedure under consideration proposes that all water imported between 1971 and 1980 be artificially recharged to defer the cost of treatment facilities. The channel of the Santa Clara River between Solemint and Saugus was chosen as a possible site for artificial recharge on the basis of the hydrology of this area and the proposed alinement of a 36-inch diameter pipeline. The analog model was used as an aid in determining the effects of the recharge on the aquifers.

A second model run was made to show the effects on the basin of the conditions imposed in the previous run without artificial recharge in the Santa Clara River. The hydrographs produced under these conditions are shown on plate 9.

The model indicated that the alluvial aquifer would be dewatered in the upper and lower Soledad Canyon areas prior to 1980. This is primarily due to the heavy pumping in the lower Soledad Canyon area between 1970 and 1980 which is not compensated for by artificial recharge as it was in the previous run. After 1980 the hydrographs for this run and the previous run are almost parallel with the previous run water levels between 10 and 50 feet higher than those for this run.

In the Saugus aquifer the hydrographs for this run are between 10 and 30 feet lower than the corresponding hydrographs for the previous run. In general the removal of the artificial recharge from the alluvial aquifer does not produce a significant change in water levels in the Saugus aquifer. The same management problems are produced by this set of conditions as were produced in the previous run, the major differences being that the problems occur as much as 10 years sooner. These model-generated readouts are subject to the same limitations as are the readouts from the previous run (page 54).

CONCLUSIONS

On the basis of the study of the hydrology of the area and the readouts from the analog model the following conclusions have been reached:

1. The alluvial aquifer has been the source of most of the ground water pumped in the area. The quality of water in this aquifer is readily affected by small quantities of inflow of either better or poorer quality water because of the relatively small quantity of ground water in storage in the aquifer. The water in this aquifer can in turn affect the chemical quality of the water in the Saugus aquifer. Urbanization will place additional stress on both aquifers by increasing the quantity of poor-quality sewage effluent and good-quality imported water available for recharge into the alluvial aquifer. In addition, heavy pumping from the Saugus aquifer to meet future water demands could drastically reduce the ground-water discharge from the basin. This could result in the buildup of salts within the basin because of the lost flushing action of the ground-water discharge.

These conditions substantiate the belief that a proper water-quality management program must be established within the basin. This should include the initiation and operation of a systematic periodic water-quality sampling program. These data can then be used to evaluate the effects on the basin of the above water-quality considerations.

2. The ability of the alluvial aquifer to accept artificial recharge is dependent on the storage space available within the aquifer. In the Saugus-Newhall area the space available for recharge in the alluvial aquifer varies widely depending on the quantity of surface-water recharge that occurs each year. To determine how much artificial recharge could take place each year, a water-level measuring program should be initiated in the lower Soledad Canyon area. Using these measurements and other data, estimates of the space available for the storage of water in the aquifer in the coming year could be made. This would facilitate obtaining the proper quantities of imported water for artificial recharge each year.

3. The model indicates that under historic pumping conditions the full entitlement of imported water to the year 1980 probably could not be artificially recharged in the 3.5-mile reach of the Santa Clara River below Solemint. This is due to the lack of storage in the alluvial aquifer. When an estimated maximum pumping rate to 1990 is distributed so the pumping near the artificial recharge reach is greatly increased, it seems possible to artificially recharge all the imported water to be delivered prior to 1980.

4. On the basis of readouts from the analog model it seems that the maximum quantities of pumping that might be demanded of the alluvial aquifer to 1990 cannot be supplied by that aquifer. To meet the maximum water requirements of the area, either more water must be imported than was used in the model run or pumping from the Saugus aquifer must be increased. However, the model indicates that increased pumping from the Saugus aquifer causes large head declines in that aquifer and induces declines in the alluvial aquifer. In the model declines were large enough to greatly diminish the ground-water discharge from the alluvial aquifer and to eliminate all natural outflow from the Saugus aquifer. If this condition were allowed to continue unchecked, water-quality problems could develop in the basin because of the imbalance of salts being carried in and out of the basin.

As a result, pumping in the Saugus aquifer cannot be increased indiscriminately without producing detrimental effects in both aquifers. A proper choice of pumping patterns in the Saugus and alluvial aquifers could minimize the adverse effects of increased pumpage. However, further interrogation of the model is required to determine whether or not the Saugus aquifer can support the proposed rate of pumping without dewatering the alluvial aquifer.

5. The Saugus aquifer is a potentially large source of ground water with an estimated maximum of 6 million acre-feet of recoverable water in storage. Further study of this aquifer is required to delineate the areas of poor water quality and to determine more accurately the transmissibility and storage coefficients of the aquifer. Future studies of the Saugus aquifer should give prime consideration to the area north of Castaic Junction and the San Gabriel fault because few hydrologic data are available for this area. With greater knowledge of this aquifer the ground-water basin model could be updated to give more precise information about the response of this aquifer to various ground-water management practices and to more accurately determine the potential for future utilization of the aquifer.

STUDY CODE NO. 1610-9-J-1

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Southern District
Water Projects Branch

PRELIMINARY EVALUATION OF STATE WATER PROJECT GROUND WATER STORAGE PROGRAM: SANTA CLARA RIVER VALLEY BASINS

-by-

Evelyn Tompkins
Graduate Student Assistant

This Technical Information Record (TIR) was prepared to document information developed during a reconnaissance-level investigation of the Santa Clara River Valley Ground Water Basins to determine if inclusion of these basins in the State Water Project Future Supply Program is feasible. Therefore, it should be considered as preliminary and subject to revision. This is primarily an internal office document with distribution limited to the cooperating agencies only.

February 1979

basins. Ground water is classed mainly as desirable for domestic and irrigation uses. TDS concentrations range from 260 mg/l to 500 mg/l.

Ground Water Use

The volume of ground water in storage is reduced by: pumped extractions, consumptive use of water by phreatophytes, and the outflow of rising water to Eastern Basin.

Currently, water demand is met entirely by pumped extractions; however, by 1980 imported water will be needed to meet the projected demands of an increasing population. Annual extractions were estimated to be 14.8 cubic hectometres (12,000 acre-feet) per year.

Storage Capacity

Ground water in storage between high and low water levels was estimated to be 19.7 cubic hectometres (16,000 acre-feet). Specific yield is approximately 20 percent.

The ground water level is often at or near the surface during storm flows. Therefore, the river channel alluvium has little capacity for further recharge immediately after heavy rains.

EASTERN BASIN

Description

Eastern Basin is downstream from Acton Basin and lies almost entirely within Los Angeles County. The basin is separated from Acton Basin by an impermeable bedrock constriction. Eastern Basin is composed of water-bearing deposits occurring along the Santa Clara River between the towns of Lang and Blue Cut and in the numerous canyons tributary to this area. The water-bearing deposits cover an approximate surface area of 11 655 hectares (29,000 acres).

The major aquifers in the basin are the Saugus Formation and the river channel alluvium. Only 1 067 metres (3,500 feet) of the Saugus Formation contribute to ground water development. This formation has been faulted, folded, and eroded. The river channel alluvium ranges from a few metres in thickness to about 61 metres (200 feet) thick near the town of Saugus.

Newhall-Saugus is the largest population center for the basin as well as for the whole Santa Clara River Valley.

Ground Water Occurrence

Ground water in the alluvium is unconfined, while ground water in the Saugus Formation is confined. Ground water moves westward. The San Gabriel and Holser Faults cross the water-bearing sediments and cause a water level differential of approximately 3 to 6 metres (10 to 20 feet).

No measurable subsurface inflow occurs from Acton Basin; inflow from Acton Basin occurs as rising water only. Outflow occurs either as subsurface outflow or as rising water. Rising water outflow was estimated to average 13 cubic hectometres (10,600 acre-feet) per year. The subsurface outflow was estimated to be 0.3 cubic hectometre (240 acre-feet) per year.

Percolation of precipitation, streamflow and the return flows of irrigation water recharge the basin. To a minor extent, inflow is derived from the semi-permeable formations which flank the main ground water basin. Other sources of recharge water for the basin are sewage and industrial waste effluents.

Quality

Widely ranging ground water conditions in this basin may cause localized variations from the favorable water quality of the basin. Ground water quality for domestic use ranges from suitable in most areas of the basin to unsuitable in the western portion. Ground water is generally suitable for irrigation of all but the most sensitive crops.

TDS ranges from 600 mg/l to 1 800 mg/l. The concentration of mineral constituents in the ground water increases westward along the basin. Concentrations of chlorides and nitrates are generally lower than 100 mg/l and 45 mg/l respectively.

Ground Water Use

Wells tapping the alluvium are very productive with yields up to 7 570.8 litres (2,000 gallons) per minute. Well extractions from both the alluvium and the Saugus Formation average 28.7 cubic hectometres (23,300 acre-feet) per year. Near Blue Cut, the Newhall Land and Farming Company pumps and exports from 4.9 to 8 cubic hectometres (4,000 to 6,500 acre-feet) per year to Piru Basin for agricultural purposes.

Storage Capacity

No data is available for the total storage capacity of the basin or the current volume in storage; however, data does indicate the basin had an available capacity of 24.7 cubic hectometres (20,000 acre-feet). The safe yield was estimated at 28.5 cubic hectometres (23,100 acre-feet) per year.

PIRU BASIN

Description

Piru Basin is the easternmost basin lying entirely within Ventura County between the towns of Blue Cut and Fillmore. The ground water basin covers a surface area of about 2 843 hectares (7,025 acres).

Piru Basin is comprised of two principal aquifers: alluvium beneath the flood-plains and permeable freshwater-bearing zones in the San Pedro Formation. Over most of the basin the thickness of the alluvial aquifer ranges from 26 to 70 metres (85 to 200 feet). The alluvium consists of fluvial sand and gravel of Recent and

Conjunctive Use of the Saugus Aquifer

Castaic Lake Water Agency

January 1990
K/J/C 884605.00

Kennedy/Jenks/Chilton

CLWA. Consequently, the water is currently utilized for agricultural lease operations within the Devil's Den Water District.

The SWP release pattern from its storage reservoirs is based on maintaining a supply of water to satisfy demand in a drought. Consequently, SWP entitlements are subject to cutbacks at times. To assess potential future reductions, Reiter created a model of the SWP supply available for release using a Monte-Carlo iteration, a random analysis, to project precipitation. Historical hydrologic data are incorporated into the analysis. Because the State plans to develop additional sources of water in the future, the Reiter model includes scenarios for each projected yield increase. The expected increases are 60,000 acre-feet/year in 1991, 300,000 acre-feet/year in 1995 and 300,000 acre-feet/year in 2000. Based on the method of determining reductions discussed in Chapter 3, the potential reductions to CLWA's deliveries (assuming full entitlement amounts were requested), and thus the projected water available for CLWA's use, are calculated for each scenario.

The sources of groundwater available to users within CLWA's boundaries in the future will continue to be the alluvial and Saugus aquifers. From the alluvial aquifer the safe yield is anticipated to be 32,500 acre-feet/year, a portion of which will be used for agricultural purposes and, therefore, is not available for M&I use. The Saugus aquifer production is anticipated to be 11,000 to 22,000 acre-feet/year of which the assumption is made that 10,000 acre-feet/year is allocated for use by the water purveyors and 2,000 acre-feet/year is utilized by other water users.

In addition to groundwater and imported water, reclaimed water will be available for CLWA's use. A reclaimed water system with a maximum capacity of 8,600 acre-feet/year is planned for construction in a phased program. It is anticipated that reclamation will begin in 1992 and will increase until reaching the maximum in 1999. The reclaimed water will be used for landscape irrigation, and, therefore, will most likely be utilized from May through September.

From Table 4-1 and Figure 4-1, it can be seen that, based on Reiter's analysis, the supply does not meet the demand every year. The remaining 1,000 to 10,000 acre-feet/year of unused Saugus water is available for development by CLWA for use in the years of shortfall. Development of additional supplies in the Saugus aquifer will be considered in the following chapters.

Final Report

Reclaimed Water System Master Plan

Castaic Lake Water Agency

September 1993
K/J 894012.00

Kennedy/Jenks Consultants

CHAPTER 3

EXISTING AND PROJECTED WATER SUPPLY AND DEMAND

In order to evaluate the need for reclaimed water, water supplies and demands were projected into the future. This chapter describes the existing and future water supplies, demands, and facilities within the Castaic Lake Water Agency (CLWA) service area.

EXISTING WATER SUPPLY, DEMAND AND FACILITIES

Water Supply

Water demands in the Santa Clarita Valley are currently met by two sources: the State Water Project (SWP) and local groundwater supplies. The estimated average total supply available for municipal and industrial (M&I) and agricultural uses is 98,000 to 109,000 acre-feet per year, depending on the yield available from the local groundwater aquifers. CLWA purchases State water and wholesales it to four domestic water purveyors, these being the Los Angeles County Waterworks District No. 36, the Newhall County Water District, the Santa Clarita Water Company and the Valencia Water Company. The approximate boundaries of the water purveyors are shown on Figure 3-1. CLWA has SWP entitlements of 41,500 acre-feet per year for M&I uses. In addition, SWP agricultural entitlements of 12,700 acre-feet per year have been transferred to CLWA from the Devil's Den Water District in Kern and Kings Counties. To date, the Devil's Den entitlements have not been used within the CLWA service area.

In addition to imported water, local groundwater supplies have been developed by domestic water purveyors and by agricultural water users. Two fresh-water bearing aquifers, the alluvial and Saugus aquifers, underlie CLWA's boundaries and form the Eastern Groundwater Basin of the Santa Clara River Valley Basin.

The alluvial aquifer lies above the Saugus aquifer and is comprised of the alluvial sediments along the river and its major tributaries. The maximum thickness of the alluvium is about 200 feet. A large number of wells penetrate this upper aquifer, and, historically, most water extracted from the groundwater basin has been from the alluvial aquifer. The perennial yield of the aquifer is considered to be 32,500 acre-feet, a portion of which is used for agricultural purposes and is increasingly available for M&I uses as agricultural land is developed for urban use.

Much less information is known about the Saugus aquifer. Historically, few wells penetrated the Saugus aquifer. However, as water demands in the valley have increased, more wells have been drilled into the aquifer. The anticipated annual

VALENCIA WATER COMPANY

WATER MANAGEMENT PROGRAM

DECEMBER, 1995

TABLE III-1

WATER SOURCES FOR SANTA CLARITA VALLEY

SOURCE Acre-Feet per Year	Minimum	Maximum
Santa Clara River Alluvium	31,600	32,600
Saugus Formation Normal Pumping	11,000	22,000
Saugus Short Term Overdraft	20,300	None
State Project Water		
CLWA Table A Entitlement[1]	43,360	54,200
TOTAL CURRENT RESOURCES	106,260	108,800
Reclaimed Water Potential	10,000	10,000
TOTAL WATER RESOURCES AVAILABLE	116,260	118,800
NON DOMESTIC & OTHER		
Agricultural uses	12,000	5,000[3]
Pitchess Honor Rancho	2,000[2]	3,000[3]
NET WATER RESOURCES FOR M & I	102,260	110,800

[1] Entitlements are subject to drought related cutbacks. Maximum cutback on Table A is estimated to be 20%. CLWA plans a conjunctive use program to mitigate the effects of State Project Water cutbacks which are shown in the column designated as minimum. This requires Saugus Short Term Overdraft.

[2] Estimated current use.

[3] Estimated future use.

Castaic Lake Water Agency

Draft

Integrated Water Resources Plan
Water Demand and Supply Evaluation

February 1998

MONTGOMERY WATSON

BOOKMAN-EDMONSTON
ENGINEERING, INC.

Pumping from the Saugus Aquifer has varied from about 3,900 acre-ft/yr up to 14,800 acre-ft/yr. In 1996, Saugus pumping was about 8,200 acre-ft/yr. Installed pumping capacity can produce 15,000 to 16,000 acre-ft/yr from the Saugus Aquifer.

In 1991, groundwater was pumped into the CLWA distribution system because of SWP supply deficiencies and the cost of water was less than purchasing State Drought Bank water. By moving groundwater from areas of adequate supply into areas with limited groundwater, the local water community illustrated a major element of a conjunctive use program.

Estimated Dry Period Groundwater Production Capability

Slade (1984) reported that the perennial yield of the Alluvial Aquifer is about 32,000 acre-ft/yr. This yield is the historical annual production adjusted for a minor change in storage. Because of he limited storage capacity in the Alluvium, this groundwater source may be limited in dry periods. Wells in the Alluvium near the eastern reaches of the Santa Clara River are known to have groundwater levels which decline during consecutive dry years by as much as 100 feet, reducing pumping capacity. A series of winter storms recharge the aquifer and result in water level recovery.

The data reviewed for the Pardee area (located near Bouquet Canyon Road and the Santa Clara River) shows that in 1990 and 1991, groundwater levels did not decline as much as those in the easterly areas. In 1991, the Valencia Water Company increased its pumping to offset limited SWP water supplies. Valencia Water Company reported delivery of about 5,000 acre-ft/yr into the CLWA distribution system. Total pumping from the Alluvium by Valencia Water Company in 1991 was about 9,900 acre-ft/yr, as reported to the State Water Resources Control Board.

Based on historical data, the Alluvial Aquifer east of Castaic Junction can support production of at least 20,400 acre-ft/yr as shown in Table 3-2.

Table 3-2
1991 Alluvial Groundwater Production
East of Castaic Junction

Water Purveyor	Annual Production (acre-ft/yr)
Newhall CWD	1,900
Santa Clarita WC	5,900
Valencia WC [1]	10,400
Wayside Honor Rancho	2,200
Total	20,400

1. Includes 500 acre-ft pumped in 1991 by Newhall Land & Farming Co. east of Castaic Junction.

PROPOSED FINAL

Supplemental Water Project Environmental Impact Report

SCH # 98041127

FEBRUARY 1999

3.2 SURFACE WATER, WATER USE, GROUNDWATER

Surface Water. The primary drainage course in the CLWA area is the Santa Clara River. Principal tributaries to the Santa Clara River include Mint Canyon, Bouquet Canyon, San Francisquito Canyon, Castaic Creek Canyon, Oak Spring Canyon, Sand Canyon, and Potrero Canyon. Water flow in the stream canyons is ephemeral, and diminishes rapidly after most rainfall events. Surface water resources include the Santa Clara River, Bouquet Reservoir, and Castaic Lake. Water (both imported and naturally occurring) is diverted from Pyramid Lake located a few miles to the north, through hydroelectric power generation facilities, into Castaic Lake. Water quality in the Santa Clara River is generally poor due to high concentrations of total dissolved solids, however, water in Pyramid Lake, Castaic Lake, and Bouquet Reservoir is suitable for municipal use. Primary flood hazard areas occur in and along natural drainage channels, such as the Santa Clara River and its tributaries, and in areas where sheetflow may occur during high intensity rainfall (CLWA 1988, 1998; Slade 1986).

Water Supplies. The existing local water supply in the CLWA service area is groundwater extracted from the alluvial aquifer and from the underlying Saugus Formation aquifer. Historically, groundwater has been the primary source of water in the Santa Clarita Valley. Since 1980, local groundwater supplies have been supplemented with imported water from the SWP. From 1984 to 1996, historic SWP entitlement has averaged 24,568 acre-feet per year (AFY) (including deliveries to Devil's Den in Kern County and Kings County), which is 45 percent of the existing 54,200 AFY entitlement.

Groundwater. Large quantities of water are pumped from relatively shallow wells in the highly permeable alluvial aquifer. Although this alluvial aquifer is the smaller of the two-aquifer systems, as measured by storage capacity, most water wells within CLWA are drilled into the alluvial aquifer. Slade (1986) estimated the perennial yield of the alluvial aquifer to be from 31,600 AFY to 32,600 AFY. The maximum historic quantity of water stored in the alluvium has been estimated to be approximately 201,000 acre-feet, following substantial rainfall in 1945 (CLWA 1998). Recharge amounts are highly variable, depending on annual precipitation with documented annual water level recoveries of 70 feet or more. Dry years have resulted in water level drops of approximately 100 feet, particularly in Soledad Canyon. However, groundwater levels have remained near the ground surface in the vicinity of Castaic Junction, due to the east-

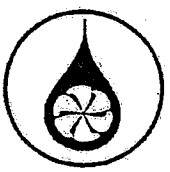
SANTA CLARITA VALLEY WATER REPORT
1999

Castaic Lake Water Agency

Los Angeles County Waterworks District #36

Newhall County Water District

Santa Clarita Water Company



Valencia Water Company

Prepared by: The Upper Santa Clara Valley Water Committee
February 2000

Executive Summary

Santa Clarita Valley Water Report 1998

This annual report provides factual information about the current water resources within the Santa Clarita Valley. The Upper Santa Clara Valley Water Committee, (Committee) whose members are responsible for ensuring that Valley residents have a safe, adequate and reliable water supply, prepared this report.

The Santa Clarita Valley is served by four retail water purveyors: Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Company and Valencia Water Company. The Castaic Lake Water Agency (CLWA) provides imported water from California's State Water Project to the four purveyors for distribution. These five entities meet regularly as the Upper Santa Clara Valley Water Committee to coordinate the beneficial use of water in the Valley.

This report provides information about the area's geology, the local groundwater basin, imported water supplies, water quality, precipitation, recycled water, existing and projected water demand and an overall outlook of water supply and demand.

In 1998, the Committee reports a total water supply of approximately 107,000 acre-feet per year and an existing water demand of 48,858 acre-feet. The Santa Clarita Valley currently has a surplus of supply of about 58,142 acre-feet over existing demand. The Committee projects this condition to continue for the foreseeable future given the overall availability of local and imported water supplies, the levels of precipitation both locally and regionally, the favorable operating condition of the groundwater basin and the existing facilities in place to deliver water throughout the valley.

Water Supplies include groundwater from the shallow Alluvial Aquifer and the underlying deeper Saugus Formation and imported water from the State Water Project. The following summarizes the water resources of the Valley in 1998:

Alluvial Aquifer

- The annual perennial yield for the Alluvial Aquifer is 32,500 acre-feet per year. This quantity of water represents an amount of water that can be pumped annually from the aquifer on a long-term basis and during dry year conditions without causing an undesirable result.

Section I

Introduction

Section I.A Background

For most residents of the Santa Clarita Valley (Valley), domestic water service is provided by four retail water purveyors. They are Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Company, and Valencia Water Company. The Castaic Lake Water Agency (CLWA) is a wholesaler that obtains water from California's State Water Project. CLWA draws water from Castaic Lake where it is filtered and disinfected at two treatment plants before distribution to the purveyors. These five entities meet regularly as the Upper Santa Clara Valley Water Committee (Committee) to coordinate the beneficial use of water in the Valley. Their respective service areas are shown in **Figure I-1**.

The Committee was officially formed in 1967 when its members requested the United States Geological Survey (USGS) to prepare a joint water resources study of the Santa Clara River Watershed. The purpose of the Committee was to consult with the USGS regarding the study, to assist with the accumulation of data, and to continue working toward coordinating water management programs for the area. The study was completed in 1972 by S. G. Robson of the USGS and provides the initial baseline information of the valley's groundwater resources.

Over the years, the Committee has continued to review and document the availability of water resources in the region. Past studies have assessed the condition of the local groundwater aquifers, their hydro-geologic character, aquifer storage capacity, perennial yield and recharge rate and the potential for conjunctive use of both groundwater and imported water resources.

Other efforts have included developing drought contingency plans, evaluating the impact of landfills on the groundwater basin, coordinating emergency response

Section II

Water Supplies

Historically, local groundwater extracted from the Alluvial and Saugus Aquifers has been the primary source of water in the Santa Clarita Valley. However, local groundwater supplies since 1980 have been supplemented with imported water from the State Water Project. This Section describes the geologic setting of the Santa Clarita Valley, the local and imported water supplies, water quality, precipitation records and recycled water programs.

Section II.A Eastern Groundwater Basin

Figure II-1 shows the approximate boundaries of the Eastern Groundwater Basin, which is the largest and most developed groundwater body of the Upper Santa Clara River HA. It is an alluvial-valley aquifer-stream system. The basin consists of Holocene Alluvium, Pleistocene terrace deposits, and the Plio-Pleistocene Saugus Formation.

Information on the hydrologic conditions of the groundwater basin comes from three previous studies. Robson (1972) evaluated the availability, quantity, and potential for development of the groundwater resources of the Saugus-Newhall area. Slade (1986) conducted an evaluation of the hydrologic conditions of the Alluvial Aquifer underlying the Santa Clarita Valley and its potential for artificial recharge. In 1988, Slade conducted a hydrologic evaluation of the Saugus Formation, its quantity, and potential for development.

Section II.A.1.a. Alluvial Aquifer - General

The Holocene Alluvium exists extensively on the valley floor and becomes restricted at the narrow channels of the river's tributaries in the upper reaches. The Alluvium is deepest along the center of the present river channel, with a

values where the alluvium is thickest in the center of the valley and generally west of Bouquet Canyon.

The amount of groundwater in storage in the Alluvium can vary considerably because of the effects of recharge and discharge from the aquifer. Based on an Alluvial area of 16,410 acres, variable thickness, and specific yield of 9 to 16 percent, it has been estimated that the theoretical maximum amount of groundwater that could be held and retrieved in usable storage is 240,000 acre-feet. Based on historical fluctuations in groundwater levels, calculated volumes of groundwater in storage in the Alluvium have ranged from a high of 201,000 acre-feet in April 1945 to a low of 107,000 acre-feet in November 1965.

Three of the four water companies pump local groundwater in addition to purchasing imported water from CLWA. The Los Angeles County Waterworks District 36 presently has no operating groundwater extraction facilities. Also, the County of Los Angeles and the Newhall Land and Farming Company pump from the Alluvial Aquifer to service their own lands.

In 1986, the Committee hired Richard C. Slade and Associates to study the Alluvial Aquifer and determine, among other things, the aquifer's hydrogeologic condition, perennial yield, storage capacity and potential for artificial recharge. Based on historical pumpage and hydrologic conditions over a 28 year base period (1957-58 through 1984-85), Slade estimated that the annual perennial yield for the Alluvial Aquifer is 31,600 acre-ft to 32,600 acre-ft per year (one acre-ft is +/- 325,900 gallons). Based on the results of that hydrogeologic report and the operating experience of its members, the Committee has adopted a perennial yield of 32,500 acre-ft per year. This quantity represents the amount of water that can be pumped annually from the aquifer on a long-term basis, including fluctuations above and below the perennial yield amount during wet and dry year conditions, without causing an undesirable result. Undesirable results could include long-term groundwater level decline (and associated decline in groundwater storage), degradation of water quality in the aquifer, or land

SANTA CLARITA VALLEY WATER REPORT
2002

PREPARED BY:

Castaic Lake Water Agency

Los Angeles County Waterworks District #36

Newhall County Water District

Valencia Water Company

April 2003

Table II-7
Total Water Supplies
(Acre-Feet)

Year	Sources of Supply									Total Per Year
	Water Retailors			Agriculture, Irrigation, & Miscellaneous Uses			Total Per Source			
	Alluvial Aquifer	Saugus Form.	SWP	Alluvial Aquifer	Saugus Form.	SWP	Alluvial Aquifer	Saugus Form.	SWP	All Sources
1980	16,625	4,569	1,125	14,831	20	0	31,456	4,589	1,125	37,170
1981	14,056	4,950	5,816	16,737	20	0	30,793	4,970	5,816	41,579
1982	8,684	3,569	9,659	13,184	521	0	21,868	4,090	9,659	35,617
1983	8,803	3,398	9,185	11,483	454	0	20,286	3,852	9,185	33,323
1984	12,581	3,809	10,996	14,737	640	0	27,318	4,449	10,996	42,763
1985	12,519	4,140	11,823	12,828	575	0	25,347	4,715	11,823	41,885
1986	12,418	4,975	13,759	11,787	510	0	24,205	5,485	13,759	43,449
1987	12,630	4,962	16,285	10,012	599	0	22,642	5,561	16,285	44,488
1988	12,197	6,404	19,033	9,451	524	0	21,648	6,928	19,033	47,609
1989	13,978	7,217	21,618	9,743	542	0	23,721	7,759	21,618	53,098
1990	13,151	8,302	21,613	10,725	559	0	23,876	8,861	21,613	54,350
1991	17,408	14,417	7,968	9,779	500	0	27,187	14,917	7,968	50,072
1992	16,897	10,458	13,911	10,694	466	987	27,591	10,924	14,898	53,413
1993	19,808	10,151	13,393	10,318	459	443	30,126	10,610	13,836	54,572
1994	20,068	11,531	14,389	13,065	494	311	33,133	12,025	14,700	59,858
1995	20,590	8,087	16,996	13,874	473	6	34,464	8,560	17,002	60,026
1996	24,681	7,373	18,093	13,757	813	780	38,438	8,186	18,873	65,497
1997	25,273	6,752	22,148	14,326	993	1,067	39,599	7,745	23,215	70,559
1998	23,898	4,706	20,254	12,750	849	12	36,648	5,555	20,266	62,469
1999	27,240	2,728	27,282	16,166	988	20	43,406	3,716	27,302	74,424
2000	25,216	3,193	32,579	14,433	887	3	39,649	4,080	32,582	76,311
2001	22,055	3,267	35,369	15,218	873	0	37,273	4,140	35,369	76,782
2002	22,097	4,360	41,768	16,006	800	0	38,103	5,160	41,768	85,031

NEWHALL COUNTY WATER DISTRICT

Summary of Annual Rainfall

October 1st Thru September 30th

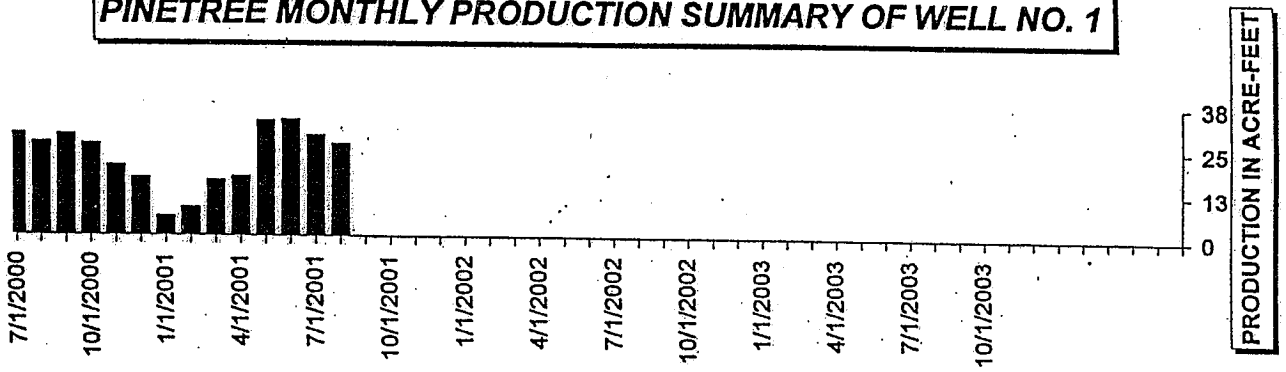
(Totals in inches)

	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
Oct	0.68	3.47	0.00	0.86	0.00	0.50	1.55	0.57	0.78
Nov	1.55	1.25	0.92	0.37	0.63	0.00	0.00	0.75	0.71
Dec	0.24	4.80	6.74	0.00	0.01	5.59	7.25	1.76	1.94
Jan	2.11	3.37	0.89	2.89	1.11	3.28	17.11	0.48	21.98
Feb	0.62	3.49	4.13	4.23	5.72	16.64	11.73	5.31	1.93
Mar	1.69	1.16	1.30	0.22	11.33	9.73	4.27	2.33	8.30
Apr	0.14	3.98	0.30	0.48	0.00	0.15	0.00	0.42	0.72
May	0.10	0.09	0.00	0.88	0.00	0.34	0.00	0.00	0.26
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.76
Jul	0.09	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00
Aug	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep	0.00	0.10	0.62	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	7.24	21.71	14.90	9.93	18.80	36.53	42.56	11.62	37.38

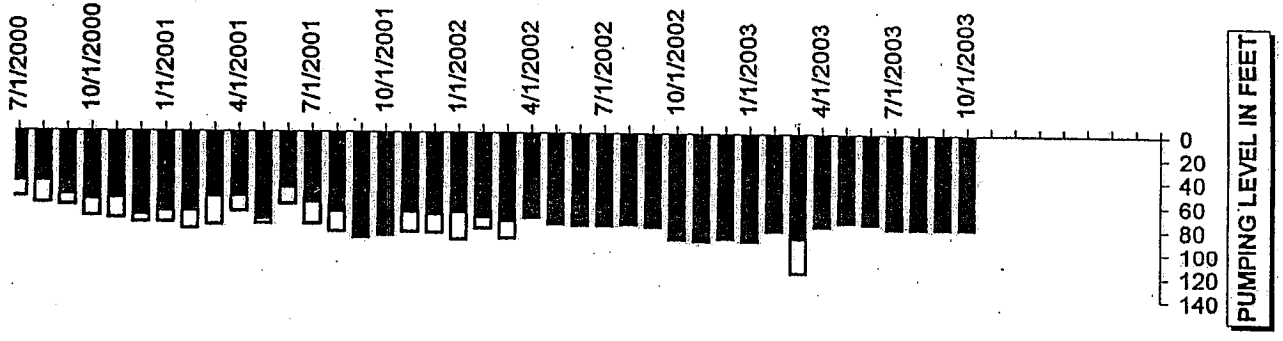
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Oct	0.00	1.30	0.00	0.33	0.00	1.13	0.22	0.00	1.10
Nov	0.00	1.06	3.73	1.39	0.00	0.00	3.18	3.01	0.63
Dec	2.33	8.70	6.72	1.39	0.05	0.00	1.30	5.85	2.57
Jan	2.97	6.64	3.49	2.08	1.21	5.84	1.55	0.00	
Feb	6.73	0.23	22.00	0.65	9.43	10.76	0.51	9.03	
Mar	2.08	0.00	5.15	3.00	3.15	3.38	0.38	2.38	
Apr	0.13	0.00	2.28	3.78	2.10	2.56	0.05	2.35	
May	0.68	0.00	5.50	0.00	0.00	0.00	0.12	1.70	
Jun	0.00	0.00	0.06	0.48	0.00	0.00	0.01	0.00	
Jul	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.02	
Aug	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	
Sep	0.00	0.53	0.21	0.01	0.00	0.00	0.02	0.00	
TOTAL	14.92	18.51	49.14	13.11	16.25	23.67	7.34	24.34	4.30

Newhall County Water District

PINETREE MONTHLY PRODUCTION SUMMARY OF WELL NO. 1



WELL NO. 1



For October 2003

Current Month's Production (AF):	**0.00**
AVG GPD	0

"July 1 Thru June 30"

TOTAL TO DATE (AF)	0.00
PREVIOUS YEAR (AF)	0.00
Comparative Ratio	**0.0%**

TIMED GPM	0
STATIC LEVEL	80
PUMPING LEVEL	0
TOP OF BOWLS	**160**

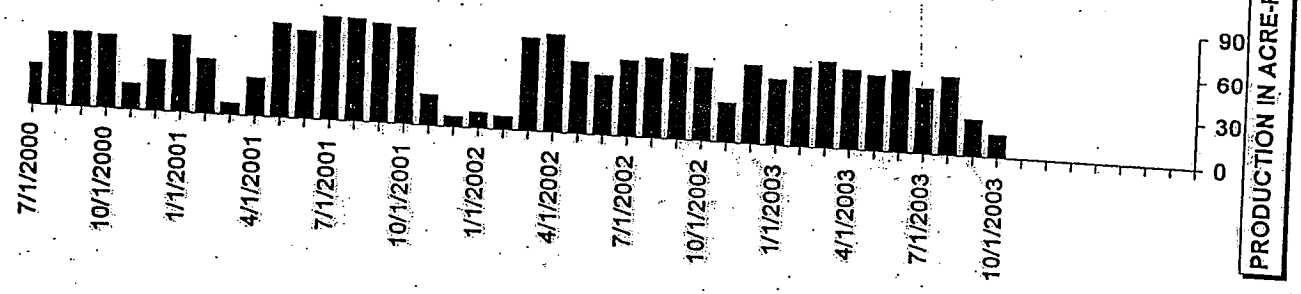
WEATHER:

AVG HIGH	90.8
AVG LOW	57.3
PRECIPITATION	0.10

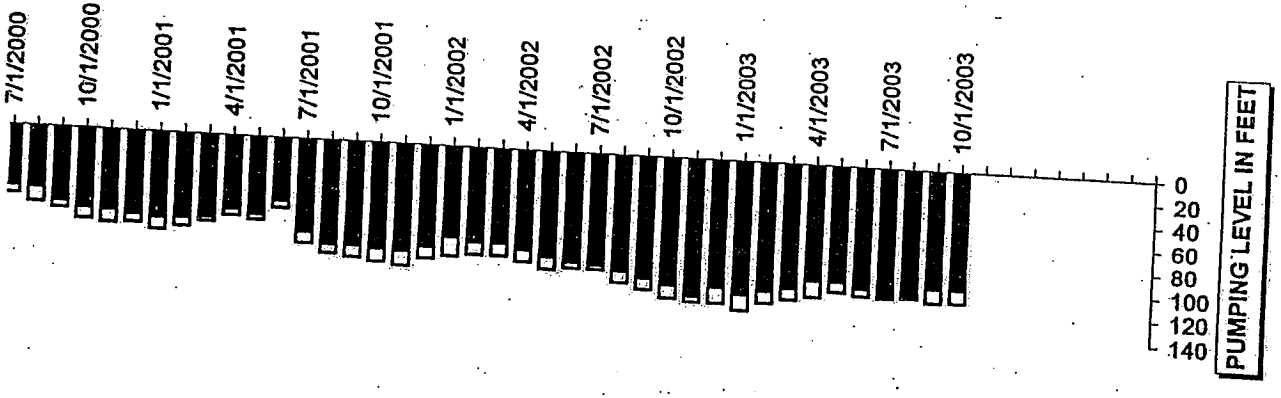
TOTAL PRECIPITATION SINCE OCT 1st	0.10

Newhall County Water District

PINETREE MONTHLY PRODUCTION SUMMARY OF WELL NO. 3



WELL NO. 3



For October 2003

Current Month's Production (AF):	**14.84**
AVG GPD	**156,032**

"July 1 Thru June 30"

TOTAL TO DATE (AF)	**138.43**
PREVIOUS YEAR (AF)	**220.18**
Comparative Ratio	**-37.1%**

TIMED GPM	**525**
STATIC LEVEL	**102**
PUMPING LEVEL	**113**
TOP OF BOWLS	**135**

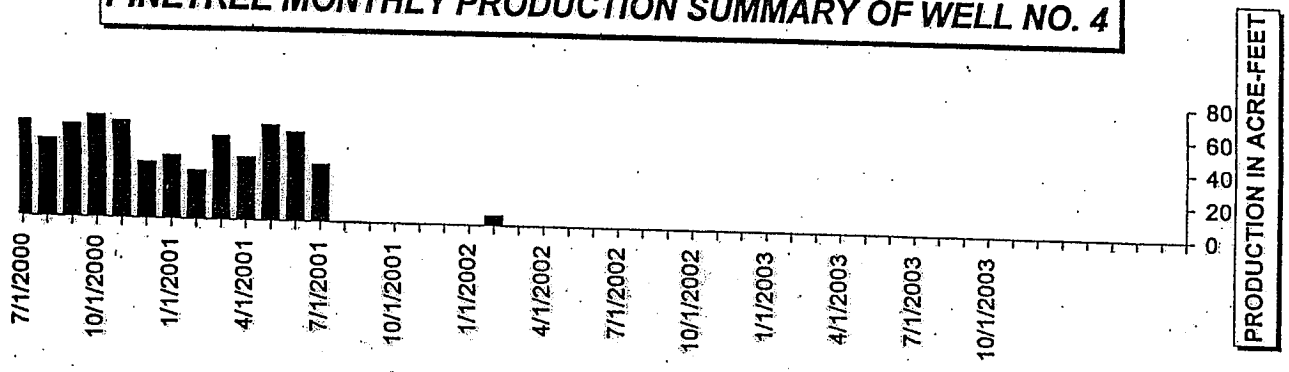
WEATHER:

AVG HIGH	**90.8**
AVG LOW	**57.3**
PRECIPITATION	**0.10**

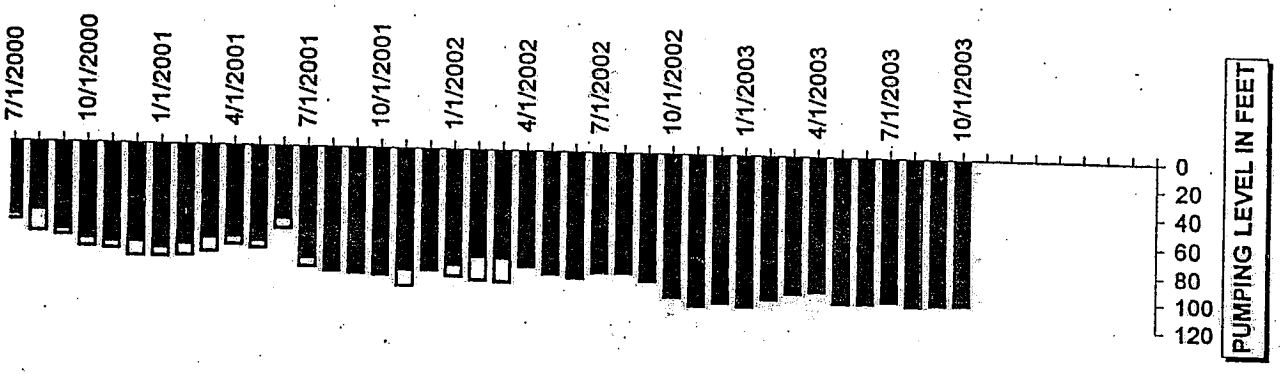
TOTAL PRECIPITATION SINCE OCT 1st **0.10**

Newhall County Water District

PINETREE MONTHLY PRODUCTION SUMMARY OF WELL NO. 4



WELL NO. 4



For October 2003

Current Month's Production (AF):	**0.00**
AVG GPD	0

"July 1 Thru June 30"

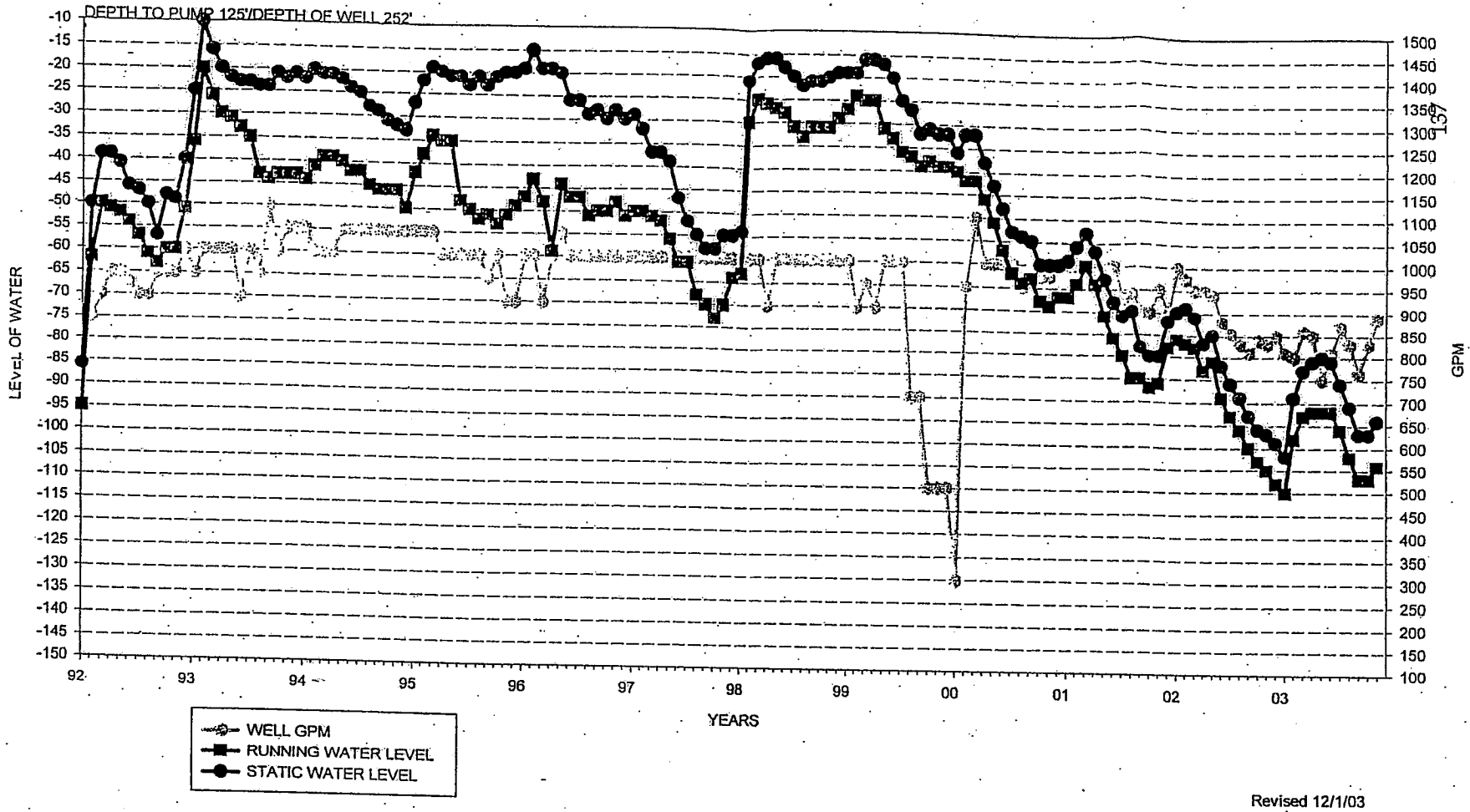
TOTAL TO DATE (AF)	0.00
PREVIOUS YEAR (AF)	0.00
Comparative Ratio	**0.0%**

TIMED GPM	0
STATIC LEVEL	104
PUMPING LEVEL	0
TOP OF BOWLS	165

WEATHER:

AVG HIGH	90.8
AVG LOW	57.3
PRECIPITATION	0.10

TOTAL PRECIPITATION SINCE OCT 1st 0.10



Revised 12/1/03

ITEM NO.
2 A

STATE OF CALIFORNIA • RESOURCES AGENCY • DEPARTMENT OF WATER RESOURCES

NOTICE TO
STATE WATER PROJECT CONTRACTORS

NUMBER: 04-04 DATE: MAR 0 1 2004

SUBJECT: 2004 State Water Project Allocation Increase

FROM: Tom Flory
DEPUTY DIRECTOR, DEPARTMENT OF WATER RESOURCES

The Department of Water Resources is increasing the allocation of 2004 State Water Project water for long-term contractors from 2.06 million acre-feet to 2.68 million acre-feet. Based on recent water supply conditions, SWP supplies are projected to meet 65 percent of most SWP contractors' 2004 Table A amounts, which total 4.13 MAF. Attached is the revised 2004 SWP allocation table.

The Department's new approval considered several factors, including existing storage in SWP conservation reservoirs, SWP operational constraints, and 2004 contractor demands. The Department will revise allocations as the year's hydrologic and water conditions develop.

If you have any questions, please contact Dan Flory, Chief of the Department's State Water Project Analysis Office at (916) 653-4313, or you may call Craig Trombly of his staff at (916) 653-6250.

Attachment

2004 STATE WATER PROJECT ALLOCATION

(ACRE-FEET)

SWP CONTRACTORS	TABLE A (1)	INITIAL REQUEST (2)	APPROVED ALLOCATION (3)	PERCENT APPROVED ALLOCATION (3)/(2) (4)
FEATHER RIVER				
County of Butte	3,500	3,500	2,275	65%
Plumas County FC&WCD	1,750	1,750	1,138	65%
City of Yuba City	9,600	9,600	6,240	65%
Subtotal	14,850	14,850	9,652	
NORTH BAY				
Napa County FC&WCD	21,350	21,350	14,203	65%
Solano County WA	47,206	47,206	30,684	65%
Subtotal	68,056	68,056	44,886	
SOUTH BAY				
Alameda County FC&WCD, Zone 7	80,619	80,619	52,402	65%
Alameda County WD	42,000	42,000	27,300	65%
Santa Clara Valley WD	100,000	100,000	65,000	65%
Subtotal	222,619	222,619	144,702	
SAN JOAQUIN VALLEY				
Oak Flat WD	5,700	5,700	3,705	65%
County of Kings	9,000	9,000	5,850	65%
Castaic Lake WA	12,700	12,700	8,255	65%
Dudley Ridge WD	57,343	57,343	37,273	65%
Empire West Side ID	3,000	3,000	1,950	65%
Kern County WA	998,730	998,730	649,174	65%
Tulare Lake Basin WSD	96,227	96,227	62,548	65%
Subtotal	1,182,700	1,182,700	768,755	
CENTRAL COASTAL				
San Luis Obispo County FC&WCD	25,000	25,000	16,250	65%
Santa Barbara County FC&WCD	45,486	45,486	29,566	65%
Subtotal	70,486	70,486	45,816	
SOUTHERN CALIFORNIA				
Antelope Valley-East Kern WA	141,400	141,400	91,910	65%
Castaic Lake WA	82,500	82,500	53,625	65%
Coachella Valley WD	33,000	33,000	21,450	65%
Crestline-Lake Arrowhead WA	5,800	5,800	3,770	65%
Desert WA	38,100	38,100	24,765	65%
Littlerock Creek ID	2,300	2,300	1,495	65%
Mojave WA	75,800	75,800	49,270	65%
Metropolitan WDSC	2,011,500	2,011,500	1,307,475	65%
Palmdale WD	21,300	21,300	13,845	65%
San Bernardino Valley MWD	102,600	102,600	66,690	65%
San Gabriel Valley MWD	28,800	28,800	18,720	65%
San Gorgonio Pass WA	8,000	8,000	3,900	65%
Ventura County FCD	20,000	20,000	13,000	65%
Subtotal	2,568,100	2,568,100	1,668,915	
TOTAL	4,128,811	4,128,811	2,683,727	

Los Angeles District

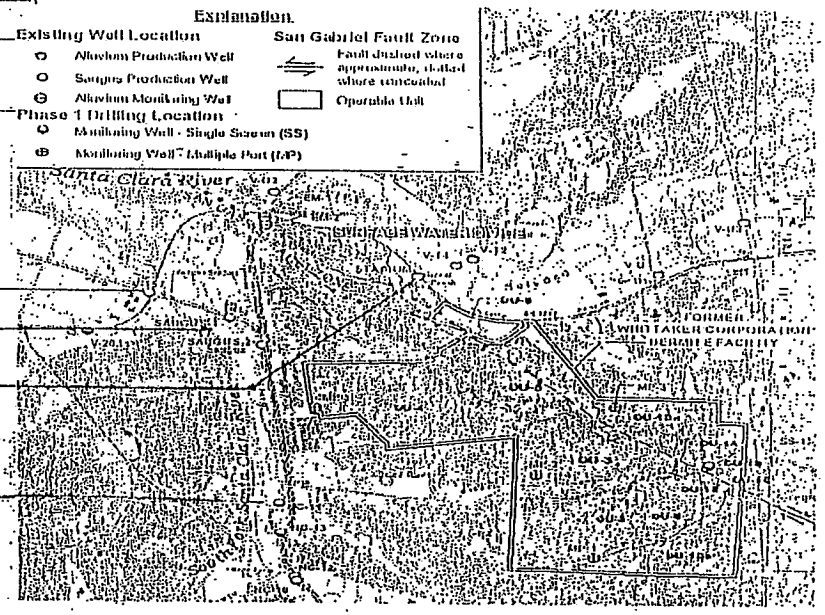
Citizens Advisory Group Update on City of Santa Clarita, CA

Eastern Santa Clara Subbasin Groundwater Study

December 10, 2003
Larry Sievers
213 452 3989
Larry.A.Sievers@usace.army.mil

Impacted Production Wells

Well ID	Total Cased Depth (ft)	Formation Perforated	Maximum Concentration (µg/L)
Inactive since 1997/1998:			
V-157	2,014	Saugus	Perchlorate = 14 TCE = 3.8
Saugus-1	1,640	Saugus	Perchlorate = 42 TCE = 3.9
Saugus-2	1,612	Saugus	Perchlorate = 47 TCE = 1.3
NC-11	1,136	Saugus	Perchlorate = 23 TCE = ND
Recently on inactive status:			
Stadium	~150	Alluvium	Perchlorate = 5.9 TCE = ND



V-157

Saugus 1 & 2

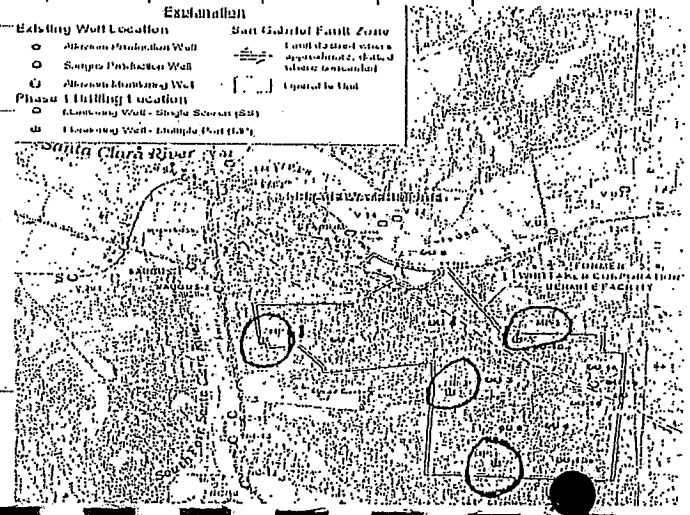
Stadium

NC-11

Perchlorate - MP Wells

Screen	MP-1			MP-2			MP-4			MP-3		
	Elev.	Rd. 1	Rd. 2	Elev.	Rd. 1	Rd. 2	Elev.	Rd. 1	Rd. 2	Elev.	Rd. 1	Rd. 2
1	935	20.9	23.7	1,101	58,200	64,500 J	1,022	3.5/ ND	ND/ ND	1,260	ND	ND
2	785	9.1/ 9.7	114/ 113	897	53,700/ 44,600	13,200 J	827	ND	ND	1,176	7.8	ND
3	645	14.9	29.9	827	21,400	72.2 J	485	ND	ND	997	18.7/ 23.6	ND
4	429	2 J	ND	657	99.6	ND/ 1.06 J	309	ND	ND	829	18.5	ND/ ND
5	344	2.5 J	ND	336	ND	4.5 J	209	ND	ND			
6	193	1.8 J	ND	201	267	33,400 J /23,800						
7	13	ND	ND									
8	-47	3.7 J	2 J									
9	-233	6.6	ND									
10	-363	ND	ND									

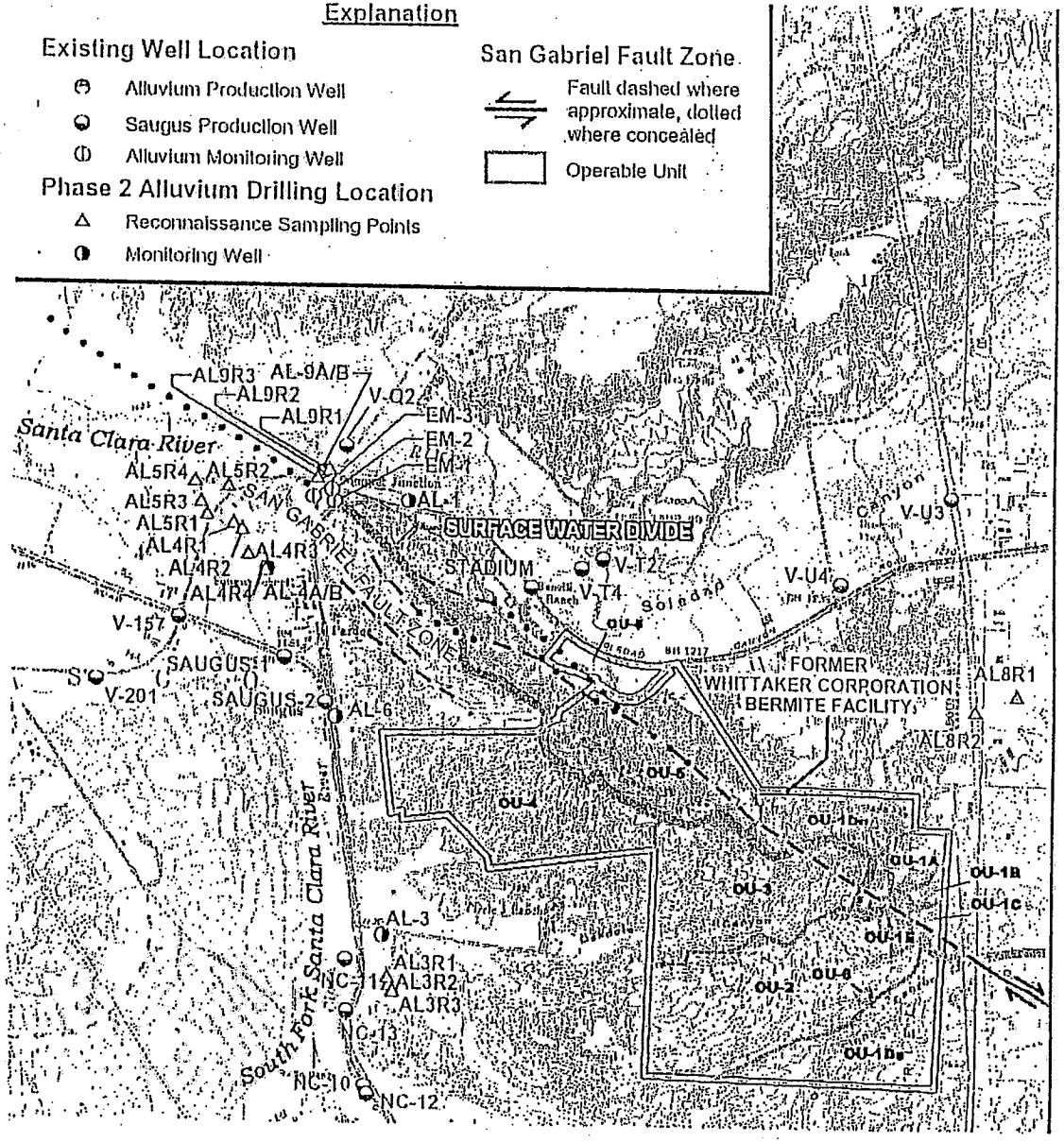
Concentration reported in µg/L
Elev. = MP port elevation in feet msl
J = Estimated value
ND = Not detected



Perchlorate - AL Recon

Sampling Point	AL-4		AL-5		AL-9	
	Depth	Conc.	Depth	Conc.	Depth	Conc.
R1	56	3.6	46	2.9 J	40	30.3
R1	66	2.7 J	56	2.0 J	47	38.9
R2	56	6.9	46	ND	41	17.6/18.0
R2	81	2.0 J	56	ND	51	31.2
R2	-	-	76	ND	-	-
R3	56	8.8	46	ND	-	-
R3	66	4.9/4.6	56	ND	-	-
R4	56	12.9	46	ND	-	-
R4	77	2.6 J	56	ND	-	-

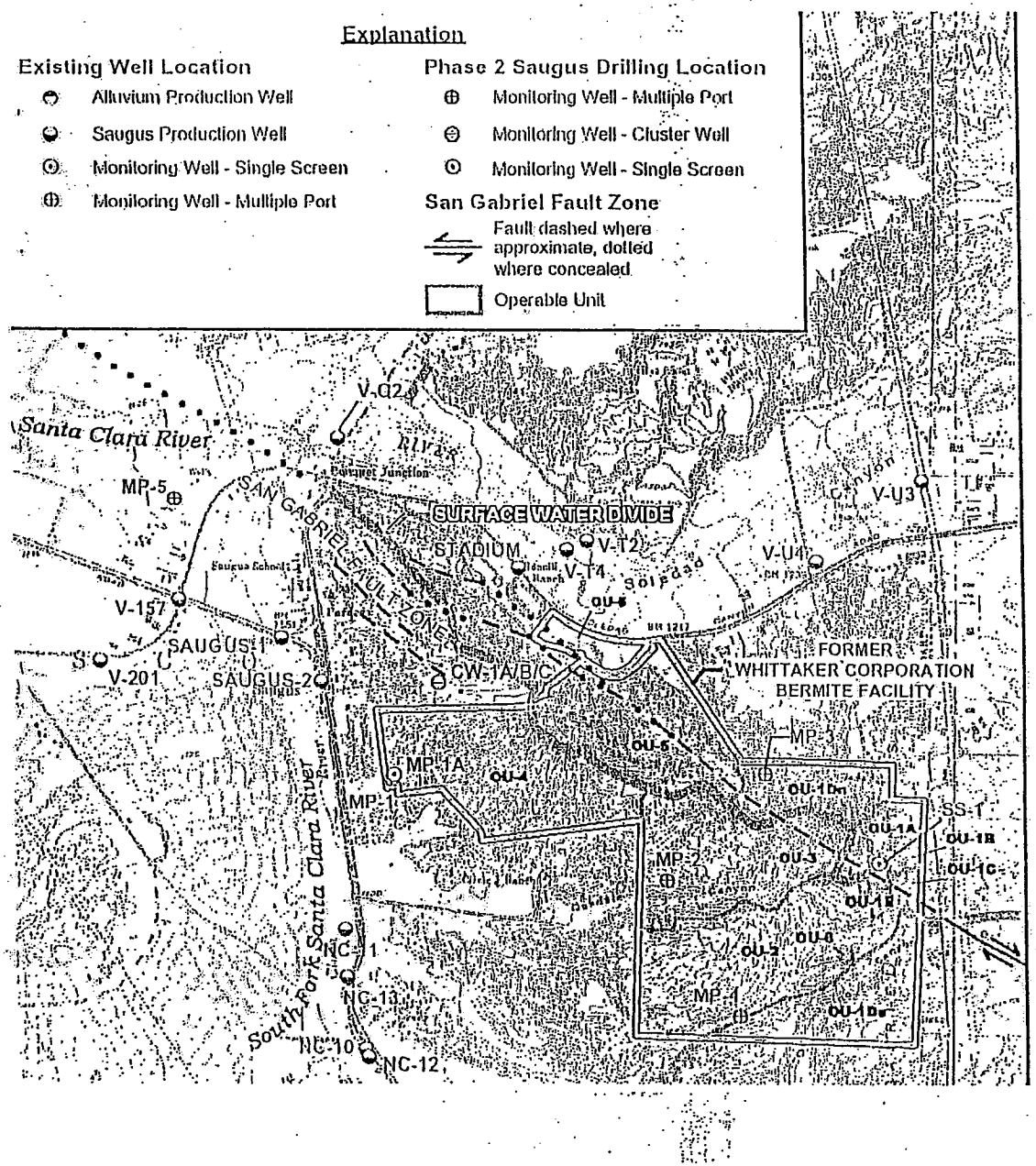
Conc. = reported in µg/L
Depth = in feet below ground surface
J = Estimated value
ND = Not detected



Alluvium

Phase 2 Monitoring Well Locations

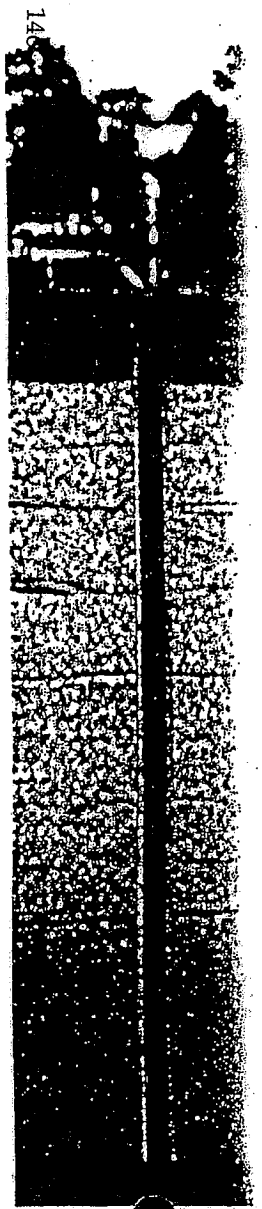
Will be sampled again in Jan 04



Saugus Formation

Phase 2 Monitoring Well Locations

Will be sampled again in Jan 04



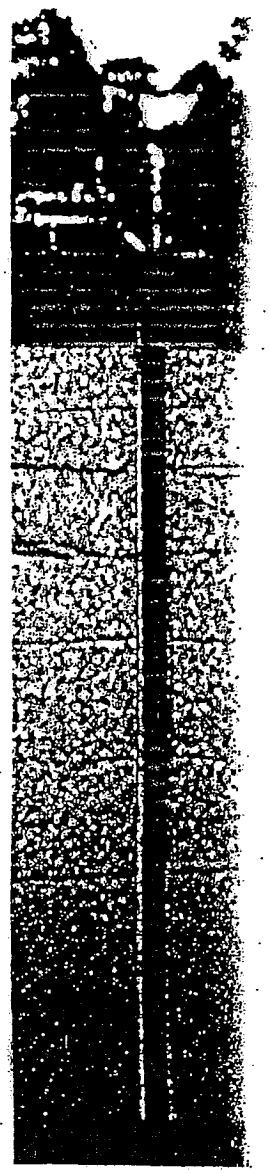
Groundwater Modeling Analysis
Upper Santa Clara River Basin

Restoring Impacted Water Supplies Near Whittaker-Bermite

presented by

John Porcello/CH2M HILL

December 10, 2003



Objectives and Methods

- Evaluate pumping strategies for impacted wells that meet specific goals
  - Restoring lost water supplies
    - Saugus: 4,000 AF/yr
    - Alluvium: 700-1,000 AF/yr
  - Protecting downgradient wells
- Develop and apply groundwater flow model

State Water Project Delivery Reliability Report 2002

June 29, 2004

Department of Water Resources
Bay-Delta Office

Agenda Item: 1

SWP Delivery Reliability Report

Purpose

- To provide useful information to water suppliers and planners on the delivery reliability of the SWP presently and 20 years into the future.

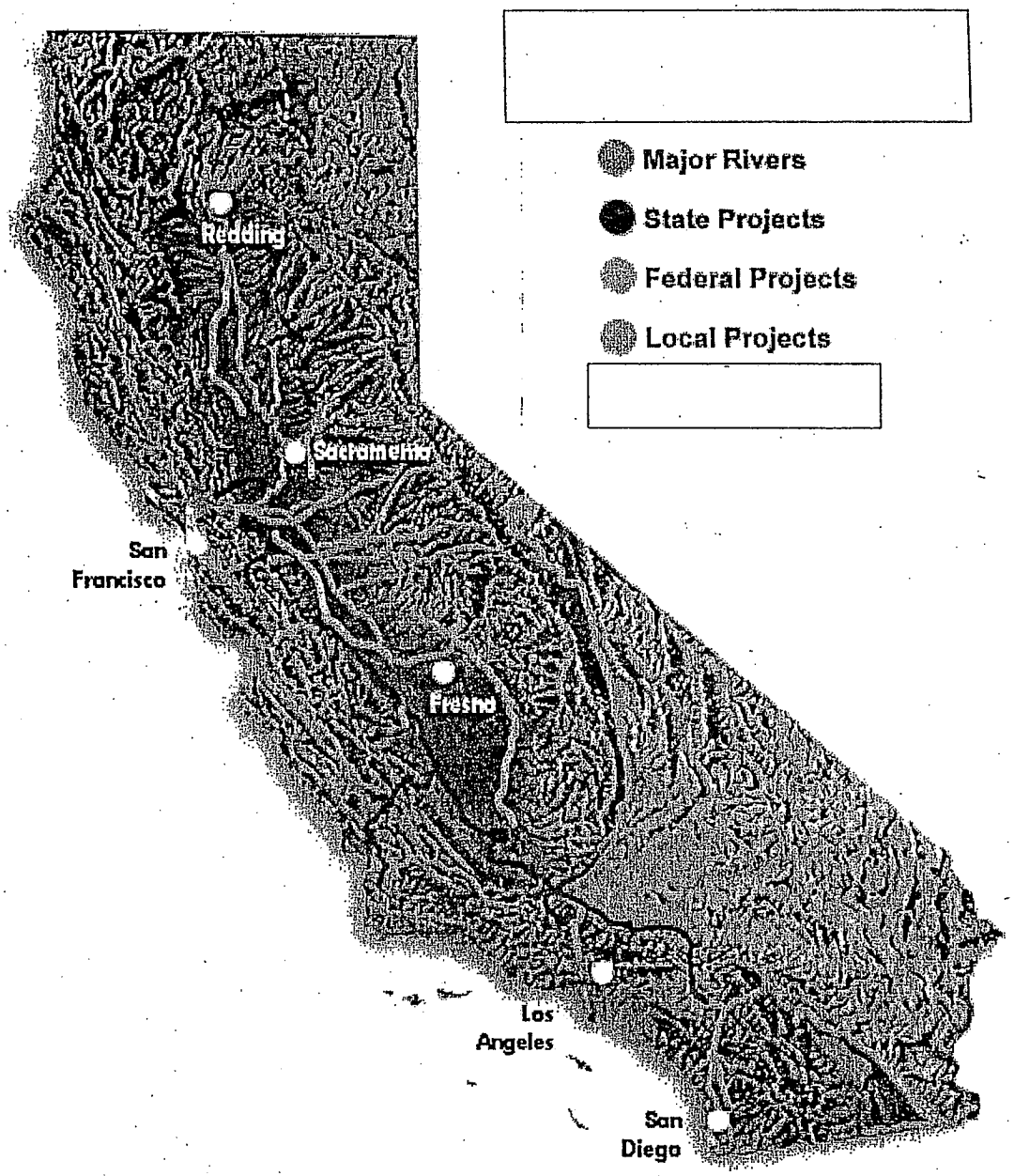
Audience

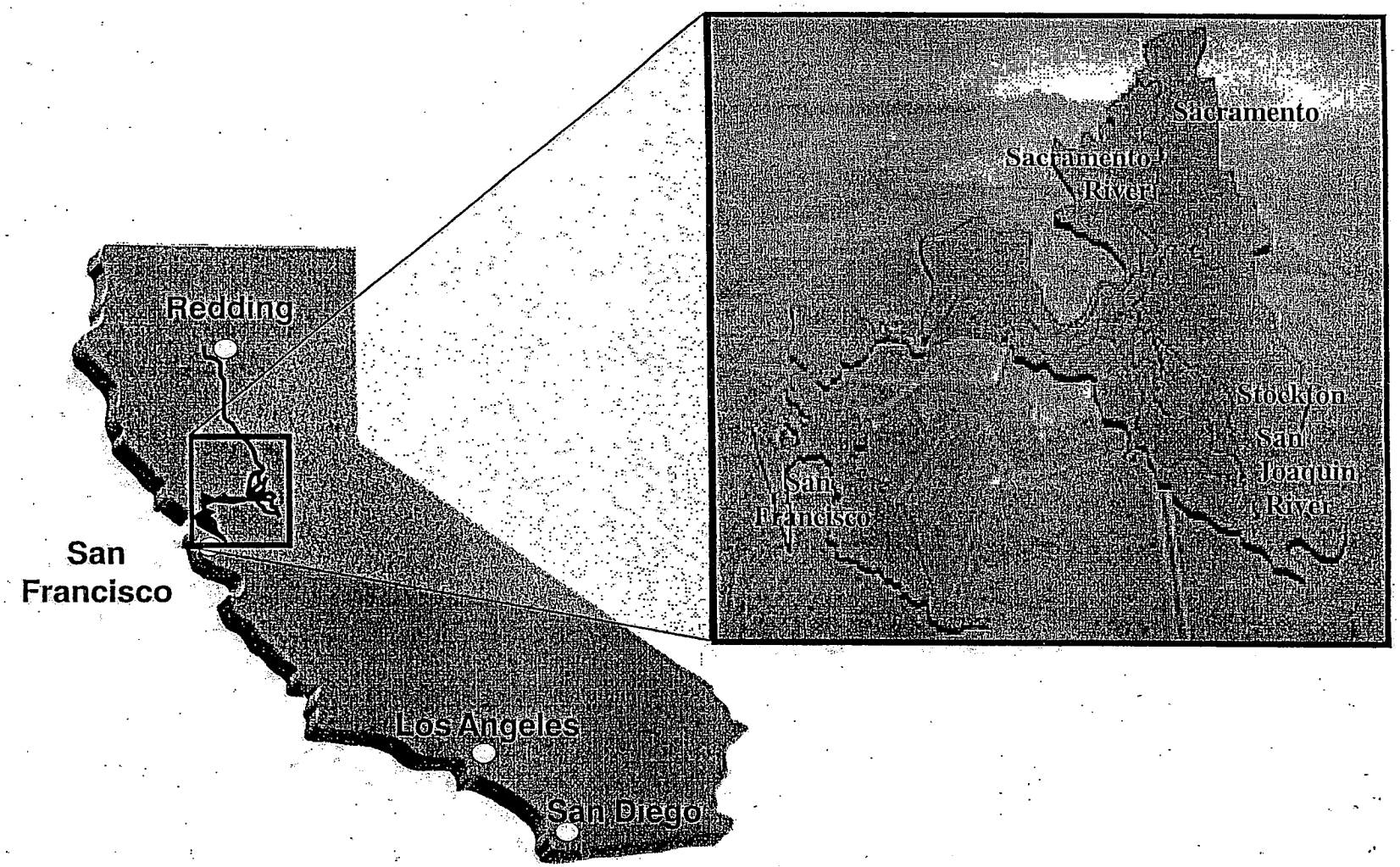
- State Water Contractors and related water providers; city, county, and regional planning agencies; interested citizens

SWP Delivery Reliability Report

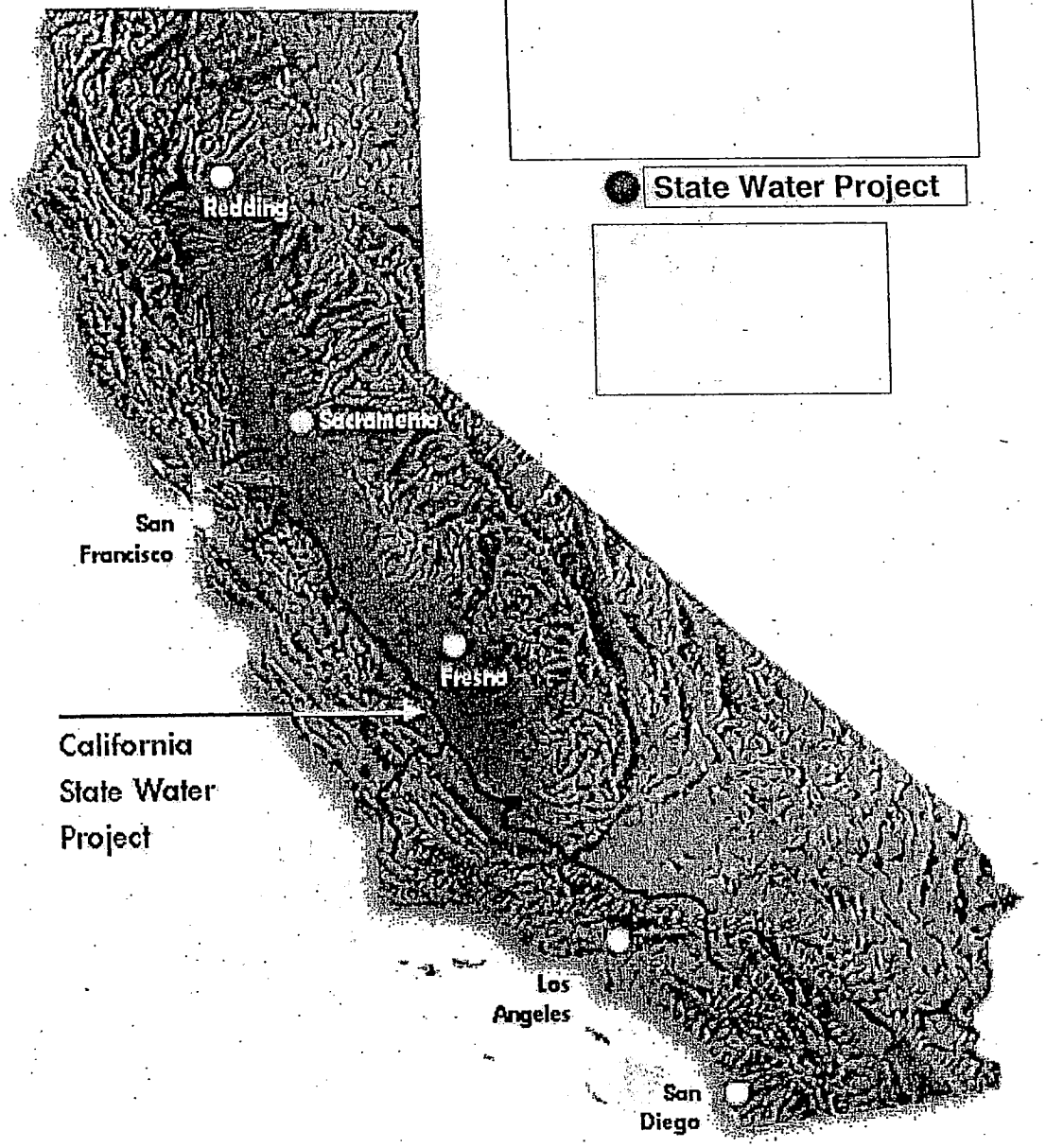
- DWR supports local determination of the sufficiency of local water supply
- Explains how SWP delivery reliability is determined
- Presents results
- Provides examples of how to apply the information.
- Commits to an evaluation of CALSIM II

Some SWP Basics

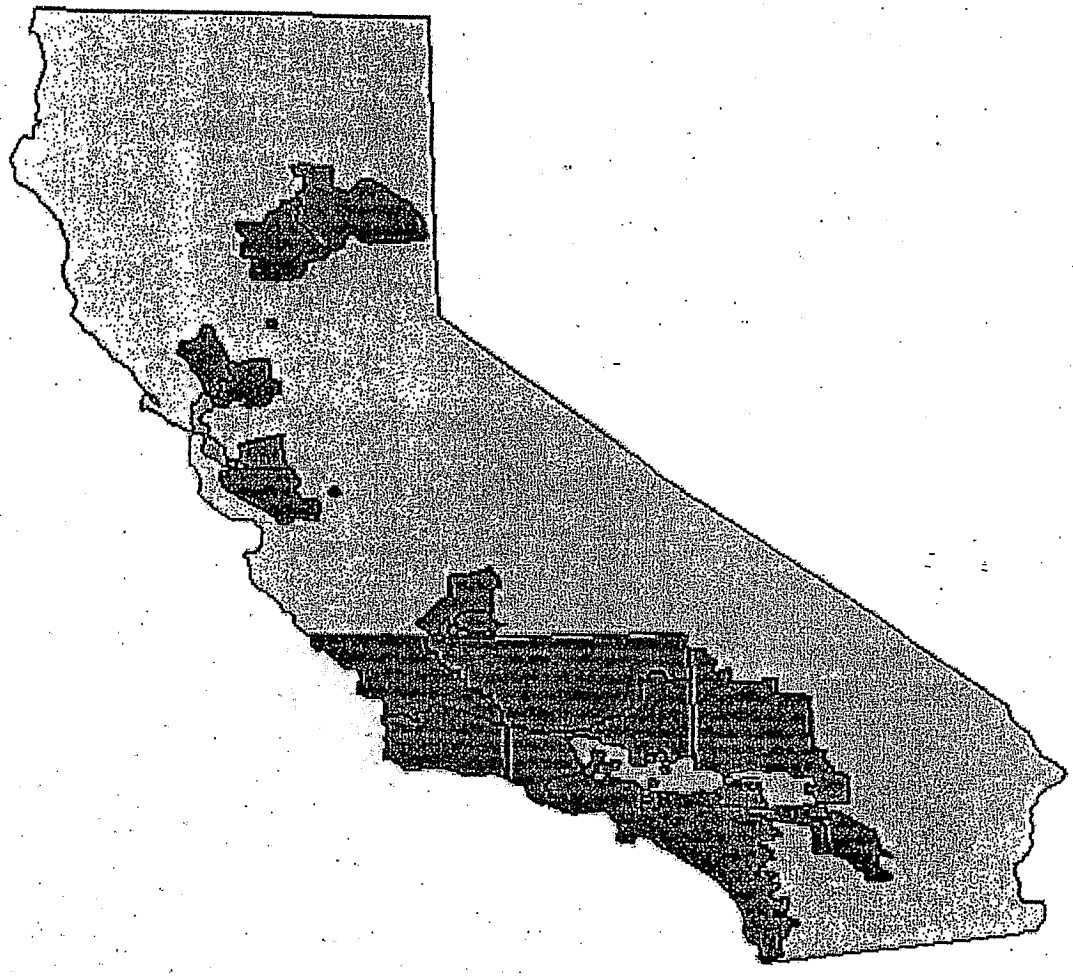

Major Rivers
State Projects
Federal Projects
Local Projects
Redding
Sacramento
San Francisco
Fresno
Los Angeles
San Diego



Bay-Delta detail image from CALFED


State Water Project
Redding
Sacramento
San
Francisco
Fresno
California
State Water
Project
Los
Angeles
San
Diego

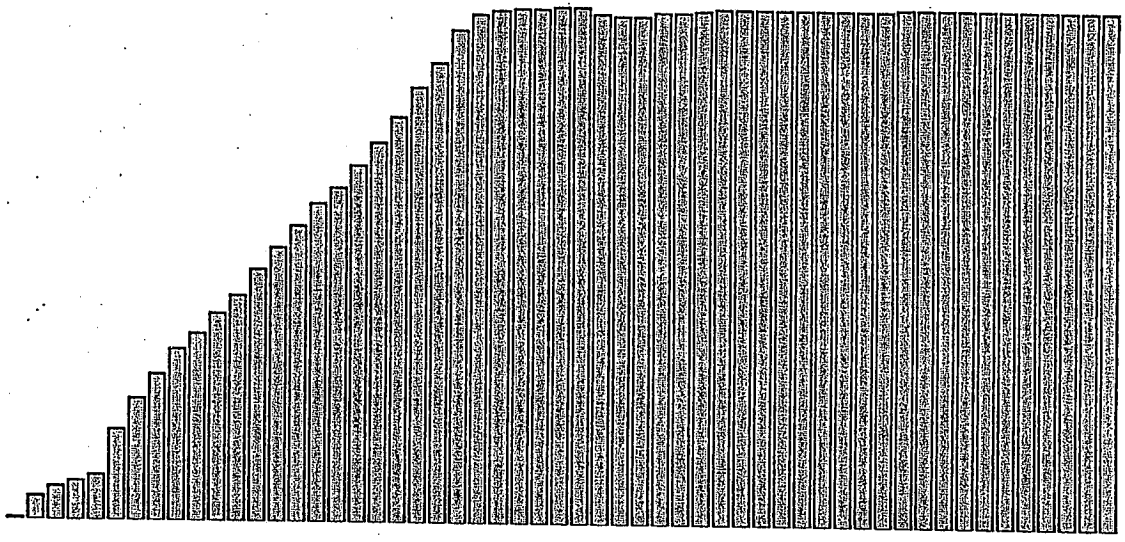
SWP Service Area Map



What is "Table A"?

- Maximum amount of water SWP is contracted to provide annually
- Tool used to apportion available water supply each year

Table A Amounts



Source: Bulletin 132-00 Table B-4 column 39

Conditions for Article 21 Deliveries

- Cannot interfere with SWP allocations or operations
- Excess water available in the Delta
- Conveyance capacity available
- Cannot be stored in the SWP system

Estimating SWP Delivery Reliability

CALSIM II

A computer model that simulates the operation of the SWP

CALSIM II

- Simulates operations of SWP and CVP facilities
- Represents the Sacramento and San Joaquin River system and Delta
- Accounts for system operational objectives, physical constraints, legal and institutional agreements and statutes
- Uses historical water conditions, which are modified to reflect a certain level of development

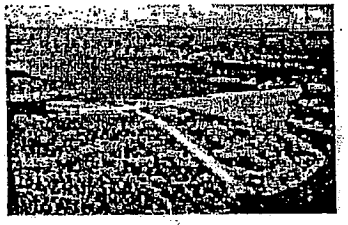
CALSIM II

- Accepted by DWR, the U.S. Bureau of Reclamation and CALFED
- Used in studying
  - CALFED Conveyance Program
  - CALFED Storage Program
  - Annual Operation of SWP and CVP
  - Proposed changes in Delta flow and quality requirements

What is Water Delivery Reliability?

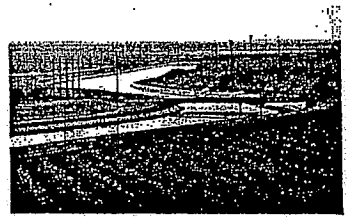
It is an estimate of the certainty that a given amount of water will be delivered to a specific place at a specific time.

Factors affecting SWP Delivery Reliability



Availability of water from the source

The means to convey the water



Amount and pattern of water demand

SWP Delivery Reliability Report Study Assumptions

- Existing facilities and regulatory requirements
- Three SWP Table A demand levels:
  - 2001 weather variable (3.0 – 4.1 maf/yr)
  - 2021 weather variable (3.3 – 4.1 maf/yr)
  - 2021 full Table A amount (4.1 maf/yr)
- Article 21 demand analyzed and assumed to increase from 2001 to 2021

Study Results

SWP Table A and Article 21 deliveries from the Delta (taf)

Study	Average	Maximum	Minimum
2001 Study			
Table A	2,960 (72%)	3,850 (93%)	800 (19%)
Article 21	130	510	0
2021A Study			
Table A	3,080 (75%)	4,130 (100%)	830 (20%)
Article 21	80	400	0
2021B Study			
Table A	3,130 (76%)	4,130 (100%)	830 (20%)
Article 21	70	400	0

Percent of Table A in parentheses.

Study Results

SWP Delta average and dry-year Table A deliveries [1]

	Average 73-year 1922-94	Single dry year 1977	2-year drought 1976-77	4-year drought 1931-34	6-year drought 1987-92	6-year drought 1929-34
2001	72%	19%	48%	37%	41%	40%
2006	73	19	47	38	41	40
2011	74	20	46	38	41	41
2016	74	20	45	39	40	41
2021	75	20	44	39	40	41

[1] Percent of Full Table A. Full Table A = 4.133 maf per year

Study Results

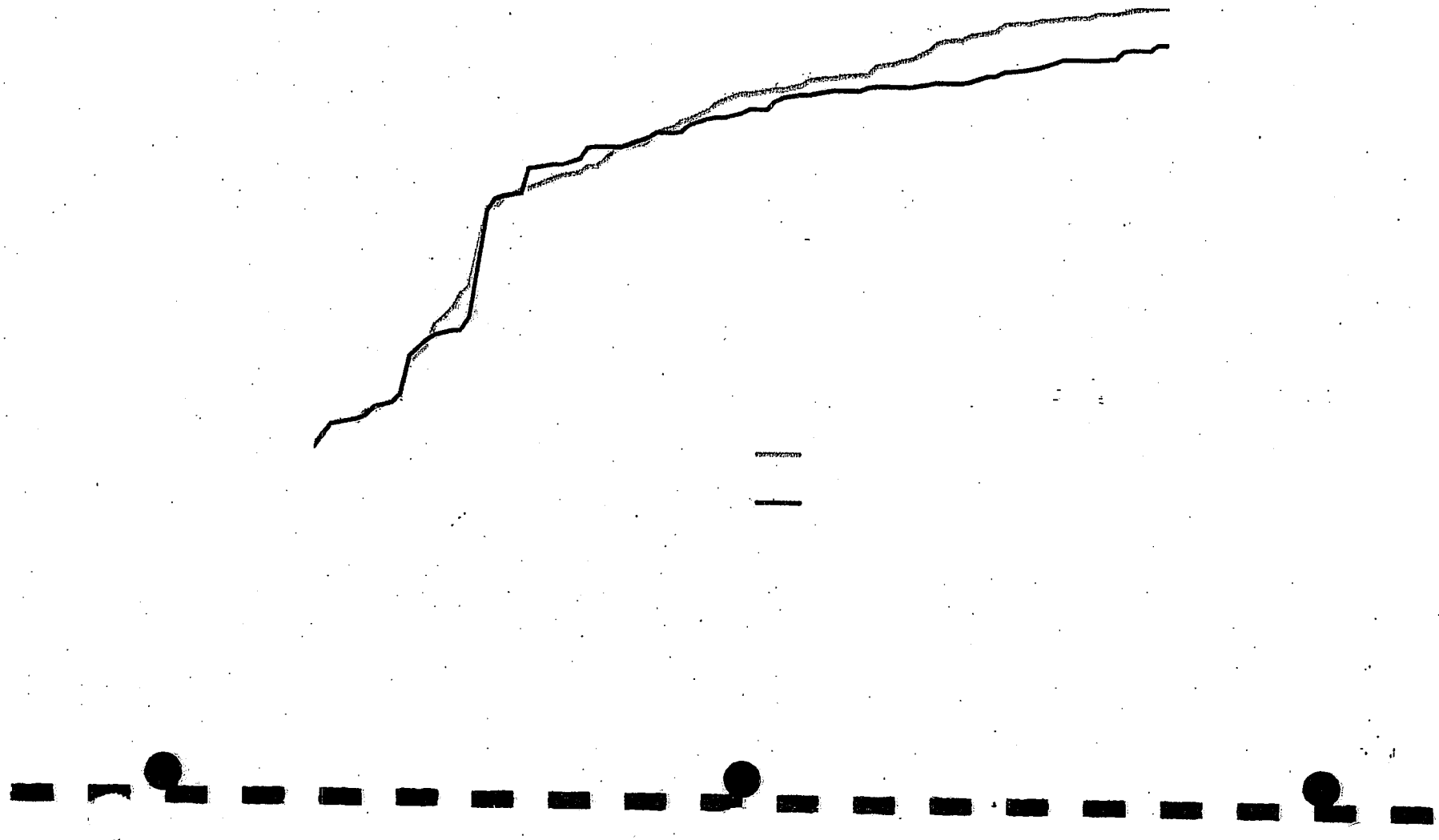
SWP Delta average and wet-year delivery

(Percent of Full Table A, 4.13 MAF)

Study	Average	Single wet 1983	2-year wet 1982-83	4-year wet 1980-83	6-year wet 1978-83	10-year wet 1978-87
2001	72%	73%	79%	80%	80%	80%
2021A	75	82	89	86	87	84
2021B	76	100	100	91	91	87

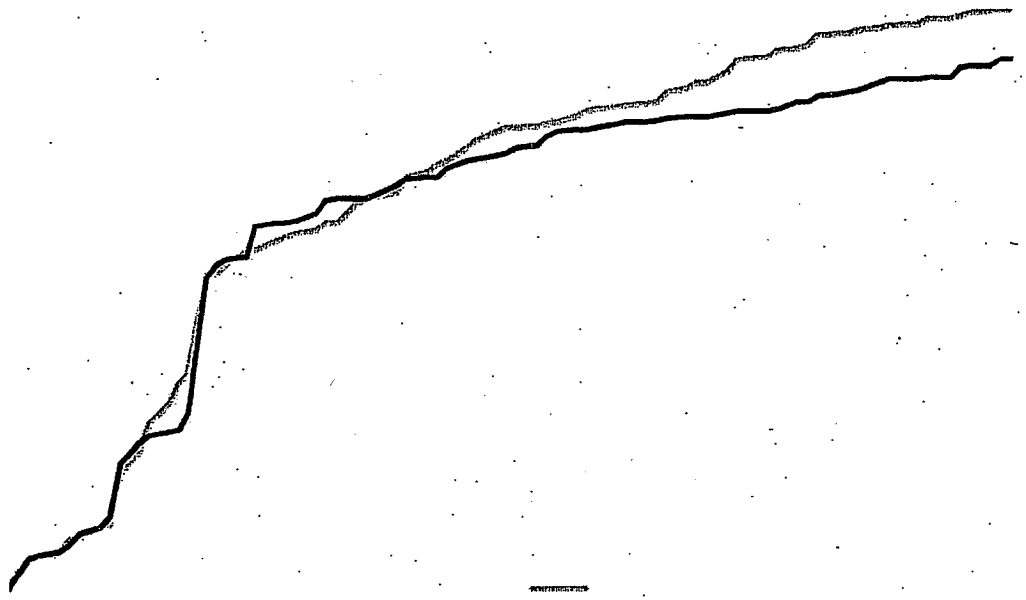
Study Results

Figure 1. SWP Delta Delivery Probability (Table A)



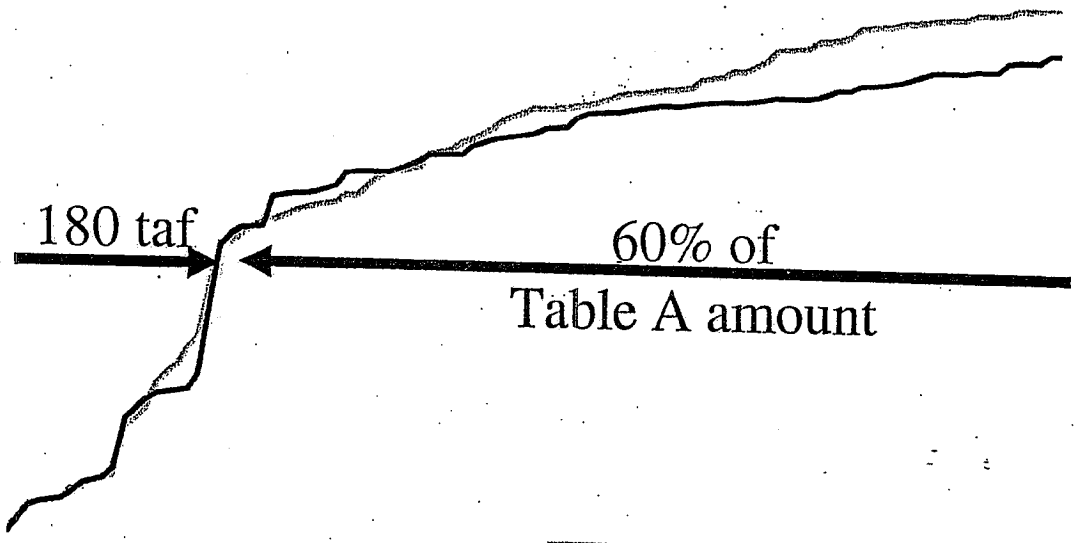
Greenacres ID Delivery Probability

Table A



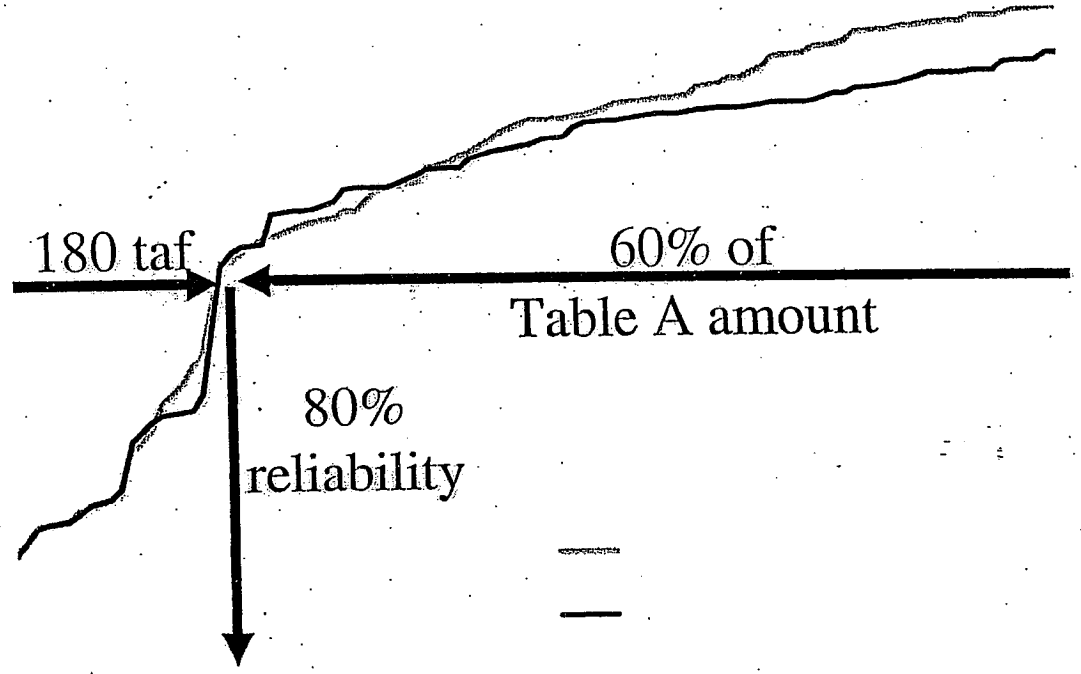
Greenacres ID Delivery Probability Table A

Step 1: Identify desired annual delivery



Greenacres ID Delivery Probability

Step 1: Identify desired annual delivery
Step 2: Determine delivery probability



Status of Studies and Update

- Historical Simulations – Complete
- CALSIM II Peer Review – Complete
  - Draft work plan comments -- May, 2004
  - Final Work Plan -- August, 2004
- Sensitivity Studies – Underway
- Updated Delivery Reliability report -- Draft expected in October, 2004

Discussion and Questions

Study Results

Table 6a. Average and Wet Year Water supply under Article 21
(taf per year; year of delivery in parentheses)

Study	*Average*	*Single wet year 1983*	*2-year wet 1982-1983*	*4-year wet 1980-1983*	*6-year wet 1978-1983*	*10-year wet 1978-1983*
2001	130	200	390 (1982)	100 (1980)	100 (1978)	100 (1978)
			200 (1983)	120 (1981)	140 (1979)	140 (1979)
				390 (1982)	100 (1980)	100 (1980)
				200 (1983)	120 (1981)	120 (1981)
					390 (1982)	390 (1982)
					200 (1983)	200 (1983)
						410 (1984)
						0 (1985)
						50 (1986)
						0 (1987)

Numbers rounded to nearest 10,000 acre-feet

Study Results

Table 4. Water supply under Article 21 (taf per year; year of delivery in parentheses)

Study	*Average*	*Single dry year 1977*	*2-year drought 1976-1977*	*4-year drought 1931-1934*	*6-year drought 1987-1992*	*6-year drought 1929-1934*
2001	130	0	110 (1976)	0 (1931)	0	0 (1929)
				200 (1932)		90 (1930)
				130 (1933)		0 (1931)
				0 (1934)		200 (1932)
						130 (1933)
						0 (1934)
2021						
(A and B)	80	0	0	0 (1931)	0	0 (1929)
				40 (1932)		30 (1930)
				10 (1933)		0 (1931)
				0 (1934)		40 (1932)
						10 (1933)
						0 (1934)

Numbers rounded to nearest 10,000 acre-feet

Contacts

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  (916) 653-1099
- **Francis Chung**
  (916) 653-5924

Web Site: http://swpdelivery.water.ca.gov

"The future ain't what it used to be"

-Yogi Berra

Agenda Item: 1

... And What You Can Do About It

-Jonas Minton

Jonas Minton

- 1978 California Department of Water Resources
- General Manager El Dorado County Water Agency

  -1994 first water supply assessment

  -17,000 acre feet of water rights for new development
- World Bank – Republic of China
- Executive Director American River Water Forum

  -Additional 200,000 acre feet of water for development

- Deputy Director California Dept. of Water Resources

  -Water Transfer Office; Water Conservation Office; Divisions of Planning, Dam Safety, Flood Management

  -Drought Task Force; Recycling Task Force; Desalination Task Force; Groundwater Bulletin

  -SB 610/221 Guidebook
- Retired in 2004
- Half Time for Planning and Conservation League

What Did The Future Used To Be?

- State Water Project "Entitlements" of 4,230,00 acre-feet
- Ample supplies of drinkable groundwater
- Reliable snow pack
- "Will Serve" letters

What's Changed?

- State Water Project says it can deliver about 2 million acre-feet (half the contract amount) 80% of the years

- In 1991 the State Water Project could just deliver 550,000 acre-feet- only 13% of contracted amounts

What Else?

- Monterey Amendment Lawsuits
- Groundwater contamination: Perchlorate, MTBE, Hexavalent Chromium, Arsenic, Nitrates, NDMA, etc.
- Senate Bills 610 and 221 "Show Me The Water" requirements
- CALSIM II peer review

"State Water Project Delivery Reliability Report," 2002;

In half the years SWP says it can deliver 80 % of Table A

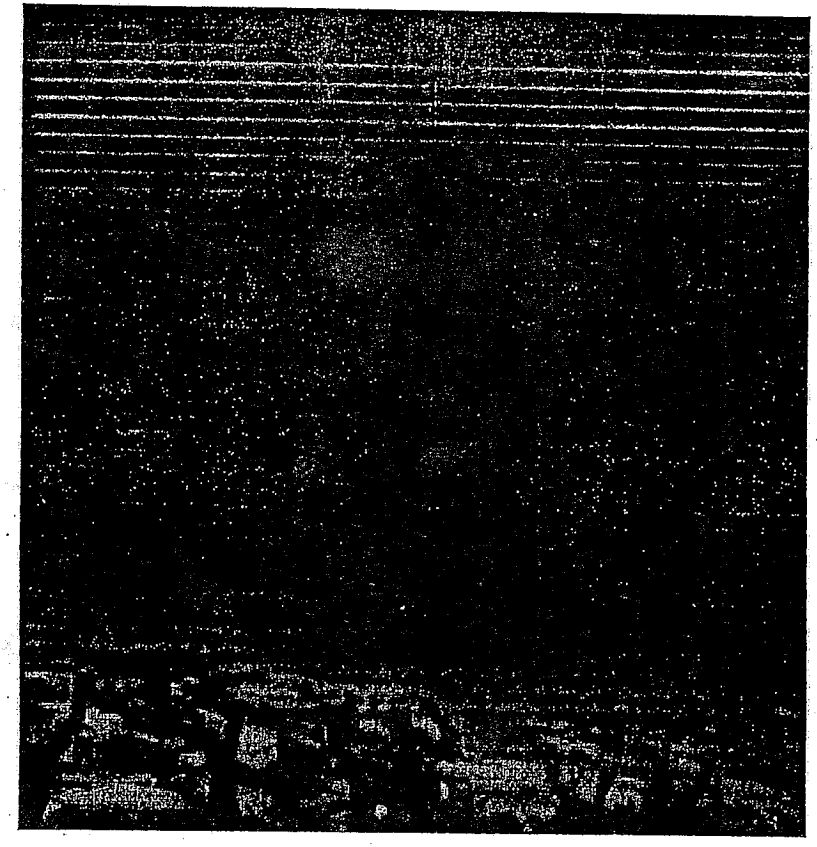
1 year in 5 SWP says it can deliver 50% of Table A

1 year in 10 the SWP says it can deliver 20% of Table A

Limitations of the SWP Report

- Short time record
- Uses CALSIM II model
- Does not account for Climate Change impacts
- Ignores fragile levee system that delivers water to southern California

Tree Stump In Lake Tahoe



CALSIM II
Peer Review by CALFED

- Model is not calibrated or validated, and findings do not include error bars
- Model is a comparative tool, rather than a predictive tool
- Model assumes no limits to northern California groundwater pumping; allowing greater deliveries to southern California

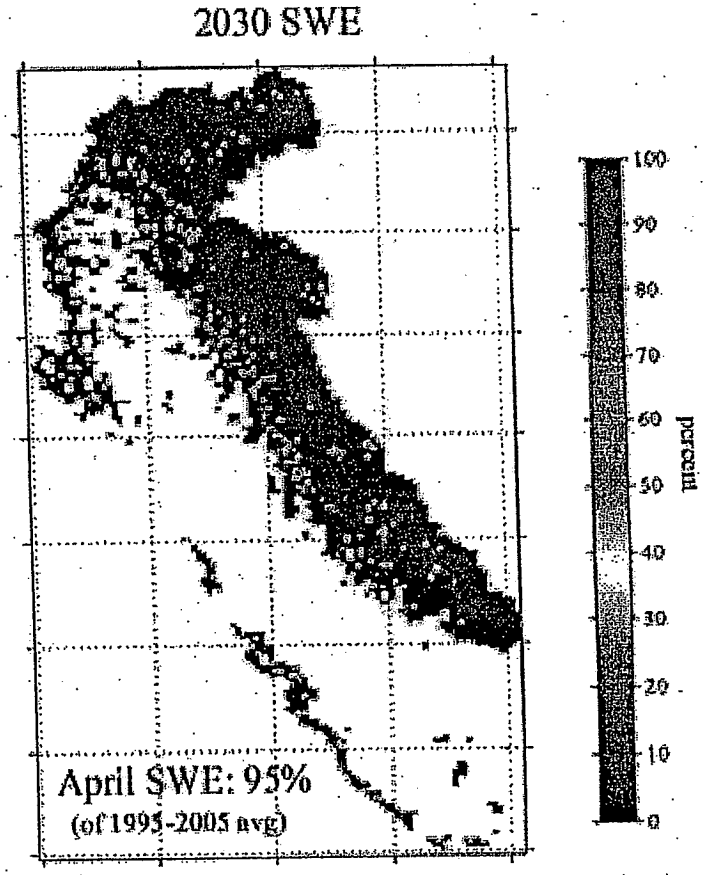
Global Climate Change
(No Matter What's Causing It)

- Warmer temperatures mean less snow
- Feather River watershed is primary source of SWP
- Feather River watershed is relatively low elevation-most affected by winter warming
- "…reduction of snow water equivalent by about one third to one half current levels…"

Snowpack Changes:

Evolution of Average Annual Snow Water Equivalent as a Percentage of Average 1995-2005 Values

(effect of temperature changes only: historical P, baseline T from WY 1965-1987)



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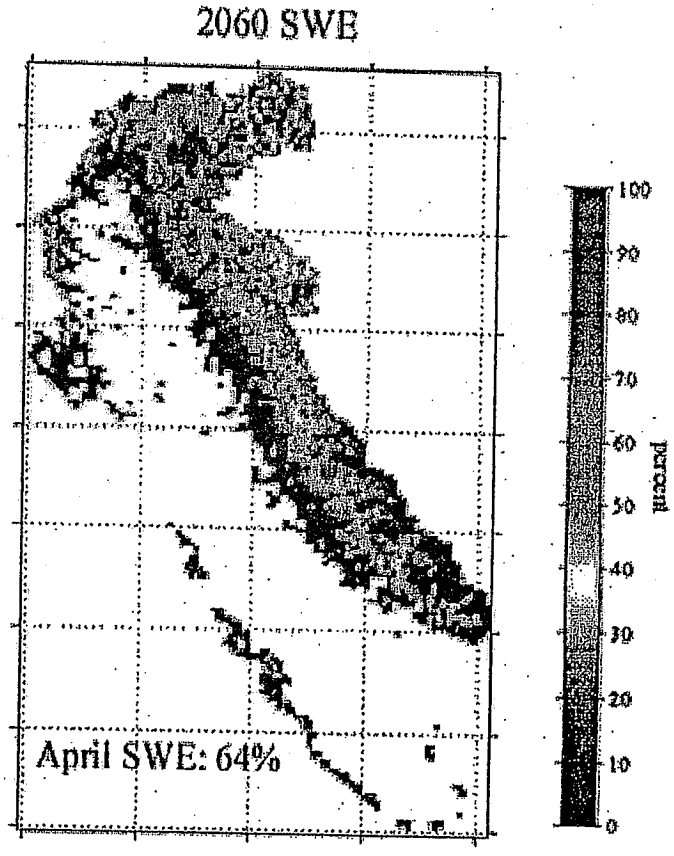

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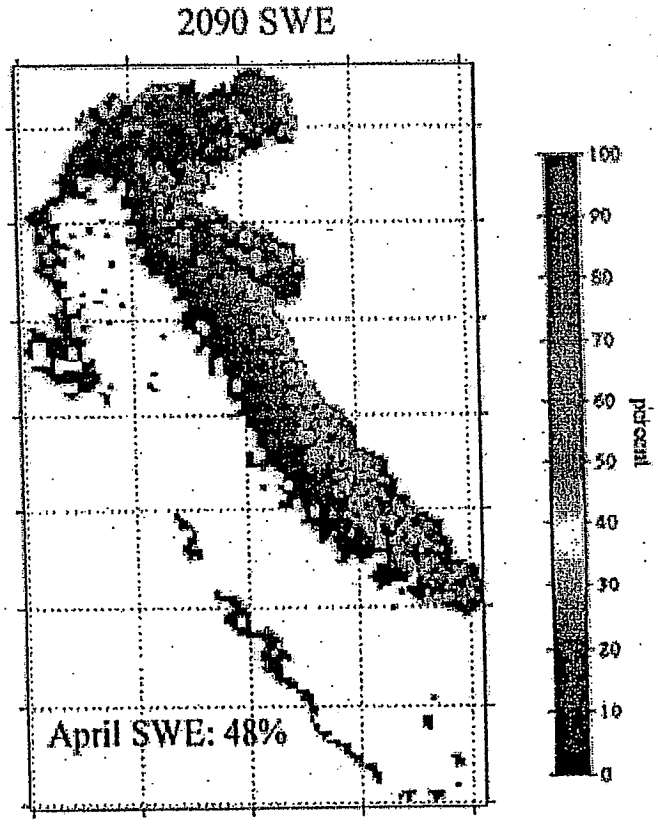
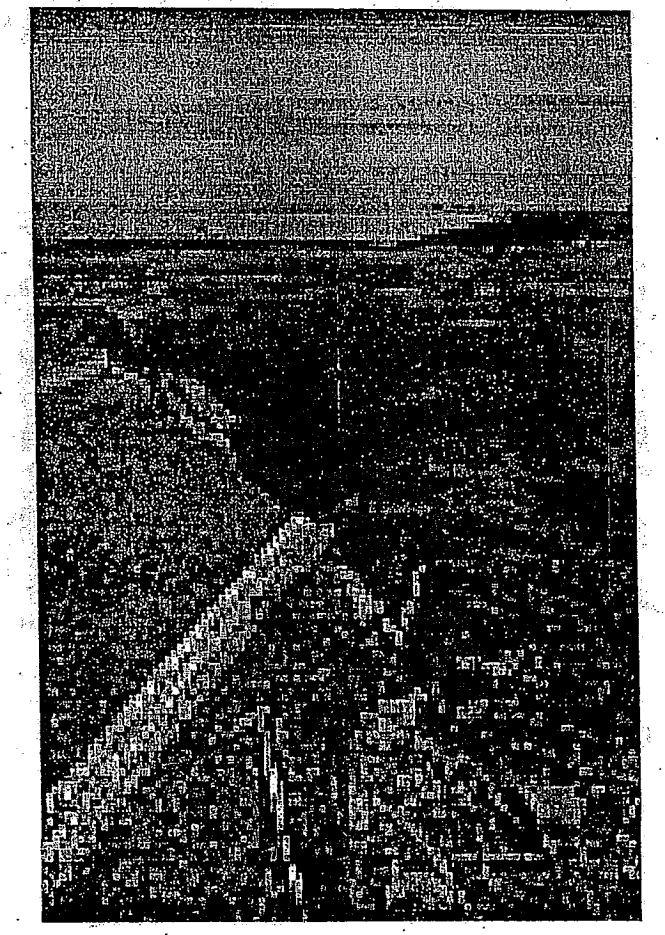


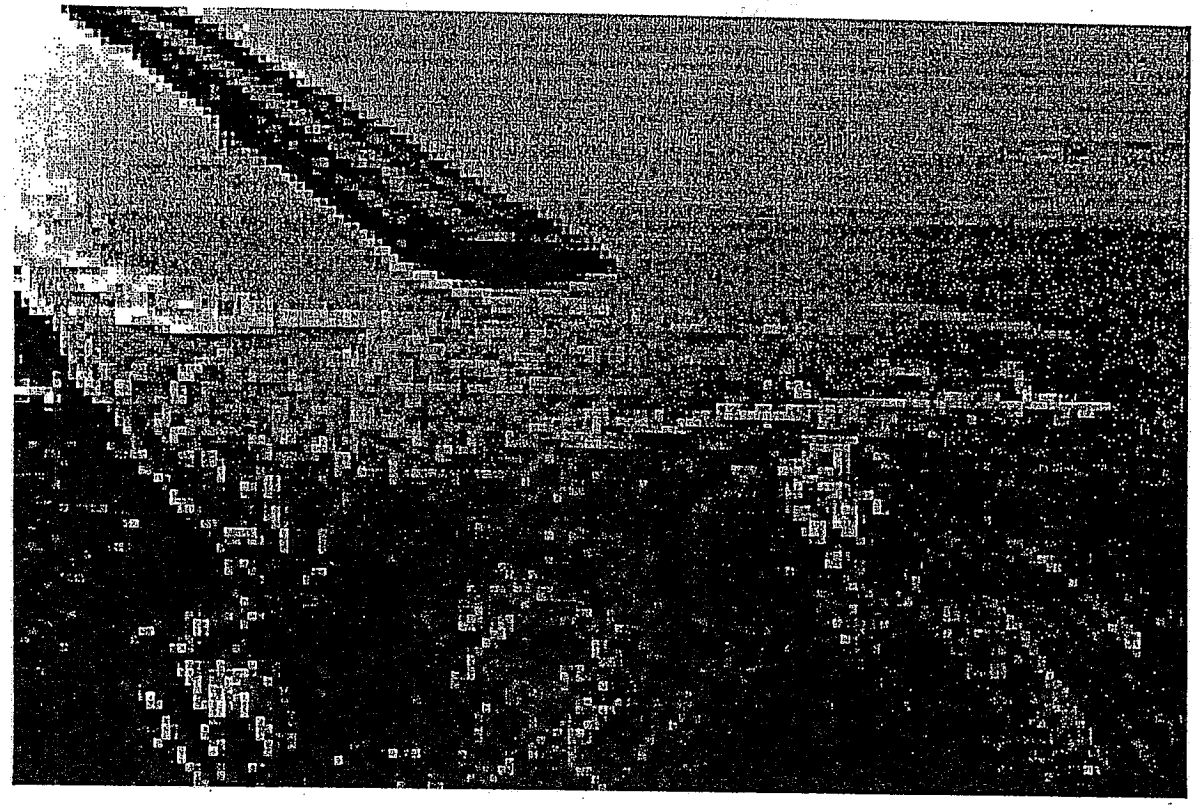
Fragile Delivery System

- SWP water delivered through fragile Bay-Delta
- Between 1981 and 1990 there were 22 levee breaches and 15 islands flooded in the Delta region
- Islands continue to sink, sea level is rising, levees are not maintained
- One chance in four of 6.0 earthquake in the Delta which could cause 8 to 26 simultaneous levee failures

Most recent break was on a "sunny day"!



Lower Jones Tract June, 2004



Who Is Supposed To Do What?

What DWR Does (And Does Not Do)

- Tries its best to deliver as much water as possible

- DWR does not certify Urban Water Management Plans. (Water Code Section 10657)

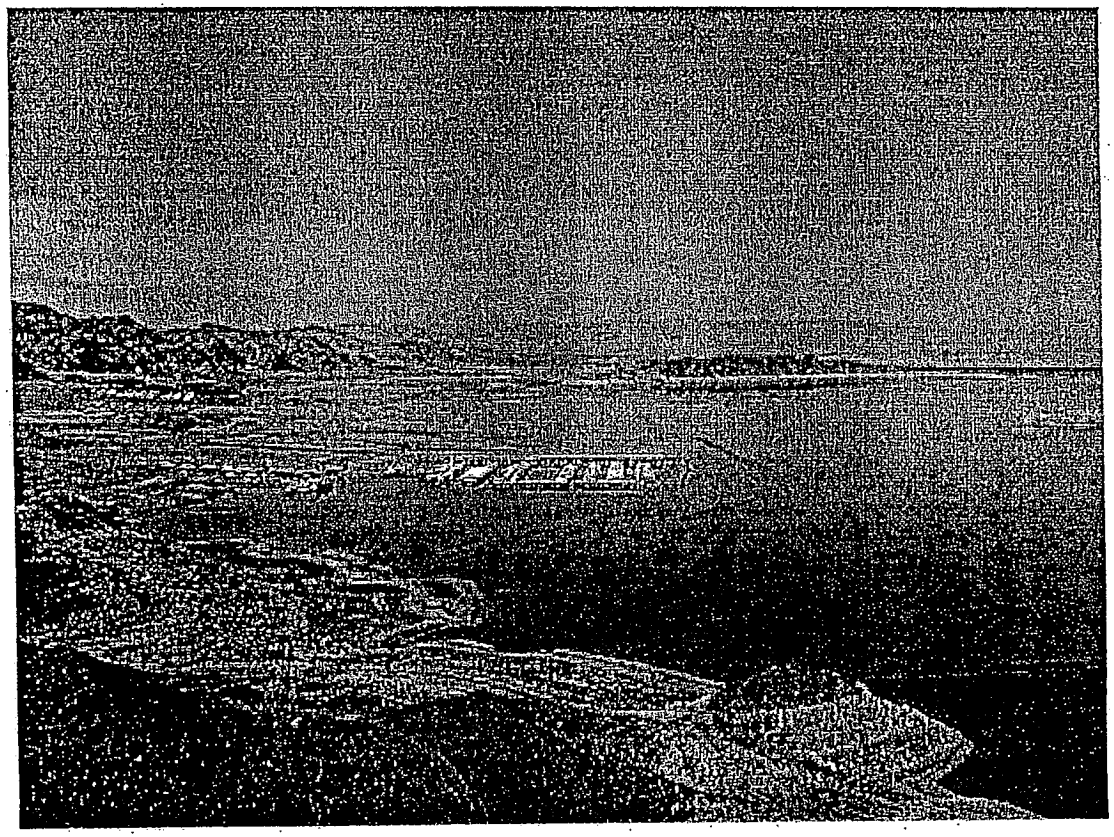
What Castaic Lake Water Agency Does

- Seeks to diversify water sources
- Uses DWR's "State Water Project Delivery Reliability Report" for water supply assessments
- All water managers are born optimists -We do not like saying there are limits

What Happens If The Water Is Not There?

- Look at the Colorado River – who would have thought?
- Cutbacks
- Landscapes
- Jobs and Businesses

... The **drought** that couldn't happen is here." said Ms Mulroy



Could It Happen Here?

February, 1991:

Governor Wilson within days of using Emergency Powers to order across the board 50% cutback in water use statewide – residential, business and agriculture

"March Miracle" bailed California out

What About Possible New Supplies

- 41,000 transfer from Kern County Water Agency not a done deal
- Local groundwater- 6ppb, 4ppb, or 1ppb?
- Perchlorate migrates
- Groundwater banking/conjunctive use

Conjunctive Use

- Can be good way to store water
- Conjunctive use does not create new water
- Need to be aware of potential and existing contaminants in some Central Valley aquifers

What Are You Required To Do ?

Under SB 610, "The city or county *(in this case Santa Clarita)* shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and future planned uses."

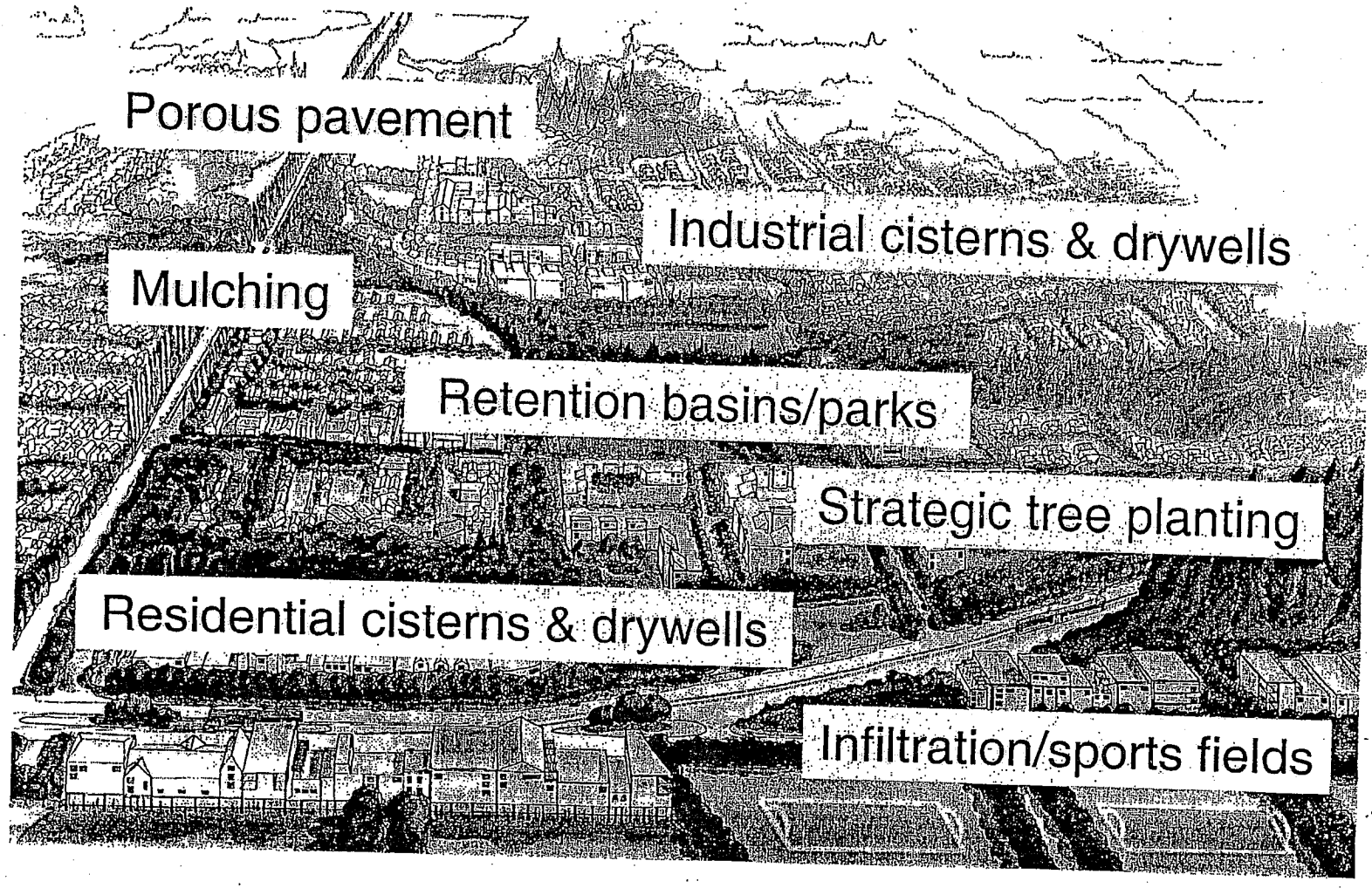
SB 221 Requirement

- Under SB 221 "The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available."

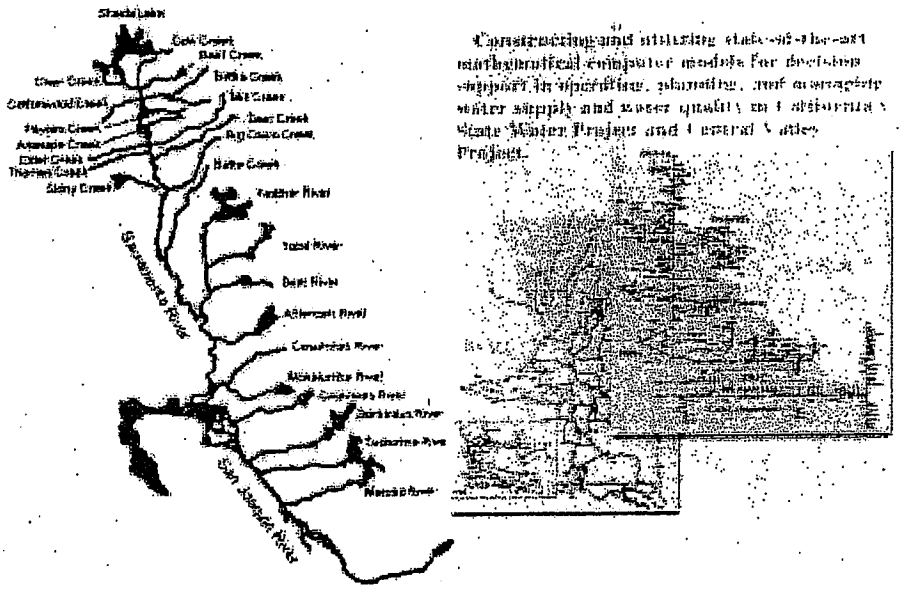
What Santa Clarita Should Do

- For land-use decisions do not assume 41,000 acre-feet are available until final court decision
- Include a margin of safety
- Identify & disclose impacts to existing customers if supplies don't materialize
- Require water efficiency in new growth

A vision for Sun Valley...



A Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California



Submitted to the

California Bay Delta Authority Science Program
Association of Bay Governments
Oakland, California

by

A. Close, W.M. Haneman, J.W. Labadie, D.P. Loucks (Chair),
J.R. Lund, D.C. McKinney, and J.R. Stedinger

December 4, 2003

Executive Summary

1. Summary

The central all-encompassing question put to the panel is whether the CALFED program has adopted an appropriate approach to modeling the CVP-SWP-Central Valley system. Is the general CALSIM modeling approach appropriate for predicting the performance of the general facilities and for use in allocation planning, assessing water supply reliabilities and for carrying out operational studies? We believe the use of an optimization engine for simulating the hydrology and for making allocation decisions is an appropriate approach and is in fact the approach many serious efforts of this kind are using. It is a substantial improvement of the previous modeling approaches and provides a basis for consensus among federal and state interests. The modeling approach addresses many of the complexities of the CVP-SWP system and its water management decisions.

There exists a common tension between those who wish for greater detail and those who want less detail from the model. This argues for a more comprehensive, modular and flexible approach than is now available. In this report we suggest some ways this might be accomplished in the future. We also propose some management procedures that could be considered to improve model and model application quality control and documentation. The openness and availability of the model is admirable and very important given the numerous stakeholders who have interests in the management and allocation of water in the state. To increase the public's confidence in the many components and features of CALSIM II, we suggest that these components of CALSIM be subjected to careful technical peer review by appropriate experts and stakeholders.

2. Background

The California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (USBR) have developed a computer model called CALSIM II that simulates much of the water resources infrastructure in the Central Valley of California and the Delta region. This infrastructure is referred to as the CVP-SWP system. In particular CALSIM II provides quantitative hydrologic-based information to those responsible for planning, managing and operating the State Water Project (SWP) and the federal Central Valley Project (CVP). As the official model of those projects, CALSIM II is the default system model for any inter-regional or statewide analysis of water in the Central Valley of California.

CALSIM II has a central role in the analysis of many CVP-SWP and related issues, some of which require capabilities beyond those included in the model. California needs a large-scale relatively versatile inter-regional operations planning model and CALSIM II currently serves that purpose reasonably well. As the primary State and Federal-sponsored model available for water operations and planning, CALSIM II is critical to the study of many technical and policy issues related to water supply reliability, environmental management and performance, water demands, economics, hydrology and climate, and regulatory compliance.

CALSIM II is a particular application of the California Water Resources Simulation Model called CALSIM. It uses a mixed integer linear programming model solver to route water through a network over time. Currently it uses monthly time steps. Policies and priorities are implemented through the use of user-defined weights applied to the flows in the system (represented by arcs of the network). Simulation cycles at different temporal scales allow for successive implementation of constraints. The model can simulate the operation of relatively complex environmental water accounts and state and federal environmental regulations. In our judgment CALSIM II represents a very impressive modeling effort on the part of all those involved with its development and application.

The CALFED Science Program commissioned this external review panel (Appendix D) to 1) provide an independent analysis and evaluation of the strengths and weaknesses of CALSIM and CALSIM II, and 2) to offer suggestions on the appropriate uses of these modeling tools, on ways their use might complement or be complemented by other models, and on further development, quality assurance, and use in major water systems operations and planning in California.

The panel received background documents (Appendix B), including a survey by the University of California at Davis of stakeholder responses to questions about CALSIM II. We subsequently met for one and a half days in Sacramento for discussions and presentations (Appendix A) by CALFED, DWR and USBR staff. The discussions concluded with a summary presentation by the panel outlining our tentative conclusions.

The information we received and the shortness of our meetings with modeling staff precluded a thorough technical analysis of CALSIM II. We believe such a technical review should be carried out. Only then will users of CALSIM II have some assurance as to the appropriateness of its assumptions and to the quality (accuracy) of its results. By necessity our review is more strategic. It offers some suggestions for establishing a more complete technical peer review, for managing the CALSIM II applications and for ensuring greater quality control over the model and its input data, and for increasing the quality of the model, the precision of its results, and their documentation.

In this review we were asked to address the following questions:

1. Is CALSIM a reasonable modeling approach for current and proposed applications and problems?
2. Do other modeling approaches show similar or greater promise and flexibility for such problems? If so, how?
3. What are the major comparative strengths and weaknesses of the current CALSIM approach and alternative approaches?
4. What are major scientific, technical, and institutional limitations, uncertainties, and impediments for current and proposed applications of CALSIM?
5. What model, software, and data developments, special studies or tests would be beneficial to improve CALSIM for current and proposed uses?
6. How might CALSIM development and applications be managed and overseen to improve the quality assurance of model results for current and proposed applications?

7. What are your suggestions for long-term use, development, or replacement of the current suite of models and data available for the current and proposed uses of CALSIM?

The following sections of this summary present our responses to these questions. The main parts of this report and its appendices provide additional detail.

3. CALSIM Modeling Approach

CALSIM II is a simulation model developed as a joint venture between the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (USBR) to (i) provide a significant modernization and upgrading of the DWRSIM and PROSIM models developed and used by these organizations, (ii) develop a comprehensive modeling system that simultaneously addresses the current and future needs of both the SWP and CVP systems; and (iii) develop a generalized modeling system that could be applied in any river basin system, in contrast with the previous models that were less generalized and more specifically designed for the existing SWP and CVP systems. In this respect, CALSIM II represents a state-of-the-art modeling system that is similar in general concept, while differing in specific details, to other data-driven river basin modeling systems such as ARSP, MODSIM, OASIS, REALM, RiverWare and WEAP.

CALSIM uses linear programming to solve sets of equations that simulate water movement through the CVP-SWP system in accordance with various objectives and constraints. This is a modeling approach which has been used successful in California (Johnson et al., 1991). In a complex system such as that being modeled, it is essential to have some mathematical representation of system flows that reflects all of the interconnections and constraints. Use of an optimization algorithm allows good decisions to be identified from among all possible and feasible decisions. To the extent this simulates what actually occurs, it is a good modeling approach. To the extent it optimizes when in reality no such optimization is implemented, it has the potential to produce inaccurate and overly optimistic outputs.

Most successful applications of optimization that attempt to simulate the behavior of a system have calibrated their objective functions (i.e., set the weights that prioritize flows over time and space) so that the model results correspond to what actually happens or would happen under a particular hydrologic and demand scenario. In these cases the model's decisions correspond to those the operators would make, as often prescribed by rules that have been worked out in a legal/political process. It does not appear that such a calibration of the objective function weights in CALSIM has yet been completed.

4. Other Modeling Approaches

There are two aspects of modeling, the model structure and algorithms used, and the model software. The use of linear optimization algorithms to solve simultaneous equations for simulating hydrology is a common way of avoiding a typically long list of procedural rules for simulating regional water systems. Such sets of procedures can be difficult to generate for

complex systems, and very different and new rule sets may be needed if structural or significant policy changes are to be investigated. In addition the performance of the system when simulated will be less than that which can be achieved in practice if a good set of rules is not provided. Optimization models are generally easier to reformulate when system changes are to be investigated. However unless the optimization is calibrated in such a way as to actually resemble what takes place in practice it can produce an optimistic description of system performance. This is particularly true if the optimization model is allowed to have perfect foresight of future events that in practice would not be available to system operators.

Large simulation models using optimization and procedural rules both need to have internal checks to ensure to the extent possible that errors in mass balances, for example, do not occur due to errors made when the model is being defined or created. Such internal checking is not apparent to us in our admittedly brief review of CALSIM II. Nor were calibration procedures well defined.

One obvious limitation of using linear optimization procedures is its inability to model accurately and efficiently some of the non-linear hydrologic and decision processes that occur in systems as complex as the CVP-SWP. One approach to addressing this issue of model accuracy, and possibly for decreasing the computational time as well, is to link linear optimization models to non-linear simulation models in a way that permits the simulation to represent the hydrology in any spatial and temporal detail desired. The optimization is used to determine what the decisions should be at every site where a water allocation, reservoir release, or other management decisions must be made. The time steps for simulation could be daily, or weekly or longer, depending on the needs of the user, but would likely be of shorter durations than the optimization time steps. After a predetermined number of simulation time steps, the optimization model would be run. The initial state of the optimization should be set at the beginning of each optimization time step. The optimization component should include multiple future time periods, with imperfect hydrologic and demand forecasts, but once solved only the current period's solutions are implemented – i.e., these decision variable values are sent to the simulation component. The decisions indicated for future periods are ignored. When appropriate, the initial state of the multi-period optimization model is updated and the model is again solved. And so on. Such a modeling approach may prove to be both more realistic, more accurate, and require less time, once developed. We believe such an approach might be worth considering for future development.

CALSIM II currently consists of a combination of software modules developed in several languages, including FORTRAN, Java and C. Several of the modules require proprietary software packages in order to run CALSIM II (Lahey FORTRAN and XA Solver). DWR and USBR staff have said that these components are being replaced by public domain software that can be obtained free of charge. We agree with this decision. Very good public domain software packages of optimization, visualization, file management, and data base support are currently available, and new ones will continually be produced. Periodic updates should be anticipated as part of the business of maintaining the modeling system.

Significant thought should be given to the sustainability of the CALSIM II software. How will future programmers be able to maintain this software? How will future software developments

be incorporated into the system? Will the solver currently being developed by LBNL be adequate in terms of accuracy and computation speed? Will other solvers need to be tested? Can the system accommodate these future developments without major modifications? What reasonable modifications could be made now in anticipate of future developments?

5. Comparative Strengths and Weaknesses

Many of the stakeholder perceived strengths and weaknesses of CALSIM and CALSIM II are very well identified in the survey report from the University of California at Davis (Ferreira, et al. 2003). Our background materials and briefings covered various strengths and weaknesses, but without first hand experience, all we can do here is to summarize those that we have heard expressed by others.

Here we provide a brief summary list.

5.1 Some Prominent Strengths

The strengths of CALSIM II are many. Most are expressed in comparison to previous DWRSIM and PROSIM models DWR and USBR were using. Some of these strengths include:

- Consensus model. CALSIM II is the official joint modeling environment of the State DWR and USBR. This includes a common schematic, hydrologic representation of the system, common set of facility capacities, and common representation of system operating policies. This helps all parties improve representations, rather than compete over representations.

- Common effort. The joint development of CALSIM II by USBR and DWR has provided more focused and effective use of resources and expertise than previous development of agency-specific models. CALSIM II development has also involved other agencies and consulting expertise more than pervious models of this system.

- Data-driven model. CALSIM II is a rather data-driven simulation model with an optimization engine. This modeling approach provides:
  a. greater flexibility than its predecessors and traditional water resources simulation approaches.
  b. a promising framework for improving transparency, data, and model documentation, compared to other approaches.

- Public domain. The model and data are substantially in the public domain, facilitating transparency and adaptability for California's decentralized water system.

- Steady improvements. Data improvements have been steadily pursued following the adoption of CALSIM II, although deficiencies remain.

- Improved Delta water quality representation. Although problems appear to remain, the model developers have made substantial gains in representing Delta water quality operating criteria and performance.

- Better groundwater representation. Efforts to better include groundwater and non-CVP-SWP project operations merit continuation and expansion.

- Benchmark Studies. The development of documented benchmark studies have resulted in significant model improvements and aided in the development of comparative model applications. Such exercises should be continued and improved.

- Long-term vision. The vision of a more transparent and publicly available model that can be employed by those outside the major agencies is excellent. This is a major change in direction, and achieving this vision will require adjustments over time. Often, these adjustments will be externally driven. Externally-driven improvements are a price of success and evidence of success for an open, public, modeling policy.

- Important CALSIM II features:
  a. CALSIM II is able to simulate the operation of the complete CVP-SWP system in all areas that contribute flow to the Delta in monthly time-steps.
  b. CALSIM II is being applied to examine a diverse range of options including flood control, water conservation and supply, power generation, recreation, water transfers, groundwater banking, recycling, desalination, conjunctive use, the purchase of options and streamflow and water quality protection.
  c. CALSIM II has successfully been applied by both DWR and USBR to examine both structural and non-structural changes to the CVP-SWP system as well as to ascertain the risks involved with different potential operating scenarios and to quantify the impacts of proposed actions.
  d. CALSIM II can dynamically model operation of environmental water accounts.
  e. Demands may vary according to various levels of development (e.g. 2001, 2020) and to hydrologic conditions.
  f. The regulatory environment under which the projects must operate can be simulated.
  g. CALSIM II can link to external modules as needed, e.g., to estimate the salinity at water quality stations within the Delta.

5.2 Some prominent weaknesses

As its strengths are many, so are its weaknesses. It seems worth saying, however, that no model can perfectly (meaning efficiently and effectively) serve all interests in a system as complex as the CVP-SWP. Tradeoffs need to be made. This can result in what some would call weaknesses. Such weaknesses are often accepted to gain strengths in another ways.

We heard that the CALSIM II model was too complex. We also heard that it did not handle particular components of the system with sufficient detail. And such is the dilemma of any

complex model, such as CALSIM II. The model is clearly too complex, and not complex enough. The root of this difficulty is that when such a model is constructed, it is not clear what level of detail is needed, so the model must be made sufficiently complex to ensure it is complex enough. And the complexity needed to address some issues will remain in the model when it is used to address other less complex issues, or the same issues at less complex locations. One approach to addressing this issue is to develop different linkable modules of CALSIM II having different complexities. In this way the level of detail can be varied to be consistent the application or study at hand, and level of sophistication and resources available to the user.

Other weaknesses model users would like addressed include:

- The model provides limited and inadequate coverage of non CVP or SWP water and of the California water system south of the Delta.
- The model assumes that facilities, land-use, water supply contracts and regulatory requirements are constant over this period, representing a fixed level of development rather than one that varies in response to hydrologic conditions or changes over time.
- Groundwater has only limited representation in CALSIM II.
- Groundwater resources are assumed infinite, i.e., there is no upper limit to groundwater pumping.
- The linear programming model considers only the current month, and hence CALSIM II operating rules are required to determine annual water allocations, to establish reservoir carryover storage targets, and to trigger transfers from north of Delta to south of Delta storage.
- Better quality control is needed both for the model and its current version and the input data. Procedures for model calibration and verification are also needed. Currently many users are not sure of the accuracy of the results. A sensitivity and uncertainty prediction capability and analysis is needed.
- Need improved ways of altering the model's geographic scope and resolution and its temporal resolution to better meet the needs of various analyses and studies.
- Need to improve the model's comparative as well as absolute (or predictive) capabilities.
- CALSIM II needs better capabilities for analyzing economic, water quality, and groundwater issues.
- Need improved documentation explaining how the model works, its assumptions, its limitations, and its applicability to various planning and management issues.
- DWR and USBR have not provided a centralized source of support for CALSIM II. More training for CALSIM II is needed. There is a need for more people who can run CALSIM II. There is a need for a well-publicized user group. A more extensive users' guide is needed.
- Improved capabilities are needed for real-time operations especially during droughts, gaming involving stakeholders during a simulation run, handling of evapotranspiration and agriculture demand changes over time, water transfers, Delta storage, carryover contract rights, refuge water demands and more up to date representation of Feather River, Stanislaus River, Upper American River, San Joaquin River and Yuba River operations.

- Need an improved graphical user interface to facilitate input of model data, setting of model constraints and weights, operating the model, and displaying and post analysis of model results.
- Need to be able to change the model time period durations for improved accuracy of model results.

6. Limitations, Uncertainties, and Impediments

6.1 Absolute Values or Comparative Results

Modelers sometimes make a distinction between the use of a model for *absolute* versus *comparative* analyses. In an absolute analysis one runs the model once to predict an outcome. In a comparative analysis, one runs the model twice, once as a baseline and the other with some specific change, in order to assess change in outcome due to the given change in model input configuration. The suggestion is that, while the model might not generate a highly reliable absolute prediction because of errors in model specification and/or estimation, nevertheless it might produce a reasonably reliable estimate of the relative change in outcome. The panel is somewhat skeptical of this notion because it relies on the assumption that the model errors which render an absolute forecast unreliable are sufficiently independent of, or orthogonal to, the change being modeled that they do not similarly affect the forecast of change in outcome; they mostly cancel out. This feature of the model is something that would need to be documented rather than merely assumed.

In our opinion CALSIM II has not yet been calibrated or validated for making absolute predictions values. Yet it is apparent that there has been a distinct need by model users for absolute predictions. In the absence of alternatives, users are adopting CALSIM II results as the best absolute prediction available and they are likely to continue to do so. We recommend that model developers recognize the requirement for CALSIM II to provide absolute predictions. To satisfy this new purpose, additional calibration of the model will be required to ensure that the output it produces is fit for this purpose. Regardless of how possible it is to match the model closely with observed behavior, statistics on the accuracy of the calibration run should be supplied to users to enable them to gauge the likely errors involved with using the model output.

6.2 Sensitivity and Uncertainty Analyses

Sensitivity analyses would be useful to identify which parameters and input data have major impacts on decisions and system performance criteria of concern. Uncertainty analyses would help users of the model understand better the risks of various decisions and the confidence they can have in various predictions.

6.3 Graphical User Interface

Having a graphical user interface would substantially aid those who use the model in managing both input and output data, and in controlling or managing model operations. This model will not likely become as available to and as well understood by the public, to the extent desired by the model developers, until an effective menu-driven GUI has been created that can help create and draw from a database of system parameters and characteristics, and simulation results.

6.4 Documentation and Training

When if ever is adequate documentation and training available? Rarely, but we believe there is a serious need to improve the documentation as well as the training available for all those interested in using CALSIM II.

7. Options for Improving CALSIM

7.1 CALSIM Model Software

We encourage the developers of CALSIM to convert their present software to that which is publicly available and to develop a useful graphic based user interface that can facilitate the input, editing, and display of all the data that are input to and output from CALSIM II. There are many options, some of which we have discussed with the model developers.

The CALSIM package should be made more modular and capable of linking to other more complex models of components of the CVP-SWP system. If the changes in code and modeling approach result in a quicker running model, it might be possible to link, when desired, modules that facilitate position analyses and other types of uncertainty analyses. A modular system would allow alternative representations of different components of the system. Thus different levels of spatial detail, or representations of the fundamental processes, would be allowed within the overall system representation and record of California hydrology. This will allow the use of more general and streamlined models for use of preliminary investigation and general planning, as well as a more detailed representation of the system for final analyses and more detailed studies. This would be very useful.

7.2 Sensitivity and uncertainty analyses

Both sensitivity analyses need to be performed, and procedures need to be developed to enable the estimation of measures of uncertainty associated with model output. Perhaps workshops focused on just these needs should be scheduled to better determine how best to meet these needs. There are numerous procedures available that could be applied. Appendix H contains some approaches for performing sensitivity and uncertainty analyses.

7.3 Model calibration

There is a need to develop the model so that it is able to provide absolute estimates of key model outputs rather than limiting the use of the model to comparative studies. One way to do this is to subject the model to a comprehensive calibration process where it is fine-tuned until it is able to reproduce the historical behavior of the system with sufficient accuracy to provide absolute results. The calibration of the model should aim to test all the key outputs of model including water quality in the San Joaquin River and in the Delta. It is necessary to test the monthly values of outputs for those outputs for which the monthly pattern is important.

7.4 Other extensions and improvements

- The opportunity of improving the collection of data on the use of water (preferably broken down by irrigation district and water source) should be investigated. The use of groundwater should be included in this investigation.
- It would be useful to expand the geographic extent of the model so that it includes all the components of the linked water supply system, including both the San Joaquin and Tulare Lake Basins of the Central Valley. The model should also account in some manner for imported supplies of water to users in southern California from the Colorado River.
- The linkage between surface water and groundwater would appear to be of critical importance and output that would enable the impact of surface water use on groundwater extractions would appear to be useful.
- Examination of the report *'CALSIM II Simulation of Historical SWP/CVP Operations'*, DWR (2003) indicates that the current formulation of CALSIM II:
  - Overestimates water deliveries to SWP and CVP contractors,
  - Determines carryover storage target values that differ from those the operators have determined in the past, and
  - Operates the San Luis Reservoir at lower levels and fills it later in the season than operators have in the past.

8. Managing CALSIM Development and Applications

The predicted impacts and other information derived from CALSIM II applied to the CVP and SWP can influence major investment decisions. It is thus self evident that those who use the model results need to have some confidence as to their precision. Is the science behind the information derived from CALSIM II been reviewed and judged correct? Is the model software free from errors? Are the assumptions made when performing the modeling the correct ones? Are the model results accurately and fully reported? In other words, just how much credence should decision makers place in the model output? Users of the model results should be assured that they are credible and unbiased. One way to help ensure this is to have the models, their associated software, and their applications under the control of some interagency organization that can oversee and provide quality control over model development, application and documentation. They can also plan and implement needed peer reviews.

One possible means of facilitating the peer review processes and for maintaining control on the particular versions of CALSIM II and accompanying models used for CVP-SWP planning and management decisions is to create an interagency modeling consortium (IMC) consisting of DWR, USBR, and other stakeholder organization (including university) personnel if they are interested and want to participate. This center would be responsible for maintaining a toolbox of 'acceptable' models for use by the agencies and contractors. The models placed in the toolbox should be peer reviewed with respect to their applicability and suitability for use in particular applications. Those that are not peer reviewed should be considered for peer review. New models proposed for use in California should be peer reviewed with respect to their suitability, and for their strengths and limitations, before being placed in the toolbox. The review should be of the theory underlying the model, the model's software, the documentation of the model as well as of its software, the model's functions and capabilities including those pertaining to model data input and output, the input data themselves, model calibration and verification, capabilities for sensitivity and uncertainty analyses, user control of all model operations including pre and post analyses (GUIs), spatial and temporal resolutions, and its limiting assumptions.

9. Future Use, Development, or Replacement of CALSIM

9.1 A coupled optimization simulation approach

Given a system as complex as the SWP/CVP system, it seems to us it might make sense to consider the development of a more detailed simulation 'engine' and couple it to an optimization or management 'engine'. The simulation component can more accurately model hydrologic processes. For example it can include the deterministic non-linear routing of flows and their quality constituents through the system on a smaller time step (e.g., daily) and hence much more realistically or accurately, than can linear optimization using longer time steps, even with all the known tricks for linearizing separable (single variable) non-linear functions and 'if-then-else' statements. The simulation engine itself may require a simultaneous equation solver, especially for the Delta. But the simulation engine needs to know what to do, i.e., what decisions to make. Periodic use of the optimization, say once a week or even less frequently if conditions are relatively constant, for determining the decisions to be simulated, e.g., the water allocation and reservoir release decisions, eliminates much of the maze of rules that otherwise would be required and which developers of CALSIM II are avoiding through the use of optimization. Each time the optimization or management 'engine' is run it is first updated with the current state of the system as determined from the more precise simulation 'engine'. The optimization component would include multiple time periods only to the extent that the current period's solution is not affected by the time horizon in the optimization. The other time period solutions are ignored. This coupled optimization-simulation approach has the potential to be both more accurate as well as quicker to execute. In our opinion it is worth considering for future development.

9.2 Models as hypotheses

CALSIM II is really about the future, not the past. Benchmarking studies can help establish the credibility of the model and provide estimates of its accuracy by comparing its performance to actual historical operations. A concern is how well the model reproduces historical operations, not whether it is valid or invalid on some absolute scale of perfection. But the real issue is how well CALSIM can predict what might happen in the future with sets of hydrological and meteorological conditions that have not yet been experienced, and may be significantly different from the past if climate variability and climate change are considered. In these cases the ability of the model to forecast what will happen depends both upon its ability to describe what would happen should a particular system operating policy, priorities and water demands be adopted. In this sense CALSIM II modeling studies should be thought of as the exploration of a hypothesis that particular policies and priorities have been adopted. Our ability to predict the future has generally been poor, but it is the obligation of agencies such as DWR and USBR to attempt to ensure that should water demands, water supplies, and water policies evolve as one would expect, society is prepared for the consequences. And that would seem to be what CALSIM II is about.

9.3 Future Model Development and Use

From the list of perceived weaknesses above, there are clearly many opportunities for further refinement of CALSIM II. Rather than attempt to meet all needs using only one model, namely CALSIM II, it seems preferable to improve its adaptability to various levels of detail through its ability to link to other models when additional detail in a particular region or for a particular feature is desired. For example, the monthly time step used by CALSIM II is sufficient for many studies. Yet some seasonal (multi-month) decision making is needed in CALSIM II to reflect decisions made by the SWP and CVP as to what Table A and other allocations to honor in full. On the other hand, it is clear that many water quality and ecosystem management decisions would profit from more detailed weekly or daily time steps. However, such shorted time-step models will need the guidance of a longer time-step model. As discussed earlier, models with shorter time scales can require increased spatial resolution, both of which lead to increased model complexity and a strong argument for model modularity.

Additional potential applications of CALSIM II include operational planning using gaming, or the involvement of potential decision makers during the simulation runs via a well developed graphical user interface, and to improve the capability of modeling water quality, energy production, conjunctive groundwater and surface water interactions and use, to mention a few.

There will always be a need to perform alternative 'what if' policy analyses where a relatively fast model that also provides some capability for uncertainty analyses is required. Perhaps CALSIM II will never be able to serve this need, and if so another more simplified modeling approach could be developed to fill that need. This simpler screening tool would be calibrated to produce results comparable to those of CALSIM II or observed data. Is this possible? We can not be certain but feel the idea should be seriously considered.

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Caveat

Just as all models are approximations of reality, so may all advice be an approximation of what it should be. We hope what we have written in this report is correct and useful, but encourage CALSIM model managers and California's water community to take our assessments and suggestions for what they are, arrived at based on our own experiences and some limited exposure to those who know much more about CALSIM and CALSIM II than we do.

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1. CALSIM Compared to Other Modeling Approaches

Management of complex systems such as coordination of the California State Water Project (SWP) and the Federal Central Valley Project (CVP) requires effective decision support tools for simulating and analyzing system components in a fully integrated manner. The classic definition of a decision support system (DSS) provided by Sprague and Carlson (1982) is *"an interactive computer-based support system that helps decision makers utilize data and models to solve unstructured problems."*

A DSS integrates the following interactive subsystems: (i) dialog generation and management subsystem (DGMS) for managing the interface between the user and the system; (ii) data base management subsystem (DBMS); and (iii) model base management subsystem (MBMS).

CALSIM II is a DSS developed as a joint venture between the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Bureau) to (i) provide a significant modernization and upgrading of the previous models DWRSIM and PROSIM employed by these organizations, (ii) develop a comprehensive modeling system that simultaneously addresses the current and future needs of both the SWP and CVP; and (iii) develop a generalized modeling system that could be applied in any river basin system, in contrast with the previous models that were less generalized and more specifically designed for the SWP and CVP. In this respect, CALSIM II represents a state-of-the-art modeling system that is similar in general concept, while differing in specific details, to other river basin modeling systems such as AQUATOOL (Valencia Polytechnic University, Spain), ARSP (Acres Reservoir Simulation Program) (Boss International, 2003), IRAS (Interactive River-Aquifer Simulation) (Loucks, et al. 1996), MIKE BASIN (Danish Hydrologic Institute, 2002), MODSIM (Labadie and Larson, 2000), OASIS (Randall, et al., 1997), RAISON (Young, et al. 2000), ResSim (U.S. Army Corps of Engineers, Hydrologic Engineering Center), Ribasim (River BAsin SIMulation Model) (Delft Hydraulics, Netherlands), REALM (REsource ALlocation Model) (James, 2003), RiverWare (Zagona, et al. 1998), WaterWare (Jamieson and Fedra, 1996), and WEAP (Water Evaluation and Planning System, 2003) (Hansen, 1994). All of these can be categorized as decision support systems since all three subsystems of a DSS are embodied within them.

A distinguishing feature of several of these modeling systems is the use of optimization on a period by period basis (not fully dynamic) to "simulate" the allocation of water under various prioritization schemes, such as water rights, without the presumption of perfect foreknowledge of future hydrology and other uncertain information. This is a valid approach since use of optimization overcomes the disadvantage of employing numerous, unwieldy prescriptive rules governing water allocation. Systems employing optimization in this manner include: ARSP, MODSIM, OASIS, REALM, RiverWare, and WEAP and are therefore more akin to CALSIM II. ARSP, MODSIM, REALM and Ribasim are further distinguished by use of specialized minimum cost network flow optimization algorithms, although of these only MODSIM includes iterative structures using an imbedded scripting language for including non-network "side constraints" in the optimization. The other modeling systems are essentially limited to a

pure network structure that does not allow inclusion of all the complex, non-network type constraints necessary to model the complex CVP-SWP system.

It may be useful to compare this use of optimization with some other uses that have appeared in the modeling literature. One use of optimization is purely for computational convenience; in this case optimization is employed as a numerical method for obtaining the solution of a series of simultaneous (often linear) equations. This approach, which was used in the first generation of computational economic models about forty years ago, exploited the fact that some existing computational algorithms for solving optimization problems were faster than those for solving large systems of simultaneous equations. A second use of optimization applies when the solution of the system of equations characterizing a water balance has multiple possible solutions; this is essentially the case described above, where optimization is being used primarily to identify a unique solution for a system of equations. Both of these uses of optimization are primarily descriptive rather than prescriptive (also referred to as positive vs. normative) in intent: the goal is to model how a system, characterized by a set of equations, operates. To the extent that the real–world managers of the system do optimize some objective function, the aim is to mimic their behavior by setting up and solving a similar optimization. But, the goal is to model what they actually do, not to advise them what they ought to do. The third use of optimization adopts an explicitly prescriptive goal and sets out to ascertain what managers ought to do if they wished to optimize some objective function (e.g. maximize economic efficiency). While this is certainly a legitimate analytical exercise, it should be kept conceptually distinct from the use of optimization in a purely descriptive context.

1.1 Advantages of Optimization-Driven Simulation

For large, complex, integrated systems, simulation models that optimize operation and allocation of water within each time-step by operational priorities have become the major simulation approach. Models of similar approach include ACRES (Acres Engineering), AQUATOOL (Spain), MODSIM (Colorado State U.), OASIS (Hydrologics, Inc.), WASP (Australia), and WEAP (Tellus Institute). Priority-based simulation models with optimization engines have become widespread in part because:

- The models are simpler to develop, comprehend, and modify.
- Their software is easier to upgrade, since the data set describing the system and its operating policies is substantially separate from the software code.
- Data are easier to update and modify, since changes require little or no software changes.
- Priority-based operations are a common basis for water rights and operating policies.
- Priority-based operations are relatively easy to explain.

The major exception to this technological trend in simulation modeling is to use more traditional procedural operating rules in simulation models with a graphical user interface for primarily flood control operations (HEC-RESSIM) or for exploratory study of large systems or detailed management of relatively small systems (Stella-type models).

Similar to several of these systems, CALSIM II allows specification of objectives and constraints in strategic planning and operations without the need for reprogramming of

complex models. The CALSIM II authors developed the English-like WRESL (Water Resources Engineering Simulation Language) as an intuitive means of defining the objective function and constraints for a mixed-integer linear programming model, similar to the OCL (Operational Control Language) used in OASIS and the Policy Editor employed in RiverWare. In MODSIM, the optimization model is formulated directly through the graphical user interface with no need for a modeling language, but with supplemental features of the optimization defined through the PERL scripting language. WRESL allows planners and operators to specify targets, objectives, guidelines, constraints, and their associated priorities, in ways familiar to them. WRESL provides simple text file output that is converted to FORTRAN 90 code by a parser-interpreter program, whereas PERL is fully embedded in the network optimization code. Both modeling systems are data centered, meaning that model operation is controlled solely by user specification of input data rather than hidden rules or hard-wired data structures.

CALSIM II, OASIS, RiverWare and MODSIM are similar in that all use a high level language with syntax and logical operators; are written to simple text files which are subsequently parsed and interpreted; use rule-based or IF-THEN-ELSE conditional structures; are designed to be easy for planners and operators to use without the need for reprogramming; allow adaptive and conditional rules which are dependent on current system state variable information; include constructs for assigning targets, guidelines and constraints, along with their associated priorities; and include a goal seeking capability. CALSIM employs a mixed integer linear programming solver for repeated period by period solution that is less efficient computationally than the network solver employed in MODSIM, ARSP, REALM and Ribasim.

Unfortunately, unlike these aforementioned modeling systems, CALSIM lacks a comprehensive graphical user interface for constructing and editing the river basin system topology. CALSIM II would be greatly enhanced if, similar to RiverWare, IRAS, and MODSIM, objects representing features of the basin such as reservoirs, canals, and river reaches, could be created on the palette of a graphical user interface by simply clicking and dragging various icons for the objects to the display. The objects are instances of various classes that share certain common characteristics, and each object contains its own physical process methods and associated data. We believe that complaints concerning the complexity of using CALSIM II would be greatly reduced with development of such an object-oriented graphical user interface.

2. Comparative Strengths and Weaknesses

2.1 Some Prominent Strengths

CALSIM II has important strengths as a general inter-regional operations planning model, particularly compared with available alternatives and its predecessors. The primary strengths include:

- Coordination of Federal and State Interests A unique aspect of CALSIM II is the high degree of cooperation between Federal (i.e., U.S. Bureau of Reclamation) and State (i.e.,

California Department of Water Resources) interests in its development. This kind of cooperation is rare, and in fact this may be the only such example of such coordination for a system of this scale and complexity. Although it is clear that DWR staff have taken the greatest degree of responsibility in the planning, development, coding, testing and application of CALSIM II, it is also clear that USBR staff have also played an important role. CALSIM II can provide a showcase for other states as to what can be accomplished with Federal and State cooperation for river basin management.

- Consensus model. CALSIM II is the official joint modeling environment of the State and USBR. This includes a common schematic, hydrologic representation of the system, common set of facility capacities, and common representation of system operating policies. This saves a lot of unproductive bickering and helps all parties improve representations, rather than compete over representations.

- Common effort. The joint development of CALSIM II by USBR and DWR has provided more focused and effective use of resources and expertise than previous development of agency-specific models. CALSIM II development has also involved other agencies and consulting expertise more than pervious models of this system.

- Data-driven model. CALSIM II is a rather data-driven simulation model with an optimization engine. This modeling approach provides:

    a. much greater flexibility than its predecessors and traditional water resources simulation approaches.
    b. a promising framework for improving transparency, data, and model documentation, compared to other approaches.

- Public domain. The model and data are substantially in the public domain, facilitating transparency and adaptability for California's decentralized water system. Ongoing software development efforts will improve CALSIM in this regard.

- Steady improvements. Data improvements have been steadily pursued following the adoption of CALSIM II, although deficiencies remain widespread.

- Improved Delta water quality representation. Although problems appear to remain, the model developers have made substantial gains in representing Delta water quality operating criteria and performance.

- Better groundwater representation. Efforts to better include groundwater and non-CVP-SWP project operations are good efforts in the right direction, and merit continuation and expansion.

- Benchmark Studies. The development of documented benchmark studies seems to have resulted in significant model improvements and aided in the development of comparative model applications. Such exercises should be continued and improved.

- Long-term vision. The vision of a more transparent and publicly available model that can be employed by those outside the major agencies is excellent. This is a major change in direction, and achieving this vision will require adjustments over time. Often, these adjustments will be externally driven. Externally-driven improvements are a price of success and evidence of success for modeling policy that is open and public.

Few, if any, modeling organizations in the country have consistently done as good a job on model development and application for such a large, complex, and controversial system as the modeling group which developed CALSIM II. They are to be commended for their work to take California water modeling beyond past "closed shop" practices in favor of the development and dissemination of modeling capabilities that are more relevant to California's current water management problems. Most areas and suggestions for improvement noted below are meant to aid the model developers in moving further and faster in the direction they are already heading.

2.2 Some Prominent Weaknesses

The strengths and weaknesses of CALSIM II are not only technical (software, data, and methods), but also are institutional regarding how this model has been developed and employed. The administrative setting and objectives of model development and application are important, and difficult to manage. Alas, the management/policy problems of a system change frequently, while data and modeling capability change more slowly, and effective administrative structures change very slowly, if at all.

- Inadequate data development and management are principal shortcomings of CALSIM II. There has not been a sufficiently systematic, transparent, and accessible approach to the development and use of hydrologic, water demand, capacity, and operational data for CALSIM II. This problem extends beyond inadequate documentation and has led to controversy, confusion, and inefficiency in application of CALSIM II.
    a. Inadequate data management steepens the unavoidably difficult learning curve inherent for a complex system. Data have mostly been considered a "back room" activity of a few experienced experts. Retirement, promotion, or departure of these experts has left many gaps in knowledge and created difficulties for re-developing data for newer policy and planning problems.
    b. The administration of data development is fragmented, disintegrated, and lacks a coherent technical or administrative framework. Data required by CALSIM II are developed by several administrative units, without systematic technical vision or quality control for modeling purposes. Within DWR, different groups develop hydrologic and water demand data under different Deputy Directors, without effective coordination. This division must be overcome for a coherent data and analytical framework to be developed and implemented.
    c. In many cases it appears that water use and other hydrologic data inputs to CALSIM II are based on data collection and analyses that took place during the 1960s when DWRSIM and PROSIM were being constructed. It is important to ensure that data used for CALSIM II are up-to-date and consistent with the best current information

- The expertise and insights of many in local agencies, system operators, and consulting firms have not been prominent in the development of CALSIM II. For such a system with many hundreds of local experts, this is somewhat unavoidable, especially early in model development. Periodic re-examinations of how each area in CALSIM II is represented, in consultation with local agency and consulting experts, might overcome these technical shortcomings, and create and maintain a broader technical, user, and credibility base for CALSIM II. Active involvement of local agencies in CALSIM II development and applications would be much easier with better data management, and would be rewarded with a broader base of CALSIM II expertise and enhanced model credibility.

- Compared to the current CALSIM II, any central operations planning model for California water management should be:
  a. Expanded in geographic scope to include major non-CVP-SWP areas, especially the Tulare Basin, the Colorado River, and southern California. Operations and demands in these regions seem increasingly important for CVP and SWP operations, and are important for the integrated operations of California's major local and regional water management agencies.
  b. Expanded in management scope to include local management options such as water conservation, reuse, water transfers, groundwater and conjunctive use management, etc. These additional water management options are important for local, regional, and statewide water policy, planning, and management efforts and can have significant effects on CVP and SWP water demands.
  c. Made regionally modular, so smaller regional models can be run independently and tested locally, with boundary conditions consistent with the larger model.
  d. Made modular in terms of hydrologic, water management, and water demand processes, allowing better development, comparison, and updating of hydrologic and water demand process models. Agricultural, urban, environmental, and other water demands should be represented more directly, and explicitly. Groundwater should be represented and operated more explicitly. Land use based local hydrology and water demand approaches might be implemented in such standardized modules.
  e. Subject to a systematic model and data testing regime and continuous quality improvement program. As the problems of California water change, different and greater demands will be placed on analytical capability, requiring an essentially continuous testing, re-testing, and improvement of data and models. This might parallel a continuous review of local representations and data involving local agency and consulting experts.
  f. Financed on a broader base, by more than the CVP and SWP projects. Increasing use of CALSIM II is being made by local, regional, State, and Federal agencies interested in developing bilateral or multi-lateral water transfers or projects, which incidentally involve the CVP and SWP. To develop inter-regional modeling capability needed to integrate these activities at local, regional, and inter-regional scales, more sustained funding and involvement from local and regional agencies is needed. In effect, local and regional agencies have been "free riders" on CALSIM

II's analytical capabilities, and it is not necessarily a good bargain for them. Everyone should benefit from broader technical and financial participation.

g. Capable of analyzing a wide range of scenarios. More capability is needed to examine various long-term scenarios with respect to hydrologic, water demand, and operational uncertainties in the future. There also needs to be a better capacity to accommodate other approaches to representing hydrologic uncertainty and variability besides simply simulating 70-plus years of record.

- Input data and its development. Important aspects of CALSIM II rest upon the representations of other models of Delta hydrodynamics and water quality, water demands, and groundwater. The credibility of CALSIM II also rests on testing these models that send important data/representations to CALSIM II, and documenting them adequately. These models include:
  a. CU Model and SIMETAW: The consumptive use model and the newer SIMETAW model, used to develop hydrologic inputs and estimate return flows, also require testing and more explicit documentation. The underlying data for these models also need more systematic, standardized, and transparent treatment.
  b. DSM2: Representation of the Sacramento-San Joaquin Delta will always be important and prone to controversy, given the prominent importance of Delta flows and water quality for the operation and planning of California's water system. The difficulties of representing the Delta in operations and planning models are compounded by the tidal nature of the Delta, which usually implies a need for shorter time-steps. Representation of Delta water quality constraints currently falls heavily on an ANN method within CALSIM II. This ANN is calibrated (trained) based on a hydrodynamics model, DSM2. Thus, controversies regarding Delta representation in CALSIM II are likely to lead to questions of the adequacy of DSM2. The transparency and testing procedures valuable for establishing the credibility and limitations of a Central Valley operations model would also seem to apply to DSM2, or any other Delta hydrodynamics-water quality model. Tests of methods used to represent small-time step phenomena with larger time-steps (e.g., "partial month standards") should be tested in a forum that would give the approach credibility and where its limits could be developed, discussed, and documented.
  c. CVPM/CALAG/LCPSIM/IWR-MAIN: Representations of water demands in CALSIM II rely heavily on other models, particularly CVPM and eventually CALAG for agricultural water demands and LCPSIM and eventually IWR-MAIN for urban water demands. Thus, these models also will attract attention, and will probably require the same types of testing, transparency, and documentation suggested for DSM2 and CALSIM II. Many water contractors of the CVP and SWP also have internal water sources (groundwater, water conservation, and water reuse) and side contracts with other agencies to supply water that can increase or decrease (at different times) their water demands from the CVP and SWP contracts and from the demands estimated from CALAG and IWR-MAIN types of models.
  d. IGSM /CVGSM: Water users in California rely on groundwater as a water source and as the major source of over-year drought storage. Groundwater is also being increasingly used and looked-towards as a source of storage as part of conjunctive use schemes, and water transfer and market schemes. Thus, representation of

groundwater in the system is important, and probably should be expanded considerably. The representation of groundwater quantities, storage, and recharge and pumping capability will also attract attention from interested and critical parties. Thus, the IGSM/CVGSM modeling efforts of DWR and USBR should include the same types of transparency, documentation, and testing suggested for CALSIM II.

e. Agricultural demands: Agricultural demands in the model are estimated by an external modeling system (CU model). Staff noted that the estimation methods being used are include out of date information on agricultural cropping patterns and irrigation technology, both of which result in inaccurate estimates of agricultural water demands. This estimation process needs to be revised and updated to include current information on an ongoing basis. The methodology needs to be improved to include economic factors in the estimation of cropping decisions and water demands. In many case, the preferred spatial scale for the economic modeling of agricultural water demand is going to be the individual irrigation district rather than very broad areas containing multiple quite heterogeneous districts.

- CALSIM II is currently awkward to apply for broader State and CVP-SWP policy questions. Practically, the time needed to complete analyses is too long and CALSIM II does not explicitly represent many of the management options which policy makers are interested in investigating, evaluating, and orchestrating.

- More CALSIM II modelers are needed. Many water managers and policy makers across California look to CALSIM II for many purposes, and there is near-universal consensus that the application of CALSIM II is currently limited by a dearth of knowledgeable modelers. Current training by DWR and USBR on CALSIM software is useful, but clearly insufficient. To be a functioning and credible CALSIM II modeler one must understand both CALSIM software and the operational complexities of the system (which probably no one can know in its entirety). Improved model and data documentation is also essential here.

- Stakeholders and policy makers are poorly guided in how to interpret CALSIM II results. Not only must CALSIM II become more responsive to current planning and policy concerns and management options, but current policy makers must receive some education in the benefits and limits of such modeling for their purposes. This is a very difficult problem that will often involve the role assigned to modeling and model results within larger politically-driven policy making processes.

- Non-interpretation of model results is not helpful. Several recent DWR reports based on CALSIM II results have been considerable improvements over past practices in terms of presenting model results, discussion of the model, and examination of model performance in a historical context. However, often the studies have not contained the kind of written discussion and interpretation of results that would demonstrate that the authors have thought about the results and drawn conclusions in a realistic and self-critical manner. This detracts from the perceived credibility of the work and makes the study less informative for readers (most of who surely do not have the modeling background of the authors).

- Some needs exist to improve CALSIM software. These are well-known to the model developers and include:
  a. Elimination of the need for the FORTRAN compiler,
  b. A public-domain mixed integer-linear programming (MIP) solver,
  c. A graphical user interface, including ties to databases and GIS display if possible,
  d. Post-processing tools for users to help new users and broader application and scrutiny of CALSIM II results,
  d. Version control software and system (also a problem for model administration),
  e. Better data and database management software and protocols (this has great data management and administration implications),
  f. An ability to more systematically set objective function weights,
  g. More automated input and output data checking is needed to improve productivity in model application and quality control of modeling output. This would also facilitate use of CALSIM II by a broader range of modelers,
  h. Ability to access and employ sensitivity analysis information coming from the MIP solver to identify possible multiple optima and identify binding constraints and slacks,
  i. A debug version of the code where water can be added or subtracted at any location and time (at a great penalty) to quickly identify locations and times of model infeasibilities. (Prof. J. Lund has had great success with this approach to correcting infeasibilities in the CALVIN model of California for a network flow algorithm.),
  j. Time-step issues should be explored and evaluated comparatively. There are major drawbacks to shortening time-steps system-wide (run-time, data development, interpretability of results, etc.), but short time-step components within the model or other approaches might adequately represent short-period aspects of the system for many purposes.

There will be some who argue that CALSIM II is and should remain a model of only the CVP and SWP system. While this would be simpler administratively and financially, it seems technically and politically untenable. California's water system is being asked to operate in an increasingly integrated manner across local and regional scales, with multiple local water demands, supplies, and aquifers being coordinated with the operations of major aqueduct and storage infrastructure. Any model of the CVP and SWP systems must be responsive to this operational integration, either implicitly through better parameterization of local supplies and demands, or explicitly by widening the geographic and functional scope of the model.

3. Limitations, Uncertainties, and Impediments

3.1 Removal of Unnecessary Ties to DWRSIM and PROSIM

Much of the spatial detail employed in CALSIM II is a carryover from the previous DWRSIM model. This is particularly evident in the coarse delineation of watersheds and sub-areas, which may no longer be relevant for future applications of CALSIM II. It is recommended that all unnecessary ties to the previous DWRSIM and PROSIM models be removed in further development of CALSIM II.

3.2 Relative vs. Absolute Predictions

As noted in the Executive Summary, we are skeptical of the usefulness of the distinction between comparative and absolute predictions. To declare that CALSIM II is intended for comparative predictions and should not be used for absolute predictions is not a helpful or desirable strategy. Rather than embracing this limited view of what CALSIM II can be expected to accomplish, we recommend that model developers recognize the requirement for CALSIM II to provide absolute values. To satisfy this purpose, additional calibration of the model will be required to ensure that it provides a reasonably reliable depiction of how the California water system operates. In addition, data on model accuracy and the outcome of the calibration runs should be made available so that users can gauge the likely errors involved in using the model for their own particular purposes. Some methods for doing this and performing sensitivity and uncertainty analyses are contained in Appendix H.

Model uses should realize that model calibration and validation exercises can illustrate only how well the model can reproduce historical decisions and system behavior. Our ability to predict future policy decisions and the emergency responses to water shortages is clearly limited, thus decreasing the absolute precision of any model's predicted values of various system performance measures. Thus it is useful to distinguish between the ability of the model to reproduce correctly the physical operations of the water systems in California (which should be good), its ability to reproduce and anticipate decisions by the agricultural sector that determine the quantities of water the consume, and its ability to mimic historical and current water operation decisions by the CVP, SWP and other water management agencies.

In general, it appears that the developers of CALSIM II do not have a clear idea of how to define the scope of CALSIM II use and many of the applications are evolving in a reactionary manner. Model developers should identify clearly the desired uses for CALSIM II and then determine acceptable approaches for satisfying those desires. Developers should seek to improve data accuracy and overcome unrealistic assumptions to improve confidence in model results.

3.3 Hydropower

CALSIM II is currently greatly lacking in hydropower computations, which is an important of the federal CVP system. This should include risk-based power capacity evaluation, and possible incorporate the ISM (indexed sequential hydrologic modeling) method that the Bureau has used for many years in hydropower capacity analysis. Also, hydropower should not simply be an after-the-fact calculation, but explicitly included in the system objectives.

3.4 Daily operations

A great challenge awaits the developers as they attempt to adapt CALSIM II to daily operations. These challenges are primarily related to the impacts of routing on distribution of flows and scheduling of reservoir releases. Under the current period-by-period optimization structure over daily time increments, without appropriate consideration of routing there is the

danger that the model will allow diversion of upstream flows to lower priority users, resulting in injury to higher priority downstream users in the following days where travel times exceed 1 day. The proper inclusion of routing in the daily operations requires some kind of look-ahead capability in CALSIM II, which is currently lacking. In addition, scheduling of reservoir releases on a daily basis creates difficult timing issues in order to minimize unnecessary downstream spills or shortages caused by routing and attenuation of upstream reservoir releases. Another complexity in moving into daily operations is that reservoir discharges now become head-dependent, whereas this can usually be ignored on a monthly time scale. This means that the maximum reservoir release in any day will be dependent on the head, and should be based on the average head over the day, which introduces the potential for time consuming iterative processes to deal with nonlinear relationships in discharge-head curves for any reservoir.

3.5 Groundwater model

Groundwater has only limited representation in CALSIM II. This resource is modeled as a series of inter-connected lumped-parameter basins. Groundwater pumping, recharge from irrigation, stream-aquifer interaction and inter-basin flow are calculated dynamically by the model.

The purpose of the multi-cell groundwater model is to better represent groundwater levels in the vicinity of the streams to better estimate stream gains and losses to aquifers.

In the Sacramento Valley floor, groundwater is explicitly modeled in CALSIM II using a multiple-cell approach based on DSA boundaries. For the Sacramento Valley, there are a total of 14 groundwater cells.

Currently no multi-cell model has been developed for the San Joaquin Valley. Instead stream-aquifer interaction is estimated from historical stream gage data. These flows are fixed and are not dynamically varied according to stream flows or groundwater elevation.

The approach to modeling groundwater in CALSIM II, a lumped-parameter "tank" model seems to be a reasonable approach. However, few details of this implementation were provided to the review panel, that it is not possible to assess its accuracy or reliability. Details of the calibration and verification activities performed to date should be carried out and reported for the groundwater tank model. The effect of using large size tanks should be assessed and the level of uncertainty in computed results reported. In addition, the effect of these uncertainties on CALSIM II calculations should also be assessed. The San Joaquin valley aquifers are not well represented in the tank model, but it is in the CVGSWM. The San Joaquin valley groundwater should also be modeled in CALSIM II.

Groundwater availability from aquifers is poorly represented in the model. This results from the fact that aquifers in the northern part of the state (Sacramento Valley) have not been investigated regarding storage and recharge characteristics. Thus, in the model, upper bounds on potential pumping from aquifers are undefined. This does not represent reality, since, if CALSIM II is used for statewide planning, it would allow pumping of vast quantities of water for export to southern parts of the state, something which agency staff claim is unrealistic.

Realistic upper bounds to pumping from any of the aquifers represented in the model need to be developed and implemented.

In addition, historical groundwater pumping is used to estimate local groundwater sources in the model. However, the information on the historical pumping is very limited, causing these pumping rates to be very uncertain. Better pumping information is needed and an analysis of the effect of this uncertainty on model results needs to be conducted.

In general, the level of representation of groundwater in CALSIM II is not reasonable from the point of view of the reviewers. This is due to several factors, perhaps the most important being the lack of information presented to the reviewers for their assessment. Another factor is the lack of data collected and analyzed by the State of California to properly account for groundwater resources in the Central Valley. These data are critical to an understanding of the availability of water in the state and the operation of the major water systems that supply water to agriculture and small municipalities in the Central Valley. Assumptions of unlimited groundwater resources in the Sacramento Valley are unfounded and unbelievable. Efforts should be taken to make reasonable estimates of these resources.

There are other approaches that provide reasonably accurate estimates of river-aquifer interactions and groundwater basin response, while not sacrificing computer time. The response function approach is a good example, whereby the CVGSM model is used to develop kernel functions describing this response. A similar approach is described in Fredericks, et al. (1998). These kernels may require readjustment as head conditions change in the basin, but they provide a more accurate prediction tool and are easily incorporated in the MIP model since they apply a linear superposition assumption and retain the linearity of the constraints in the model. A dynamically linked CALSIM-CVGSM configuration is not necessary for reasonably accurate solutions. If computer run time for CALSIM II is considered excessive now, it could only considerably worsen if this type of linkage is incorporated.

Soil moisture is not dealt with in a realistic manner and needs to be improved in applications where the model output might be sensitive to these assumptions.

3.6 Dynamic Variation of Priority Weights

A severe restriction in CALSIM II is the inability to dynamically vary the weights used to prioritize flow allocation in the system. It should not only be possible to dynamically vary these weights, but this variation should be conditional on the current system state, however that state (or states) is defined. In addition to dynamic variation of weights, more explanation is needed of the reservoir operating rules and how these rules are incorporated into CALSIM II. The description of operating rules used in the system is not very clear. For example, what kinds of hedging or shortage rules are used to mitigate the effects of drought?

3.7 Expanding Scope of CALSIM II

CALSIM II is a considerable advance on earlier models in that it fully incorporates both the State Water Project run by the Department of Water Resources and the Central Valley Project

operated by the Bureau of Reclamation. However to be able to examine the full range of Californian water issues, it would be desirable that all components of the linked system should be incorporated in the model including the Friant system, the larger Tulare Basin, and southern California and its links to the Colorado River. Also because of the very important linkage between surface water and groundwater use, improvements should be made in this area particularly with regard to how that linkage affects demand for surface water and how access to groundwater reduces the economic impact of surface water restrictions.

When expanding the geographical scope of the model to include non CVP-SWP areas, as well as Southern California, a hierarchical, decomposition approach would allow development of separate models for these areas that can then be linked together through iterative processes. Otherwise, the CALSIM II model can become extremely unwieldy. Again, integration can still be achieved through appropriate iterative interaction between the regional models. In the same vein, it is also unnecessary to explicitly integrate water quality and detailed water demand/consumptive use models into the model structure. Iterative schemes involving successive estimation of water quality and other parameters can produce comparable accuracy at reduced computer run times, while reducing the complexity of the model.

The replacement of DSM2 with a neural network is consistent with reinforcement or machine learning methods which are increasingly being used to replace complex, computationally time consuming models employed in decision support systems. The complex models are only used to provide the data sets used for training the neural network. Current research at Colorado State University and elsewhere is using neural networks for groundwater surface water interaction and return flow computation to replace computationally expensive groundwater models.

3.8 Key Model Outputs

In the past, the primary purpose behind the development of CALSIM II and its predecessors has been the examination of the reliability of water supplied to the State Water and the Central Valley Projects. However it is clear that there is now a demand for a model that will provide a wider range of outputs including:

- Water supply reliability for all water users
- Demand for water by existing users
- Outflows to Delta
- Use of groundwater and the rate of depletion of aquifers
- Water quality in the Delta and in the San Joaquin River
- Indicators of ecological health in particular with regard to key fish species
- The value of hydroelectric generation.

Although the modules in the CALSIM II package currently address many of these areas, the recognition that all these outputs are important may necessitate some further model development and a greater degree of testing and calibration of these parameters.

3.9 Modeling Allocation, Accounting and Operating Rules

CALSIM II uses a system of weights and constraints to define the water allocation process and the operating rules for storage reservoirs. Unfortunately these do not accurately reflect how operators of the state and federal water projects behave in managing their complex systems. Ideally, CALSIM should both reflect how the operators behave and be accepted by them as a useful tool when considering their management alternatives. The failure to achieve this limits the usefulness of CALSIM to investigate the specific operating or accounting rules that are of interest to those operators. For example, CALSIM II was not used to test changes to the accounting and allocation rules that have recently been proposed by the Department of Water Resources and the US Bureau of Reclamation because the rules that were changed do not exist in CALSIM II.

4. Options for Improving CALSIM

4.1 Optimization Model and Run Times

Many of the complaints regarding using of CALSIM II relate to long run times, which is not conducive to sensitivity or uncertainty analyses. Since CALSIM II employs a mixed integer linear programming (MIP) solver, the usual sensitivity information available in linear programming solvers, such as dual variables and right-hand-side ranging, are not available. The problem is that small changes in right-hand-side constants or objective coefficients (i.e., weights on water allocation priorities) can produce large abrupt changes in model solutions. In this case, dual variables do not provide useful information for MIP problems. Sensitivity analysis can only be conducted through trial and error processes involving incremental adjustment of important weights, coefficients, and uncertain data inputs with subsequent repetitive execution of the model. In light of this, it is crucial that the MIP solver employed in CALSIM II is upgraded. Significant advances have been made in MIP solvers, as described by Bixby, et al. (2000), which are not reflected in the current XA solver utilized in CALSIM II. There have been many recent improvements to the branch and bound method which should be incorporated, and the LP solver itself can be improved with better sparse matrix analysis. As planned by the CALSIM II developers, removal of the need for use of the FORTRAN 90 compiler will also improve run times when changes in optimization model structure are required.

4.2 Confidence in the model

The usefulness of a computer model in water resource management is only as good as the confidence that the stakeholders have in the accuracy and reliability of the model and the trust that they have in the modelers. There are several factors that affect that confidence and a number of ways that confidence can be improved.

- **Documentation**

Producing documentation of models requires considerable resources to do properly and ongoing resources to maintain especially when model development is continuing. Typically documentation of any water resource model is poorly done. However, where there are external model users, as is the case with CALSIM II, it is important. The survey conducted by Ferreira et al (2003) indicated that many users of the model thought that documentation of CALSIM II was poor.

- **Seminars**

In the Murray-Darling Basin, seminars with key users and interest groups in which the operation of the model is described and discussed have proved to be useful in increasing confidence in models. The practicality of this approach will depend on the number and location of the prospective participants and the resources available to support the process.

- **Data**

A model can only be as good as the data that is used to develop and calibrate it. The agreement over an acceptable set of hydrologic data that occurred during the development of CALSIM II is a considerable advance. However, there appears to be a need to improve the collection and use of data on water diversions and return flows. Because of the close links between the surface water use and groundwater use there also is a need to have better information on the use of groundwater.

The models used to calculate the Local Water Supplies in the Depletion Study Areas depend on estimates of surface water use, crop evapotranspiration rates and water use efficiencies developed using data from the 1970's. Confidence would be improved if more recent data were available to check these estimates.

- **Calibration**

A very good way to improve confidence in a model is to calibrate it against historical data to ensure that the model output is able to reproduce the observed data. Calibration is the process of using the model to reproduce the historical behavior of the system and then fine-tuning the model so that the match between modeled and observed values improves. The calibration of the model assists in detecting errors in the model and the input data. It also enables a comparison to be made between the way that the operators actually manage the system and the way that the model assumes that the system is managed.

A further consequence of the calibration process is that the statistics of the match between modeled and observed values can be used as a reasonable estimate of the absolute accuracy of the model output.

It is legitimate in a calibration/validation run to incorporate changes to infrastructure, institutional or operational rules as they occurred especially if these changes are specified as

input parameters to the model. This was done to a limited extent in the CALSIM II validation run with three regulatory periods modeled related to decisions made by the State Water Resources Control Board. It is also legitimate to incorporate growth in demand especially if that growth is described in a manner that is consistent with the way that demand is specified in the production run. Demand north of the Delta was specified in the validation run by inputting the historical crop areas.

A Calibration/Validation report should be very useful in demonstrating the accuracy of the model. However there are a number of elements in the CALSIM II validation run and the validation report which reduce that confidence including:

- State Water Project (SWP) demands south of the Delta were set at historical deliveries in years with no restriction and at the contractor's request level in restricted years. Neither of these pieces of information is available to a production run which calculates demand based on crop areas. Therefore the validation run does not provide reliable information on how well the model can represent these demands.
- The validation run omitted Article 21 deliveries. Although this omission will not affect the delivery of 'Table A' volumes south of the Delta, it will affect flow in the Delta and Delta water quality. Also, in the example model run presented in the paper by Draper A.J. et al (2003) which was supplied as part of the review, changes to Article 21 deliveries constituted the largest impact resulting from a change to the allowable pumping capacity at Banks between March and December. This suggests that the modeling of these demands is important.
- The DWR (2003) report produces estimates of SWP and Central Valley Project (CVP) deliveries south of the Delta but then adjusts them for changes in storage before presenting comparisons of those results with observed deliveries. This process merely checks that the model is preserving a water balance and does not present a legitimate validation of model deliveries.
- The report provides statistics on long term average deliveries and flows but no statistics on the fit for individual years. Additional analysis of the output would assist stakeholders to assess whether the estimate of water supply reliability and in particular the modeled volumes of water available in the most restricted years are accurate.
- In some instances, such as the examination of water quality in the Delta, the ability to accurately model monthly flows and deliveries will be important. The validation report contains no information that would enable the ability to model monthly flows to be assessed.
- A key model output is the water quality in the Delta. It would assist the validation of the model if a comparison of parameters such as the location of the X2 boundary was provided.

The users of CALSIM should recognize that models are a summary of what one believes to be true and important about a system. Validation is then an exercise to test how good that summary and understanding really is.

Appendix I contains brief descriptions of calibration modeling in the Murray-Darling Basin in Australia and in the State of Texas.

4.3 Assessment of the reliability of "delivered" water

An important recent application of CALSIM II which has drawn widespread attention is the "State Water Project Delivery Reliability Report. While this is an important step forward in the use of CALSIM for policy purposes, it highlights a number of issues, both conceptual and empirical, that need to be resolved in order to provide a more adequate assessment of the reliability of water supply in California.

First, it illustrates the need for sound calibration of CALSIM. The question being asked is not a comparative one – What are the consequences of changing some aspect of the system from X to Y? – but rather an absolute one – How does the system function at present? How often can users expect a shortage in deliveries of Z%?

Second, it highlights the fact any water system model such as CALSIM requires a blend of hydrology and behavioral analysis. To conduct a water balance, the model needs to know what deliveries are required by the customers of the given project, and what are the diversions by other user groups who extract water from the same surface or groundwater sources. These are fundamentally questions of economic and institutional behavior, not matters of hydrology. Therefore they cannot be dealt with by hydrologists alone. Like its predecessors, CALSIM tends to treat these as black boxes. The diversions by water users outside the CVP-SWP are taken as exogenously given, based on an assumed "level of development" and simplistic assumptions about the patterns of water use associated with that level of development. The deliveries required by the water users who are served by CVP-SWP are generally taken as given. For reasons explained below, both of these treatments are simplistic and unsatisfactory.

In CALSIM modeling exercises the level of development plays two different roles depending upon the context. In a simulation context, the level of development is used to represent hydrologic variability and uncertainty; in a calibration/validation context, it is used to reflect the actual historical demand for water withdrawals. These are very different purposes and it is important to keep them distinct. In most applications of CALSIM prior to the recent reliability study, the main focus was simulation and the representation of hydrologic variability. The chief purpose served by using 73 years of adjusted streamflow records was to represent the variability and uncertainty in the streamflow that one can expect to observe in any single year. Therefore, the calendar date of the record has no substantive significance, the (adjusted) streamflows for 1952 or 1982 are not being used to represented what happened historically in 1952 or 1982, but rather as an indication of the variation in streamflow that could be expected to occur next year, or any other year. In this context of simulating hydrologic variability, it makes good sense to apply the *same* level of development (i.e. the same pattern of water use) to every year in the sequence, rather than a series of different levels of development that vary with calendar time, because the streamflows represent alternative hydrologies that can occur in any given year.[1] The situation is different when one is conducting a calibration or validation

[1] This could be modified to allow for the fact that local weather conditions have a significant impact on irrigation (and urban) demands – e.g., farmers plant fewer acres of crops in a drought year. In that case, one could have different levels of water demand and extraction in different year *types;* but, these would all be keyed to the same overall level of economic development (e.g. the California economy in the 1990s). CALSIM II does not presently

exercise. In that case, one wants to represent the historical demands in 1952 or 1982 in order to compare what the model predicts with what actually happened. Therefore, in a calibration or validation exercise one wants the level of development to change each year in order to reflect the demand that occurred historically.

Both simulation and calibration/validation raise some other important technical issues. In the context of simulation, there are several different ways to generate a hydrologic sequence that is calibrated to a fixed level of development. One can use all 73 years for which data are available. One could use a subset of those years chosen either according to some deterministic rule or randomly. The subset could be oriented, for example, towards the extremes of the 73 sequence of annual records. However, the drawback of any approach based on sampling from the observed historical record is that it *understates* the full variability in streamflow that could be experienced in the future. The 73 years of record are drawings from a probability distribution the extremes of which extend beyond the minimum and maximum flows observed in the historical record. Relying on this record, therefore, understates the true minimum and maximum flows that might be encountered. In a reliability assessment exercise, one might want to take some steps to minimize the potential understatement of streamflow uncertainty. This could be accomplished by fitting a (parametric) probability model to the historical streamflow record and then sampling from the tails of the fitted distribution (Stedinger, 1981). The use of statistical models of streamflow variability could be considered in future applications of CALSIM to assess delivery reliability.

The assessment of delivery reliability requires that particular attention be given to the definition and measurement of the water users' demands. In this context, the user's demands play two roles: they affect the definition of "deliveries" and they influence the assessment of "reliability". With respect to deliveries, CALSIM II considers water to be delivered whenever it has the water irrespective of the ability of a contractor to use the water or to store it; The reality is that, if the contractor does not have a demand for the full quantity of water and is not able to store the excess, that amount will not be delivered. Therefore, the calculation of deliveries would be flawed. Furthermore, reliability cannot be assessed without reference to demand. Stating that a water supply system can deliver 100 acre feet in a wet year but only 70 acre feet in a dry year is useful only if one knows what the demands will be in wet and dry years. The implications are quite different if the user needs 105 acre feet per year than if he or she needs 65 acre feet per year. Thus, the users' demands should serve as the norm against which reliability is assessed. Instead, the recent reliability report uses the so-called 'Table A' water amounts as the norm for assessing deliveries to SWP contractors. This does not seem to be a satisfactory approach because there is no presumption that the Table A amounts, negotiated in 1960, measure the actual demands of SWP contractors in any particular year. The actual demands of the individual contractors will be influenced by how much storage they have, what access they have to other surface water or groundwater, and the demands of the farmers they serve to plant crops and apply water. Without accounting for these factors, it is difficult to generate a meaningful assessment of supply reliability.

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consider the impact of annual weather conditions on demands. In order to model water demands accurately in a year, the climate conditions would be linked to the flow conditions to provide an input set for a particular year.

The assessment of reliability should ideally go beyond a comparison with quantities demanded to incorporate the notion of a loss function. If a user has a demand for 100 acre feet and can only receive 90 acre feet in one scenario and 80 acre feet in another, while the shortfall is twice as large in the second scenario the actual *consequences* of the shortfall to the user, in terms of lost profit or higher cost, might be more than twice as large. To assess the economic value of reliability, or the economic cost of a lack of reliability, one needs to be able translate shortages into monetary losses. To accomplish this, the warning time provided and the delivery shortfalls from CALSIM would need to be processed through an economic model of the value of water to different SWP contractors.

Because water users face difference demands and have access to different sources of supply, when assessing reliability it is unhelpful to aggregate all contractors and simply present the results in terms of total annual project deliveries, as was done in the report. Precisely because of the potential non-linearity of the loss function, a given aggregate shortfall can have different consequences when distributed differently among the individual contractors. A similar observation applies to the temporal distribution of delivery shortfalls across the year. It is unhelpful to aggregate supply system deliveries into an annual total, as done in the report. For a user to be able to obtain 100% of his or her demands in the period from March to May but only 60% in the next three-month period from June to August has different consequences than being able to obtain 80% in each of the six months. Furthermore, for both agricultural users and many urban users, major decisions affecting water use have to be made in the spring. They are based on the expectation around March about the amount of water that will subsequently be available for delivery during the summer months. What matters to these users when assessing supply reliability is the amount of water they can expect around March to be delivered over the summer, rather than the ultimate total delivery.

For both reliability assessment and also model calibration/validation, it is important to avoid excessive aggregation when describing shortfalls between demand and supply, or deviations between model predictions and actual outcomes. In regression analysis, it is the convention to measure the goodness of fit of a regression equation not by the average deviation but rather by the sum of the squared deviations. In ordinary least squares regression, by definition the average deviation is always zero (that is to say, the average of the predicted values of the dependent variable always equals the average of the actual values) regardless of how well or badly the regression equation fits the data. The average deviation thus provides *no* information regarding the goodness of fit; by contrast, the sum of squared deviations or the sum of the absolute values of the deviations are sensitive measures of goodness of fit. Although the calibration of CALSIM is not an exercise in least squares regression, the same general principle applies. To judge whether the model is doing a good job, the goodness of fit should be measured by reference to the disaggregate results and not simply by the overall average deviation.

Additional comments on the 2003 CALSIM II Validation Report are contained in Appendix F.

5. Managing CALSIM Development and Applications

The costs of not continuously and substantially improving our analytical capabilities are political (in terms of continued controversy and diminished agency credibility), economic (as inferior system performance for agricultural and urban water users), environmental (in terms of inferior environmental system performance), and financial (lawyers and policy consultants are more expensive than engineers and scientists).

CALSIM II is a substantial improvement over its predecessor models, DWRSIM and PROSIM, with a great deal more flexibility, transparency, and potential than these earlier models. The modeling team for CALSIM has identified an exciting and relevant vision of how modeling should be done for this complex and difficult system in the coming years. However, implementation of this vision in a coherent technical manner that leads to both technical and stakeholder credibility will be a difficult process, requiring financial and institutional support if this kind of capability is to be developed and sustained.

To accomplish these objectives CALSIM II developers need to be in an institutional position where they can see the model more as "outsiders" view it. This would allow them to be more responsive in supporting the credibility of their work and the relevancy of their tools and results to the broad range of current water management problems. As such CALSIM II should no longer be solely responsible to CVP-SWP managers, but should be responsible to a broader range of technical managers from additional interests, reflecting its current and prospective uses.

It would be imprudent to manage a state's finances, a business, or a retirement plan without quantification – quantification in such matters is necessarily imperfect, but necessary nonetheless. While shortcomings have been identified in CALSIM II, it would be similarly irresponsible to manage California's water budget without carefully-interpreted quantification. Progressive and continuous improvement in our quantitative understanding of California's water system provides a common basis for improving its performance for all interests.

One possible means of maintaining control of the quality of particular versions of CALSIM II and accompanying models used for SWP-CVP planning and management decisions is to create an interagency modeling consortium (IMC) consisting of DWR, USBR, and persons from other stakeholder organizations if they are interested and want to participate. This consortium would be responsible for maintaining a toolbox of 'acceptable' models for 'official' use by the agencies and contractors.

IMC responsibilities and authority could include:

- Prioritize, coordinate, and provide consistency, technical guidance and oversight for all modeling applications,
- Approve model selection and insure that each requested application is carried out using the most appropriate model(s) and input data,
- Provide or otherwise insure documentation of the modeling process itself as well as the modeling results,

- Insure that the results are expressed and made available in a way such that others can understand and benefit from that modeling application, as applicable.
- Implement peer reviews of models and their applications as deemed appropriate.

To help meet their responsibilities the IMC will need to establish, publish and implement some procedures for insuring the quality of the entire model development and application process. They will need to identify among all the models that might be used, which are the most appropriate to address each of these separate groups of model applications. They must identify various models, i.e., establish a model toolbox, from which clients can choose the one that best meets their needs (or perhaps argue that another model should be added to the toolbox). The IMC will also need to maintain model documentation and provide for peer reviews of any model, its documentation, and/or its use in a project.

Further suggestions and discussion on the creation and operation of a possible IMC for model development and application, as well as for managing peer reviews of both the models and their applications, are contained in Appendix E.

6. Recommendations for Future Use, Development, and Application of CALSIM II

The most concise recommendation we might make would be to fix the shortcomings beginning with what are considered the most serious, and proceeding to those that are less serious, taking into account the time and other resources needed to address each weakness. However, we believe it is more useful to suggest ideas on how to systematically address both present shortcomings and those likely to emerge as stakeholders' quantitative understanding of California's water system and its problems continue to evolve.

6.1 Model development and support consortium

As discussed in the previous section and in Appendix E, it might be useful to explore creation of a broader interagency modeling consortium for developing operations planning models for California. The joint DWR-USBR development strategy used for CALSIM II has shown some notable successes, and should be expanded to include additional parties and sources of expertise. Such a consortium might include staffs from several agencies (DWR and USBR, as well as potential members from MWD, KCWA, CCWD, and other agencies), NGOs, some consultants, and universities. Such a model development forum would:

a. Bring a wider range of expertise to bear on model development problems.
b. Facilitate having more agencies involved in supporting model development with expertise and financial resources.
c. Better enable model developers to see the model as "outsiders" see it.
d. Potentially improve contracting for model development and testing.

e. Take model development and testing outside of the explicit agency framework; a broader consortium should be more conducive to self-critical and transparent technical practices.
f. Provide a common training ground for agency, NGO, and consulting staffs to become effective modelers, broadening the talent base for technical work in California.
g. Reduce impediments to model development and testing arising from current State budgetary and personnel hiring problems.

Many of the questions, concerns, and problems mentioned in the user community interviews could be addressed well in such a distributed model development, testing, and support framework. It would still be necessary for each stakeholder group and agency to maintain its own modeling staff, but these would be partially shared in an interagency modeling consortium.

The governance and finance of such a consortium would be difficult and would probably require a steering committee or governing board, but any resulting model(s) would have broader credibility and a broader and deeper technical base.

In the immediate term, a users' group should be formed and the formal listing of model development activities should be posted on the web, including short descriptions of each development activity and contact information.

6.2 Quality Control Program

The DWR and USBR modeling team (or a broader model development consortium) need an explicit quality control program. Such a program should include a variety of activities:

a. periodic external reviews on the broad modeling program
b. specialized external reviews of model products and applications
c. a standing (or sitting) external technical advisory body
d. software engineering and maintenance
e. a regime of model testing
f. model and data documentation
g. data development and management
h. user group activities
i. local agency and interest involvement
j. model, data, and documentation accessibility (including web site use).
k.

Such a quality control program would benefit from deep consultation with stakeholders and the broad community of water technical people, perhaps via the California Water and Environment Modeling Forum (www.cwemf.org).

6.3 A Training Program

DWR, USBR, and assorted agencies and consultants should establish a more formal common regimen to train new CALSIM II users in both CALSIM software and the complexities of actual system operation. All these groups currently rely on a relatively small pool of perhaps a

dozen knowledgeable CALSIM II users and all proclaim a need for many more capable users. A training regimen consisting of current CALSIM II training classes, supplemented by additional training in software application and system operation and apprenticeships or rotations through operations and model development shops would be useful to all concerned. The entire water community would benefit from having such expertise being widespread. Having widespread CALSIM II modeling expertise also makes explaining CALSIM II and its results easier. This might be an appropriate activity for a model development consortium.

6.4 Extend Improvements in Modeling Practice to Supporting Models

CALSIM II is at the center of a web of additional models used by DWR, USBR, and other agencies to prepare inputs for CALSIM II and post-process outputs from CALSIM II.

Delta controversies and difficulties of representation seem endemic to problems of modeling Central Valley operations. The technical basis for representations of Delta operations and water quality performance requires a similar level of transparency and testing to avoid this becoming a "weak link" in the Valley-wide operations planning model. Since so much is based on the DSM2 Delta model, documentation of fairly strenuous tests of the DSM2 model are highly desirable. This would provide a firm foundation for the use of ANN or other approaches for summarizing DSM2 behavior in an operations model. Similar documentation, testing, and development are desirable for the other models mentioned above which provide data for CALSIM II (CVGSM/IGSM, CVPM/CALAG, IWR-MAIN, LCPSIM, CU model, and SIMETAW).

6.5 Hydrologic Data and Data Development

An effort should be made to step back and perhaps re-define a more systematic and solid basis for developing hydrology for water management models of California's inter-tied water system. Currently, several efforts exist to develop surface or groundwater hydrologies for parts of the Central Valley (sponsored by DWR-USBR, USACE-Sacramento District, USEPA, USGS, CALFED, local agencies, etc.). An effort should be made to broaden the range of hydrologic expertise involved in hydrology data development for management modeling of California's inter-tied water system, and establish a consistent and high, but reasonable, standard of documentation and testing for developed data and any underlying hydrologic models. Establishing such a standard of documentation and testing would make existing hydrologic studies more accessible and useful for future studies and encourage the comparison and further development of existing representations of the system's hydrology.

6.7 Performance-Based Optimization

Performance-based optimization should be added to CALSIM's capabilities; it would not be difficult in terms of software or data, and would add much greater ability to explore and seek improvements in management within a complex system. The multi-period optimization approach being developed (CAM) is an operations-oriented first step in this direction, but could be expanded without great difficulty.

For large-scale water resource systems of great complexity and many options for system management, it is often difficult to find "optimal" operations with simulation modeling. There are simply many myriads of decision options and combinations of options, which theoretically each require a simulation model run – which would be prohibitive in terms of analysis cost and time. In such situations, performance-based optimization models, such as those seeking maximum economic performance, can offer useful insights as to where to look for improving system operations and management. Metropolitan Water District of Southern California (MWD) and San Diego County Water Authority (SDCWA) employ performance-based optimization modeling of parts of California's water system to gain strategic insights for planning and management. An economic-engineering optimization model has been developed for California and, despite significant limitations, shows several insights for California (CALVIN), suitable for identifying promising operational and management strategies worthy of more detailed analysis (Jenkins et al. 2001; Draper et al. 2003; Jenkins et al. 2004). The CALSIM II modeling approach could easily be adapted to provide greater functionality to this type of performance optimization. Having performance-based optimization capability together with a compatible simulation model for more detailed analysis and trade-off evaluation could greatly improve the capability of California's water community to explore and develop promising and creative options for improving operations, facilities, and overall system management.

6.8 Modular and Layered Versions of CALSIM II

Speedier versions of CALSIM II are needed for operations planning and integrated water planning studies. Such versions would be regional modules of CALSIM II (for regional studies) or explicitly aggregated system-wide models from the most detailed CALSIM II schematic for system-wide or statewide studies. Both approaches would simplify the model for particular purposes, yet be tied to a common detailed schematic and detailed hydrologic, operations, and water demand data sets.

Geographically modular or aggregated system-wide versions would allow additional local and regional water management options to be represented for particular operations and policy planning purposes and allow users to more quickly explore and develop operating policies. The final runs from such integrated or exploratory studies could then be evaluated using a more detailed and complete version of CALSIM II.

Modular regional models might represent regions with relatively few inter-ties, such as: Sacramento Valley, Delta and eastside streams, San Joaquin Valley, San Francisco Bay Area, Tulare Basin, and Southern California (DWR's South Coast and Colorado River hydrologic regions). (We have had good success with the CALVIN model of California with 5 modular regional models, which combine to form a system-wide model. These geographic sub-models greatly improved quality control in model development, work flow and data checking, and identification of problems in the model.)

6.9 Model Calibration and Testing

Many approaches exist for model calibration and testing (Modeling Forum 2000). Calibrating a planning model oriented to operations in an uncertain and distant future is always challenging. For a model that serves many uses (including policy-urgent uses unforeseen by developers), use-specific testing will often be impossible within a responsive time frame and budget. Such unavoidable situations call for more thorough, general, and well-documented model calibration and testing than would otherwise be needed.

For the model to have technical credibility, stakeholder credibility, and to serve the kind of training and reference function needed for the water management community, a systematic and coherent means of setting parameter values in the model and documenting these values is needed. Similarly, a systematic self-critical means of testing is needed for a model to establish and retain credibility, and have defined limitations, for a range of applications.

A potentially excellent resource for model testing is comparisons of seasonal operations planning CALSIM II model runs with recent years' seasonal operations, as done by actual operators. Similarly, system operators could scrutinize historical simulations, such as those in the recent November report, for systematic differences from operating practice. Such comparison with operator policies and philosophy could also be performed with SWP or CVP delivery reliability estimates. Such comparative analyses would both help define the likely (and unavoidable) differences between actual and modeled operations and water deliveries and identify potential opportunities to narrow such differences.

Credibility arises, in part, from demonstration that problems and limitations are systematically identified and addressed or considered in model development and in making and interpreting model runs. This can be accomplished by use of documentation, metadata, written guidance, and protocols and logs for identifying model problems and recording model improvements.

Given present and anticipated uses of CALSIM II, the model should be calibrated, tested, and documented for "absolute" or non-comparative uses. This is what many applications require today and will be increasingly desired and required in the future. Maintaining the traditional "comparative-only" use of CALSIM II is undesirable if the model is to be useful for the CVP and SWP systems, the operations of water contractors, or for statewide planning purposes.

6.10 Documentation of Model Improvements

Along with better documentation of model versions, logs of data and model improvements and "bug fixes" should be maintained. Explicit protocols and records for identifying and correcting modeling errors and problems would enhance the credibility of the modeling effort with technical people and policy makers. Such protocols also provide an internal aid to staff and staff development in modeling. I understand that this kind of record-keeping is done, but the precise form of, nature, and extent of this record-keeping is unclear. It would be useful and reassuring to stakeholders and policy makers to know that this kind of record-keeping of the software and data was being done.

6.11 Better Model Integration in Decision-Processes and Stakeholder Education

Greater aid should be given to interested parties and decision-makers who must work with the unavoidable limitations of any model. If possible, a document should be prepared for stakeholders and interested parties outlining the model, summarizing the model's primary limitations, and providing guidelines for interpreting model results. Those developing policy-making forums and processes should thoughtfully incorporate computer models in these processes in ways that do not assume model omniscience, or otherwise place too great or exclusive a reliance on model results.

Models and model results will never be perfect. If models are to be important for planning and policy-making, they be must be presented and used in ways that enlighten policy-makers more than they add confusion and controversy to already difficult situations, if possible.

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A Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California

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Appendix A: CALSIM II Science Review

Dates: Nov 13-14th
Location: Bay-Delta Room, CBDA Offices
650 Capitol Mall, 5th Floor
Sacramento, CA

Day 1: The Management Context, Model and Application Details

9:00 Welcome – Kim Taylor
- Overview of the CALFED Bay Delta Program -
- Introduction of the Panel

9:15 Water issues in California – Francis Chung
- General Hydrology
- SWP/CVP
- Operational challenges
- Sacramento-San Joaquin Delta – Ron Ott (5 min.)

9:35 Panel Q&A

9:45 Planning Models – Andy Draper
- CALSIM software
- CALSIM II application overview
- Interaction with other models

10:10 Panel Q&A

10:20 Break

10:30 Summary of CALSIM Applications
- DPLA/CalFed/US Bureau of Reclamation: Integrated Storage Investigations – Steve Roberts
- Bay Delta Office (DWR): SWP Delivery Reliability Report - Kathy Kelly
- USBR: Multi-layered modeling to simulate CVPIA (b)(2) water and Environmental Water Account Operations – Nancy Parker
- Operations Control Office (DWR): Oroville Relicensing, SWP Allocation decision procedure – Curtis Creel
- Department of Planning and Local Assistance (DWR): California Water Plan Update – Kamyar Guivetchi/Ken Kirby

12:15 Panel Q&A

12:30 Lunch

1:15 Summary of User and Stakeholder Interviews
- 1:15 Interview Summary and Findings – UC Davis
- 1:35 Panel Q&A
- 1:50 Public Comment

2:15 CalSim II Details
- Development philosophy – Francis Chung
- Operation priorities, constraints, common assumptions – Erik Reyes
- Hydrology development – Andy Draper
- Delta water quality constraints – Ryan Wilbur

3:15 CalSim Evaluation
- Historical Operations Study / Sensitivity Analysis – Sushil Arora

3:30 Panel Q&A

3:45 Break

4:00 Future Directions
- Data Structure / Version Control / Multi-Period Prescriptive Optimization – Ryan Wilbur
- Daily Time Step - Dan Easton
- CalSim II – CVGSM Integration – Tariq Kadir
- Water Quality / Upstream Models – Nancy Parker

5:00 Panel organizational meeting (additional information needs, questions of specific staff, discussion plan)

Day 2—Panel Deliberations and Preliminary Report

8:30 Panel Q&A with specific DWR and USBR staff on request

9:30 Panel *in camera* discussions

11:00 Panel presentation of draft main findings—Pete Loucks

12:00 Wrap up and next steps - Kim Taylor

Appendix B: Briefing Material for CALSIM II Peer Review

California Water
Averting a California Water Crisis (3 pages)
California Water Today, Bulletin 160-0, Chapter 2 (20 pages)
Water Supplies, California Water Plan Update, Bulletin 160-98, Chapter 3 (11pages)
Urban, Agricultural and Environmental Water Use, California Water Plan Update, Bulletin 160-98, Chapter 4 (17 pages)
California's Major Water Projects (map) (1 page)

CVP and SWP
State Water Project Operations (6 pages)
Central Valley Project Operations (16 pages)

CalSim and CalSim II Overview
CalSim: A Generalized Model for Reservoir System Analysis (19 pages)

CalSim Software Details
CalSim water resources simulation model: Users guide (18 pages)
CalSim water resources simulation model: Wresl language reference (11 pages)

CalSim II Details
Network Representation (1 page)
Sacramento-San Joaquin Delta Operations (9 pages)
Coordinated Operating Agreement (3 pages)
Reservoir Rule Curves (2 pages)
CalSim ANN Implementation (8 pages)
CVPIA (b)(2) Management and Operations (6 pages).ii
EWA Management and Operations (8 pages)
Multi-Cell Groundwater Model (2 pages)
SWP and CVP Delivery Allocation Logic (3 pages)

Hydrology Development
Surface Water Hydrology Development for CalSim II (8 pages)

Supporting Computer Models
Model Interaction (1 page)
CALAG (2 pages)
CU Model (2 pages)
DSM2 (2 pages)
IGSM2 – CVGSM (4 pages)
LCPSIM (5 pages)

CalSim II Evaluation
Planned Sensitivity Analysis (7 pages)
CalSim II Simulation of Historical SWP-CVP Operations - Extracts (61 pages)

CalSim II Applications

CalSim II Project Applications Summary (not completed)
SWP Delivery Reliability Report – Extracts (25 pages)
North of Delta Offstream Storage Investigations (3 pages)
In-Delta Storage Investigations (3 pages)
California Water Plan Update 2003 (3 pages)
CalSim II and SWP Operations Control Office (1 page).[iii]

Future Model Development

(a) CalSim Software

CalSimMulti-period Prescriptive Optimization (not completed)
CalSim Daily Time Step Model (not completed)
CalSim Water Quality Module (not completed)
Data Structure / Version Control (not completed)
CalSim Graphical User Interface (not completed)

(b) CalSim II Applications

CalSim II – CVGSM Integration (not completed)
CalSim II Geographical Expansion (not completed)
Global Climate Change (not completed)
Refined Spatial Resolution (not completed)
Expansion of Land Use Based Demands (not completed)
CalSim II – CALVIN Integration (not completed)
Revision of Urban Water Demands (not completed)

(c) Supporting Models

Replacement of Consumptive Use Model (not completed)

Appendix C: CALSIM II Review Process and Timeline

Establishing the Peer Review Panel

Dr. Pete Loucks (Cornell University and South Florida Water Management District) has accepted the CALFED Science Program's invitation to chair the panel. Other members are being currently being contacted by the Science Program staff

Organization of Briefing Material

Science Program and key agency staff, in consultation with the review panel chair, are identifying and organizing briefing material for panel members. Target date for completion is Sept 1, 2003. (This was extended to December 8, 2003)

Public Meeting of Review Panel

Target: 2-day session in November, 2003 in Sacramento area

Review workshop structure will include:

- Presentation overviews of California hydrology, water management, current issues, and the development of CALSIM II
- Presentations on the range of different current and potential applications of CALSIM for planning, operations, and supply reliability projects
- A summary of an independent interview project by Dr. Jay Lund of users and stakeholders explaining the major questions people are trying to answer with CALSIM II and other models
- Public comment to the panel
- Detail discussion of the model, including assumptions used in different applications, verification studies, and sensitivity analyses
- Opportunity for panel members to ask follow up questions of CALSIM developers and users
- An in camera session for panelists to discuss and begin compiling review comments
- A public presentation of the panel's draft findings

Panel Chair Provides Final Report to CALFED Lead Scientist

The panelists will be asked to finalize their review comments within 3 weeks of the public meeting and to transmit those directly to the Lead Scientist. The Science Program will transmit the completed review to CBDA and the CALFED community.

Appendix D: Panelists CALSIM II Review, Nov. 13-14, 2003

Name	Affiliation	Position	Address/Phone/E-mail
Andy Close	Murray Darling Basin Commission	Lead Modeler and System Manager	GPO Box 409 Canberra ACT 2601, AUSTRALIA (02)62790102 andy.close@mdbc.gov.au
Michael Haneman	UC Berkeley	"Senior Economist, Professor"	327 Giannini Hall, Berkeley, CA 94720-3310 (510)642-2670 hanemann@are.berkeley.edu
John Labadie	Colorado State University	Professor	B211 Engineering, Fort Collins, CO 80523 (970)491-6898 John.Labadie@colostate.edu
Pete Loucks	Cornell University	Professor	"Civil and Environmental Engineering, 311 Hollister Hall, Ithaca, NY 14853 " (607) 255-4896 DPL3@cornell.edu
Jay Lund	UC Davis	Professor	Civil and Environmental Engineering 3109 Engineering III, Davis, CA 95616" (530)752-5671 jrlund@ucdavis.edu
Daene McKinney	University of Texas at Austin	Professor	Civil and Environmental Engineering Campus Mail Code: C1786, Austin, TX 78712 (512)471-8772 daene_mckinney@mail.utexas.edu
Jery Stedinger	Cornell University	Professor	Civil and Environmental Engineering, Hollister Hall, Ithaca, NY 14853 (607) 255 2351 JRS5@Cornell.edu

Appendix E: Managing Model Development, Application, Documentation and Communication.

One possible means of maintaining control of the quality of particular versions of CALSIM II and accompanying models used for SWP-CVP planning and management decisions is to create an interagency modeling consortium (IMC) consisting of DWR, USBR, and persons from other stakeholder organizations, including NGOs and universities, if they are interested and want to participate. This consortium would be responsible for maintaining a toolbox of 'acceptable' models for 'official' use by the agencies and contractors.

IMC responsibilities and authority could include:

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- Approve model selection and insure that each requested application is carried out using the most appropriate model(s) and input data,
- Provide or otherwise insure documentation of the modeling process itself as well as the modeling results,
- Insure that the results are expressed and made available in a way such that others can understand and benefit from that modeling application, as applicable.
- Implement peer reviews of models and their applications as deemed appropriate.

To help meet their responsibilities the IMC will need to establish, publish and implement some procedures for insuring the quality of the entire model development and application process. They will need to identify among all the models that might be used, which are the most appropriate to address each of these separate groups of model applications. They must identify various models, i.e., establish a model toolbox, from which clients can choose the one that best meets their needs (or perhaps argue that another model should be added to the toolbox). The IMC will also need to maintain model documentation and provide for peer reviews of any model, its documentation, and/or its use in a project.

CMM Level 3 Performance Expectations

Firms that develop professional software are typically required to meet certain software standards. One such standard is defined in a book from Carnegie Mellon University. These so called Capability Maturity Model (CMM 1994) standards have various levels. For example, the South Florida Water Management District, that develops hydrologic models used as inputs to major investment decisions, strives to meet Level 3 standards. To meet such standards in software development and peer review, one needs to show that

- Modeling related problems are anticipated and prevented

- Model development and application groups work together as an integrated product team.
- Model use training is planned and provided as is needed.
- New modeling methodologies are identified and evaluated for possible implementation on a qualitative basis.
- Data are collected and used in all defined processes.
- Data are systematically shared across various projects.
- Both the models and their applications are evaluated and judged satisfactory by independent reviewers.

It seems to this panel that CALFED could without too much difficulty meet such standards if it chose to. Clearly planning for, conducting, and documenting these activities will require additional time and money. The expectation is that in the long run, such documentation and review will save time and money by redirecting misguided initiatives, identifying alternative approaches, or providing valuable technical support for a potentially controversial decision.

Model Toolbox

The IMC in collaboration with all agencies involved in water resources planning could be responsible for creating and maintaining a collection of models that agencies can use to meet their needs. As shown in Figure 1, this collection of models might be called the model toolbox. The criteria to be used as a basis for deciding whether a proposed model should or should not be included in the toolbox will depend in part on an assessment of the attributes of that model compared to alternative models and the suitability of the model to meet the needs of the project. Associated with the model toolbox is a library of completed model application documents and data bases for use by anyone who could benefit from them.

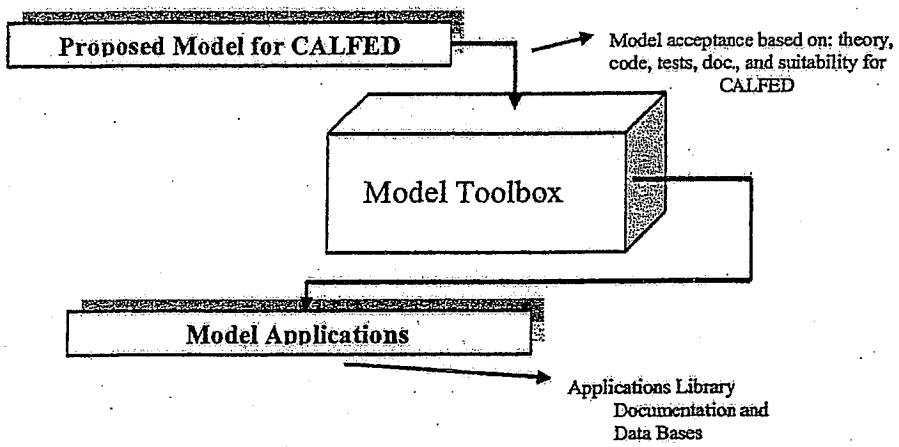


Figure 1. Model Toolbox consisting of approved models for use and Applications Library consisting of documentation and model data bases.

Everyone would agree that all modeling applications should be performed with the 'best' models available. But 'best' does not mean that all models used should be the most detailed, complex, realistic and thus usually the most expensive models available. The decision regarding the 'best' or most appropriate model should be based on the particular issues or questions being addressed, on the quantity and quality of the available input data, and on the time, personnel, and money available to perform the modeling application. The central question to be answered before initiating any modeling application is just what model output information (and precision) is needed to meet the needs of the decision making process. Expressed in other words, just how sensitive will the decision be to the type, amount and precision of the model output?

IMC in consultation with the other agencies could provide guidance on the adequacy of a particular version of CALSIM II or other associated model requested by each client with respect to the theory upon which it is based, its data requirements, its spatial and temporal resolutions, its documentation and status with respect to peer reviews, its capabilities, and its limitations. Similar considerations must be given to the proposed input data. To provide these services to each client requesting services from the IMC would require IMC to be staffed with personnel acquainted with the models in the toolbox, as well as be able to perform or review the simulations requested by various agencies.

There will likely be requests to use models not yet included in the model toolbox. IMC together with others from the DWR and/or USBR will need to judge the merits of such requests and if deemed beneficial, consider including such models in the toolbox. Undoubtedly the extent and quality of the documentation, testing, and peer review of various models in the toolbox will vary. However, a model's inclusion in the toolbox should signify that the model has been judged to be the best available for meeting the goals for which it was designed and is applicable to conditions in California.

Information Flows and Documentation

The IMC will probably be devoting a substantial amount of time giving guidance to clients and, when applicable, to the public. They will need to be working with the clients who are requesting model applications, and in situations where they are not doing this work, they will need to be reviewing and approving the work of the agencies or contractors who are performing the modeling services. IMC would provide technical assistance as well as oversight and coordination among all CALSIM II modeling activities.

Requests for modeling are easy to make, and time and money are required to carry them out. Requests sent to this proposed IMC should reflect some thought by those requesting such model runs as to just why the model application is desired, and just how the results are to be used. We would propose that requests include such items as:

- Reason for modeling,

- Type of modeling (e.g., event based or continuous),
- Particular model preference if any, and why, and possible alternatives,
- Model output information (data) needed and why and when it is needed,
    - What questions are the model results going to answer?
    - What issues are being studied?
    - What decisions are to be made, or at least to be informed, based on these model results?
    - When are the model results needed?
    - What formats are desired for presenting the model results?
- Location or site being modeled and the spatial and temporal scales desired,
- Particular input data assumptions, boundary conditions and other regional assumptions required,
- Source of input data, and format required or desired for the output data,
- Model calibration and verification needs and preferred procedures if any,
- Money and time available for modeling,
- Extent (duration) of the simulations to be performed,
- Desired performance measures, other than variables being simulated, if any,
- Alternative scenarios to be modeled (i.e., number of simulation runs needed),
- Other analyses or model applications that may or will need the output from this model application,
- Sensitivity and uncertainty analyses needed, and for which decision variables and why,
- Client contact person,
- Requirements for intermediate reviews of results or needs for periodic review of modeling application process logs and documents, and
- Other particular requirements or needs.

The use of a model nearly always takes place within a broader context. The model itself can also be part of a larger whole, such as a network of models in which some are using the outputs of other models. These conditions may impose constraints on the simulation modeling project. All these considerations need to be specified in the modeling application request.

Along with the proposal, there should also be a simple order-of-magnitude estimate of the expected values of all relevant decision variables based on simple mass-balance analytical solution methods that can be used without requiring a computer. These estimated values should be used to validate (check the reasonableness of) selected portions of the model runs. If there are any serious discrepancies, it may signify a major problem in the model output.

Is all this paperwork useful? It is to the extent it leads to a more effective and efficient use of personnel, money and time. Preparing a formal modeling application request requires some serious thought as to just why this is necessary and just what information is needed to further the project or analysis. It involves defining the objectives that are to be accomplished. Writing this down in some detail helps reduce the differences in perception that can exist between those who need information and those who are going to provide that information (IMC or a contractor). The problem as stated is often not the problem as understood, by either

the client or the model user. In addition, problem perceptions and modeling objectives can change over the duration of a project. One should ask and answer the question of whether or not modeling in general is the right way to obtain the needed information. What are the alternatives to modeling?

The objective of any modeling project should be clearly understood with respect to the domain and the problem area, the reason for using a particular model, the questions to be answered by the model, the model assumptions and limitations, and the scenarios to be modeled. Throughout the project these objective components should be checked to see if any have changed and if they are being met.

If IMC is to serve as a central point to coordinate CALSIM II-related modeling activities, and to provide modeling services, it needs to have the authority to do so. This authority extends to giving advice on issues related to model and input data selection, and for reviewing, approving and prioritizing requests for services. Should contractors be involved in particular model applications, IMC must be authorized to specify the technical terms to be met and oversee the work done by the contractor. Finally IMC will need the financial and human resources needed to do this in a timely manner.

Modeling Application Documentation

One common problem of model studies once they are underway occurs when one wishes to go back over a series of simulation results to see what was changed or why a particular simulation was made or what was learned. It is also commonly difficult if not impossible for third parties to continue from the point at which any previous modeling project was terminated, especially if some time has passed. These problems are caused by a lack of information on how the study was carried out. What was the pattern of thought that took place? Which actions and activities were carried out? Who carried out what work and why? What choices were made? How reliable are the end results? These questions should be answerable if a model journal is kept. Just like computer programming documentation, modeling project documentation is often neglected under the pressure of time and perhaps because writing it is not as interesting as running the models themselves.

The paper trail of what has happened, what assumptions have been made, how calibration and verification were carried out, what results were obtained, why changes, if any, were made, what sensitivity analysis procedures were used and their results, and so on, could be contained in a modeling application documentation (MAD). Once the model application is completed, a copy of the MAD should be given to the requesting agency, as applicable and a copy should remain in IMC. These reports, or at least a summary of them, should be available for downloading from the web. Should further model applications be requested and approved, the requester as well as the IMC can refer to this previously prepared documentation to better understand what was done previously that pertains to the current request.

Model Calibration

Once a model is tested satisfactorily, it can be calibrated. Calibration of models such as CALSIM II are difficult because there are no historical observations of future scenarios to compare with model results. Historical runs, such as have been made, can provide some basis for calibration. In general the smaller the deviation between the calculated model results and the field observations, the better the model. This is true to a certain extent, as the deviations in a perfect model are only due to measurement errors. In practice, however, a good fit is by no means a guarantee of a good model.

The deviations between the model results and the field observations can be due to a number of factors. These factors include possible software errors, inappropriate modeling assumptions such as the (conscious) simplification of complex structures, neglecting certain processes, errors in the mathematical description or in the numerical method applied, inappropriate parameter values, errors in input data and boundary conditions, and measurement errors in the field observations.

To determine whether or not a calibrated model is a 'good' predictor, it should be validated or verified. Calibrated models should be able to reproduce field observations not used in calibration. Validation can be carried out for calibrated models if an independent data set has been kept aside for this purpose. If all available data are used in the calibration process in order to arrive at the best possible results, validation will not be possible. A decision to leave out validation may be a justifiable one especially when data are limited.

Philosophically it is impossible to know if a simulation model of a complex system is 'correct'. There is no way to prove it. Experimenting with a model, such as by carrying out multiple validation tests, can increase confidence in that model. After a sufficient number of successful tests, one might be willing to state that the model is 'good enough', based on the modeling project requirements. The model can then be regarded as having been validated, at least for the ranges of input data and field observations used in the validation.

If model predictions are to be made for situations or conditions for which the model has been validated, there may be some confidence in the reliability of those predictions. Yet one cannot be certain. Much less confidence can be placed on model predictions for conditions outside the range for which the model was validated.

While a model should not be used for extrapolations as commonly applied in predictions and in scenario analyses, this is often exactly the reason for the modeling project. What is likely to happen given events we have not yet experienced? A model's answer to this question should also include the uncertainties attached to these predictions. Depending on the type of model selected and used, one might end up predicting an incorrect future with great accuracy, or predicting the correct future with great uncertainty'. We don't yet know how to predict the correct future with great accuracy – so we do 'what ifs'. One can then argue about what scenarios – the ifs – are the most reasonable or probable, or about the impacts from improbable scenarios that you want to avoid should such scenarios occur.

Use the model

Once the model has been judged 'good enough,' the model may be used to obtain the information desired. Close communication between the client and the modeler during the modeling application process is essential to avoid any unnecessary misunderstandings about what information is wanted and the assumptions on which that information is to be based.

Before the end of this model-use step one should determine whether all the necessary simulations have been performed and whether they have been performed well. Questions to ask include

- did the model fulfill its purpose?
- are the results valid?
- are the quality requirements met?
- was the discretization of space and time chosen well?
- was the choice of the model restrictions correct?
- was the correct model and/or model program chosen?
- was the numerical approach appropriate?
- was the implementation performed correctly?
- what are the sensitive parameters (and other factors)?
- was an uncertainty analysis performed?

If any of the answers to these questions is no, then the situation should be corrected. If it cannot, the reason(s) for why it cannot be corrected should be documented in the model application document (MAD).

Interpret model results

Interpreting the information resulting from models is a crucial step in the modeling application process, especially in situations in which the client may only be interested in those results and not the way they were obtained. The model results can be compared to those of other similar studies. Are the results consistent? IMC must make that judgment. Any unanticipated results should be discussed and explained. The results should be judged with respect to the modeling project objectives.

The results of any modeling project typically include large files of time-series data. Only the most dedicated of clients will want to read those files. Thus these data must be presented in a more concise form. Statistical summaries should explicitly include any restrictions and uncertainties in the results. They should identify any gaps in the domain knowledge, thus generating new research questions or identifying the need for more field observations and measurements.

Report model results

Once the modeling application is completed, the organization doing the modeling will be responsible for preparing a report. The contents of this report should conform to the agreement

made between modeling organization and the client prior to the initiation of the modeling application (see above). Although the results of a model are very rarely used as the sole basis for policy decisions, those requesting model applications may have a responsibility to translate their model results into policy recommendations. Policymakers, managers, and indeed the participating stakeholders typically want simple and clear unambiguous answers to complex questions. Much of the scientifically justified discussion, say regarding the uncertainties associated with some of the data, included in the main body of a report are not included in the executive summary of that report. This executive summary is often the only part read by those responsible for making decisions. Therefore, the conclusions of the model study must not only be scientifically correct, but also concisely formulated, without jargon, and fully understandable by managers and policymakers. When preparing or reviewing contractor model results reports, the IMC should consider this need.

These model application and model results reports should include sufficient detail to allow others to reproduce the model study (including its results) and/or to proceed from the point where this study ended. The report therefore requires a clear indication of the validity, usability and any restrictions of the model results.

Data Management

CALSIM II and its associated or linked models will require data. They will also produce data. Many of these data will have spatial and temporal dimensions. This information must be documented (meta data), preserved, and made accessible to IMC customers, coordination agencies and others. IMC should participate in data management strategic development, storage, documentation and dissemination. It should work with data base managers of various agencies to help them satisfy the IMC's data management requirements.

The availability of quality assured data is a critical dependency that must be met to facilitate timely completion of model development, implementation and application. To mitigate the impact of the availability of data on the timeline for the major model completion deadlines, the following issues should be addressed. :

- Updating land use / land cover data at regular and timely intervals.
- Developing and maintaining a common modeling database. This data base should include infrastructure design and operating policy data as well as water quality, ecological, land use, economic and of course hydrological data. Many of these data sets will have spatial as well as temporal dimensions. Each data set should have an associated metadata file.
- Pre-processed and post-processed datasets from previous model runs should be archived along with its metadata file in a central location for ease of access and availability.
- Measures to insure the consistency and quality of the input data.
- Measures to insure adequate communication among model developers, users and stakeholders. This includes measures to assist in developing documentation appropriate for each type of stakeholder.

Support of IMC activities

Common failures of IMC type organizations are typically due to:

- Insufficient staff to enable cross-training. This may lead to the dependency on one person or a very small group of employees for each sub module or the overall effort.
- Inadequate funding to institute good project management discipline.
- Inadequate funding to contract for technical writers and software engineers.
- Inadequate funding to contract for peer reviews.

Risk assessments

A risk assessment of CALSIM II and its associated models and data should be completed. The timely availability of quality assured data for example, is a risk. Project risk management includes the processes concerned with identifying, analyzing, and responding to uncertainties. Risk management attempts to minimize the results of adverse events. As a guide, the template, such as shown at the end of this Appendix, may be used to facilitate the assessment of risks.

Problem Management

Given the high visibility and criticality of the CALSIM II modeling effort an issue or problem management process should be developed within IMC. Issue/problem management includes the process for identifying, communicating, and resolving issues and problems.

The purpose of this procedure is to ensure that:

- Issues are identified, reported, managed, and resolved in a timely and effective manner. Responsibility is assigned to an owner for reporting, managing and resolving each issue
- All affected stakeholders are aware of the status of the issues
- Escalation of unresolved issues take place according to a defined procedure

In order to ensure that project issues and problems are appropriately managed various issue/problem management steps should be identified and followed to track the actions taken to resolve the issue or problem throughout the life of a modeling project.

B. Managing Peer Reviews

One means of quality control involves peer reviews of the models, their associated software, and their applications. One possible means of facilitating the peer review processes and for maintaining control on the particular versions of CALSIM II and accompanying models used for SWP-CVP planning and management decisions is another reason to create an interagency modeling consortium (IMC) consisting of DWR, USBR, and other stakeholder organization personnel if they are interested and want to participate. As suggested above, this consortium could be responsible for maintaining a toolbox of 'acceptable' peer-reviewed models for use by the agencies and contractors. The peer reviews should be of the theory underlying each

model, the model's software, the documentation of that software, the model's functions and capabilities including those pertaining to model data input and output, model calibration and verification, sensitivity analyses, uncertainty analyses, user control (GUIs), spatial and temporal resolutions, limiting assumptions, and on the model (as opposed to code) documentation.

Just having evidence of published articles about a particular model in peer reviewed journals is not a substitute for a peer review of the model software and its applicability or suitability for certain types of analyses for SWP-CVP. Peer reviews of all models, their software, and their use should be accomplished by experts both within and outside of the originating agencies. 'Inside' agency (or internal) reviews may uncover some needed changes and identify other issues or problems that external reviewers could be asked to specifically examine and address. Internal reviews can make the external review process more effective, less costly and less time consuming.

Peer reviews are considered a key process area for Level 3 and higher of the Capability Maturity Model guidelines for improving the software process (Carnegie Mellon University, 1994). The purpose of peer review evaluations is to find defects in the model formulation and software and in its use, i.e., model application. Peer reviewers can also identify possible ways of correcting those defects, if any. If there are no defects, or after all known defects have been corrected, both the developers and users of any model and its software can have a stronger basis for believing that their product and its output are reliable.

Peer reviews serve the same function as accountants. Once a firm's financial records have been peer reviewed by accountants (assuming they are qualified, objective and honest) the board of directors as well as the stockholders will have more assurance of the liabilities and net worth of their firm, and just how well it is being managed. In this case it is the assurance of the quality of the models, their software, and on their use in project evaluations, that actual and potential users of the model results depend upon.

The types of problems and issues for which a model, its software, and its documentation are designed to address are called the model's 'application niche'. Peer review of model development should include the evaluation of the intended application niche along with consideration of other aspects of model performance. Users of any model should be aware of the types of analyses for which the model is best suited and those for which the model is not well suited. This, along with the results of a peer review of any model application, should help the potential model user, or the user of the model results, better understand the limitations of the scientific basis of the model and just how much confidence can be placed on the model output.

Peer review triggers

Clearly judgment will have to be exercised as to just when and in what detail a peer review needs to be implemented. However the triggers on when a decision about a peer review needs to be made can be defined.

As shown in Figure 2, decisions regarding peer review are needed when models are proposed for the tool box and when model applications are completed. Should IMC decide a peer review is warranted when either of those events takes place, they will have to decide on the type of review and its level of detail. They will also need to identify the individuals to be asked to carry out that peer review.

Peer reviews are going to take time and cost money. They will also require IMC time to prepare the documentation needed for the peer reviewers and to read and act on reports prepared by the peer reviewers. This will apply if the peer review is internal or external.

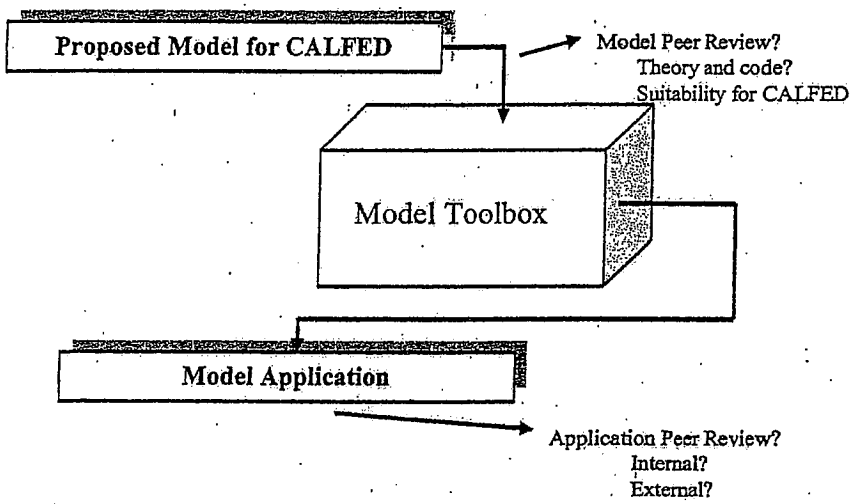


Figure 2. Schematic showing events where a peer review decision can be made.

The particular models and their associated software and documentation to be peer reviewed should be identified by the individuals or departments or agencies. This can include model process descriptions, software source code, documents, test results, and other supporting materials, as needed, for an adequate peer review of the entire model and its software. These products to be reviewed should be identified in writing and a written history of the review of different versions of each item should be maintained.

Events that take place in the progression of model development and use and subsequent modifications that warrant a peer review should be identified and specified in a written document. (This fits in to the model development and use documentation that should be maintained for Level 3 or higher CMM) When these events take place a peer review process should be considered, and if warranted, implemented. Depending on the event, the review can be solely internal, or it can involve an independent external review team as well.

Model application reviews should include an evaluation of the intended model application niche, and its applicability to current needs. Peer review may be appropriate for existing models when new information becomes available that could negate some or all of the conclusions of previous reviews or suggest a change in the currently specified application niche. Peer review of a model's applicability to a particular study should be planned well in advance of when model results are needed. The results of application reviews can influence the decisions made based on the model outputs. Once a peer review has been conducted for a particular model and its input data, peer reviews of subsequent applications of a model with similar inputs might be unnecessary. However, any time the model results may be controversial, or end up in litigation, another peer review may be justified.

Peer Review Process

The extent and process of performing and responding to peer reviews can vary in any organization. The ones discussed in this section attempt to follow the processes recommended by the Capability Maturity Model Level 3 guidelines.

Project peer review process should be specified in writing. A first step in this process should be to identify the particular modeling products and processes that will undergo peer review. This includes the models (i.e. the processes being modeled and the assumptions built into the models for describing these processes), their supporting software, the documentation of the model and its software, as well as all the written guidelines on how the models are to be used.

A second step is to perform an internal peer review prior to a model's use for project evaluation. It should be peer reviewed for accuracy, its suitability for use, and for identifying any possible errors in its logic, its coding, or in its documentation. Following an internal review, an external peer review can be performed.

Following the successful conclusion of internal and external peer reviews of a model and its documentation, the model can be applied to evaluate alternative projects. After the model has been applied to a particular project, the modeling process and its results should be peer reviewed to insure that the model has been applied properly, that the input data were appropriate, and that the conclusions drawn were valid.

Peer review teams should be selected, along with a peer review team leader. The particular personnel on the team will depend on the particular model and its software and documentation being reviewed. CALFED should have a list of qualified peer reviewers representing all applicable disciplines, both internal and external, that it can call upon to perform these reviews. The peer reviews are to be of the models and their use, not of the people who developed or used them. The reviews are to be used to evaluate the quality of modeling products and processes, not of the personnel involved.

Establishing and carrying out ongoing peer review processes costs money. Adequate funding must be made available to

1. identify and recruit a peer review team and team leader
2. prepare and distribute the peer review materials to the peer review team
3. support the time required for the team to review the materials prior to a team meeting
4. support the team meeting and to participate in it as appropriate (e.g., answering questions, conducting model experiments and sensitivity analyses, etc.)
5. reproduce and distribute the team report and to take actions as needed
6. monitor the modifications or changes being made to the model, its software, and its documentation, or redoing the model application, as needed.
7. prepare and distribute to model developers and potential users a report on the results of the peer review and the actions taken.

The particular peer review process may depend on just what is being peer reviewed and the resources and time available to perform the review. In general, however, the steps of a peer review could include the following:

1. DWR or CALFED should identify and establish a pool of possible reviewers representing various disciplines, with sufficient redundancy to allow for scheduling conflicts when ever some subset of those reviewers are needed. This includes both internal as well as external reviewers. What ever administrative work is need to establish this pool should be completed prior to when these reviewers will be needed.

2. At particular milestones in any new model development or in model application an internal peer review process could be initiated, to examine the modeling assumptions, the software that implements those assumptions in the case of model development or the data being used for model inputs in the case of model applications, and the documentation being prepared to describe the processes, to document the software code, and to document the tests that were run to test the code, or to document the results of the model application. If deemed appropriate, an external peer review could also be performed. If an external review is to take place, the particular reviewers need to be selected, notified, sent supporting documents, and be scheduled for one or more meetings, as needed. They should be issued contracts specifying the requirements (the checklist of items to be reviewed) and products expected.

3. Recommendations made by the peer review team need to be addressed and the actions taken along with the rationale for those actions should be documented.

4. The peer review team should review the actions taken and the results obtained from these actions. If not judged acceptable new recommendations should be made and submitted. A final report should be prepared by the peer review team when all recommendations have been successfully implemented or addressed, or if no further actions based on review team's recommendations will be taken by the model developers or users.

The time and effort required for various levels of review should also be assessed and provided to the review team so that they can carry out the level of review requested of them. Otherwise the reviews may be superficial and while appearing to be peer reviewed, a model and its

associated products may in fact be inadequately reviewed. Peer review teams have the responsibility to specify in writing the scope and limitations of their reviews.

As was the case for this peer review panel, the materials to be sent to the review team to allow them to prepare for their meeting should include the statement of review objectives and the level of detail desired, the applicable requirements and standards upon which to judge the adequacy of the products being reviewed, and of course the material that is to be reviewed. There should be a list of questions for the reviewers to address. Each review team member should be assigned and given responsibility for answering specific questions and for completing specific aspects of the overall review. All team members should be given specific review standards or requirements, including the expected completion dates. Checklists should be provided the review team that are applicable to the specific type of product being reviewed and the level of detail to be examined. These checklists will contain the criteria for judging the product, such as compliance with any standards and procedures, completeness, correctness, rules of construction, and maintainability.

Peer Review Issues and Questions

Each model development or application review will dictate its own special set of questions to be addressed. Some of these questions could relate to:

- Model Purpose and Objective
  - Use of model related to decisions being considered.
  - Model application niche, and why.
  - Model strengths and weaknesses –is it the best model?
- Model Processes and Limitations
  - Model processes, spatial and temporal scales, grid resolution.
  - Model variables and level of aggregation.
- Model Theoretical Basis
  - Model algorithms, numerical or analytical methods,
  - Model process formulation
  - Modeling approach in comparison with other models
  - Any shortcomings in relation to application niche
- Model Parameter Estimation
  - Methods used
  - Data available for parameter estimation
  - Parameter estimate reliabilities
  - Boundary conditions and appropriateness.
- Model Input Data Quantity/Quality
  - Data used in design of model
  - Data adequacy (quantity, quality, resolution) for model purpose and application
  - Data necessary for application of model
  - Key data gaps in model application
  - Additional data needs and why
- Model Key Assumptions
  - Basis for major assumptions

- Sensitivity of model outputs to key assumptions
- Sensitivity of potential decisions to key assumptions
- Ease in modifying key assumptions

- Model Performance Measures
  - Criteria for assessing model performance
  - Correspondence of model output with measured observed data
  - Any model bias throughout range of model predictions
  - Variability and uncertainty analyses and representations in model results
  - What determines model's variability and uncertainty.
  - Model performance relative to others in application niche
- Model Documentation and User's Guide
  - Clarity of documentation, comprehensiveness of user's guide
  - Model applicability and limitations
  - Input data requirements for calibration, verification, model runs
  - Post modeling analyses, display and interpretation of results
  - Model code documentation
  - Model application documentation examples for prospective users.
- Review Retrospective
  - How well model and its application meet objectives and needs of project
  - Possible changes in the model to improve model performance
  - Robustness of model solutions to small changes in uncertain parameters, etc.
  - Ease of including uncertainty analyses associated with uncertain input data.
  - Key research needs for model improvement.

Peer Review Completion Reports

Procedures need to be established to track and confirm actions based on suggested changes or modifications in the material being reviewed. Once these actions are taken and completed, and documented, the peer review process for that particular product is completed. Peer review completion reports should contain data on what was reviewed and the results of the review. These data should include a description of the products that were reviewed, the level of detail of the review, any review limitations or qualifications, the number and backgrounds of the reviewers, the time spent preparing for and during review team meetings, the defects found and recommendations made, and the actions taken to address these recommendations.

Overall Peer Review Evaluations

The IMC or initiating agency should document the planning for and scheduling of peer reviews. The products to be reviewed and the level of detail to be examined also need to be specified. The procedures to be followed for selecting peer review team members, and the team leader, should also be determined and documented. Procedures for training potential reviewers, if such training is needed, should be identified and implemented, as required.

Periodically the IMC or applicable agency should assess just how well the plan described in the preceding paragraph is being carried out, and just how beneficial these peer reviews are to the overall modeling effort. Measures should be identified and used to determine the status of the

peer review activities. These measures could include the number of completed peer reviews performed compared to the number expected to be performed, the overall effort expended on peer reviews compared to that expected, and the number and extent of peer review recommendations requiring actions.

At a minimum these periodic reviews should verify that

1. The planned peer reviews and/or audits are conducted.
2. The peer review leaders are adequately trained for their roles.
3. The reviewers are properly trained or experienced in their roles.
4. The processes for preparing for and conducting peer reviews, and for following up on reviewer's recommendations are adequate and are being followed.
5. The reporting of peer review results is complete, accurate, timely and is being made available to model users.

Risk Management Template

Risk Definition Name	Enter a short name that uniquely defines the risk
Risk #	Enter a unique number assigned to the risk. Range starts with 1 and continues.
Date Risk Identified	Enter the date the risk was identified
Risk Identification Source	Enter the source of the risk identification. In example, meeting name, group, or person.
Risk Owner	Enter the name of the person who will be responsible for ensuring the risk is approved, managed, periodically assessed, communicated, and tracked through closed or transfer.
Risk Detailed Description	Enter a detailed description of the risk so that a reader clearly understands the risk.
Probable Impact of Risk on Project (H, M, L)	Enter the impact on the project. o High = the risk will most likely occur and the impact could prevent the project from achieving its purpose. o Medium = there is a 50/50 change the risk would occur and the impact is serious but the project could still achieve its purpose if appropriately managed. o Low = there is a low probability that the risk would occur and minimal impact to the project's purpose.
Probable Impact of Risk on Project Costs	Enter the impact on the project in dollars. Determine what the potential cost to the project would be if the risk occurs.
Probable Impact of Risk on Project Schedule	Enter the schedule impact on the project. Determine how the schedule would be potentially impacted if the risk occurs.
Probable Impact of Risk on Project Results	Enter the impact on the project. Determine how the overall project purpose and results will be potentially impacted if the risk occurs.
Detailed Plan to Mitigate or Transfer Risk	Enter the detailed plan to mitigate the risk or a statement that the risk will be accepted. Mitigation could include ways to minimize, avoid, or transfer the risk to another party or group. Risk transfer would include evidence of agreement by the accepting party.
Detailed Project Action Items Required to Mitigate or Transfer Risk	Enter the detailed action items required to mitigate the risk. These items will be summarized and assigned within the project Action Log, along with an action item owner, and target completion date.
Detailed Project Plan Tasks Required to Mitigate Risk	Enter the detailed project plan task required to mitigate the risk. These items will be summarized and contained within the MS Project Schedule along with the effort, duration, schedule, and assigned resources.
Comments	Enter any permanent comments that cannot be included in the above items.
Referenced Documents	Enter any documents that a reader should consider in understanding, analyzing, mitigating, or accepting this risk.
Date Risk Closed	Enter the date this risk was closed. This would include when all action items or project tasks were completed, or the risk was transferred to another party or group.

Appendix F: Analysis of the November 2003 CALSIM II Validation Report

The following comments come from an analysis of the model results presented in the validation report *'CALSIM II Simulation of Historical SWP/CVP Operations'*, DWR (2003). The observations relate to the formulation of the model at November 2003. Changes might be made to that formulation which could resolve these issues.

Overestimation of Project Deliveries

The validation run suggests that the modeled demands included in CALSIM II overestimate the actual demands. CVP demands south of the Delta are assumed to be always equal to the contract entitlement whereas the observed deliveries in unrestricted years are consistently less than this amount. The modeled North of Delta deliveries are also consistently higher than observed. The modeled and observed CVP deliveries from the validation report are listed in Table 1.

Table 1. Comparison of modelled and observed CVP deliveries (1975-1998)

Project	Simulated Delivery (Taf/yr)	Historical Delivery (taf/yr)	Difference (taf/yr)	% Difference
CVP North of Delta	1960	1750	210	12
CVP South of Delta	2650	2490	160	6.4

Because the SWP south of delta demands were set to historical deliveries in many years, comparison with the historical deliveries in the validation report is of limited validity. However the fact that the historical SWP deliveries over the last ten years have averaged only 2385 taf/year while the modeled 'year 2001 development' SWP Delta deliveries reported in the 2002 State Water Project Delivery Reliability Report average 3090 taf/year, suggests that modeled SWP deliveries may also be too high.

Allocations to Project Contractors

Seasonal allocations to SWP and CVP contractors are made on the basis of water in storage, forecast inflows, projected carryover storage requirements and in-Basin and Delta regulatory requirements. The allocation processes used by the operators and those used by CALSIM II, are not identical. An examination of the way that CALSIM II has restricted project deliveries during the dry period of 1987-1992 (Figures 10, 16, 17 and 24 of the validation report) suggests that CALSIM II has allocated less water in the early years of the dry sequence than occurred in practice and consequently had more water available in 1991 and 1992 when the most severe restrictions were experienced. The carryover storage rules adopted can have a significant impact on the expected frequency and severity of water supply restrictions. The

model rules need to be examined to ensure that the accurately reflect the way the system will be managed in the future.

San Luis Reservoir Operation

The rules used by the system operators for transferring water from headwater storages to the San Luis Reservoir can have a significant impact on:

- the pattern of flow in the Delta,
- the operation of accounting rules between the SWP and the CVP and
- opportunities for SWP wheeling of CVP water and possibly the availability of Article 21 water to SWP contractors.

A comparison of the modeled and observed storage behavior of the SWP component of San Luis (Figure 15) reveals that the model consistently underestimates the volume in storage. A comparison of the CVP component of the storage (Figure 23) indicates that the actual storage is filled earlier in the season and that the actual storage is also slightly higher than the modeled.

Users of CALSIM II output need to be confident that the rules adopted by the model for determining these transfers reflect the way this component of the system will be operated in the future.

Appendix G: Some Principles for Strategic Water Analysis for the California Water Plan Bulletin 160-03 (from the stakeholder review Draft, Sept. 30, 2003)

Strategy:

1) A frequently amended strategic document will lay out DWR's strategic analysis framework and identify the technical objectives, roles, and responsibilities of major DWR data collection efforts and analytical tools and their interactions and their responsible managers.

Transparency:

2) All data and models should be in the public domain and available on the web.
3) All data and models should have significant documentation.
4) Known limitations should be documented.

Longer-term viability:

5) Modularity: Major analytical tools will be designed and implemented to fit modularly and explicitly within the larger strategic analysis framework.
6) Adaptive data management framework: Major data efforts will fall within a larger data management framework, including protocols for data documentation and updating, and documentation of limitations.
7) A frequently-updated document will outline short-term and long-term efforts, budgets, and responsibilities for continuous improvement of analytical tools and data, with policy for continued user, local agency, and stakeholder involvement.

Coverage:

8) Spatial coverage for the basic data and analytical framework will be statewide.
9) Local and regional water management and resources will be explicitly represented.

Accountability and Quality Control:

10) In developing analytical tools, systematic efforts should be made to involve local agencies and stakeholders.
11) Major analytical products will undergo external review by a) external unaffiliated experts and b) local agencies whose systems are included in the model. User groups will exist for all major analytical products.
12) DWR's strategic analysis framework will undergo periodic internal and external review.

Appendix H: Model Sensitivity and Uncertainty Analysis

(This is a draft of a book chapter by DPL/JRS that may be useful for CALSIM II developers)

1. Introduction
2. Issues, concerns, and terminology
3. Variability and uncertainty in model output
   - 3.1 Natural variability
   - 3.2 Knowledge uncertainty
   - 3.3 Decision uncertainty
4. Sensitivity and uncertainty analyses
   - 4.1 Sensitivity Analyses
   - 4.2 Uncertainty Analyses
5. Performance indicator uncertainties
   - 5.1 Performance measure target uncertainty
   - 5.2 Distinguishing differences between performance indicator distributions
6. Communicating model output uncertainty
7. Conclusions
8. References

The usefulness of any model is in part dependent on the accuracy and reliability of its output data. Yet, because all models are imperfect abstractions of reality, and because precise input data are rarely if ever available, all output values are subject to imprecision. The input data and modeling uncertainties are not independent of each other. They can interact in various ways. The end result is imprecision and uncertainty associated with model output. This chapter focuses on ways of identifying, quantifying, and communicating the uncertainties in model outputs.

1. Introduction

Models are the primary way we have to estimate the multiple affects of alternative water resource system design and operating policies. Models predict the values of various system performance indicators. Model outputs are based on model structure, hydrologic and other time-series inputs and a host of parameters whose values describe the system being simulated. Even if these assumptions and input data reflect, or are at least representative of, conditions believed to be true, we know they will be wrong. Our models are always simplifications of the

real systems we are studying. Furthermore, we simply cannot forecast the future with precision. So we know the model outputs of future conditions are uncertain estimates, at best.

Some prediction uncertainties can be reduced by additional research and data collection and analysis. Before undertaking expensive studies to gather and analyze additional data it is reasonable to ask what improvement in estimates of system performance or what reduction in the uncertainty associated with those estimates would result if all data and model uncertainties could be reduced. Such information helps determine how much one would be willing to 'pay' to reduce prediction uncertainty. If prediction uncertainty on average is costing a lot, it may pay to invest in additional data collection, more studies, or in better models all aimed at reducing that prediction uncertainty. If that uncertainty has no, or only a very modest, impact on the likely decision that is to be made, one should find other issues to worry about.

If it appears that reducing prediction uncertainty is worthwhile, then one should consider how best to do it. If doing this involves obtaining additional information, then it is clear that the value of this additional information, however measured, should exceed the cost of obtaining it. The value of such information will be the increase in system performance, or the reduction in its variance, that one can expect from obtaining such information. If additional information is to be obtained, it should be that information which reduces the uncertainties considered important, not the unimportant ones.

This chapter reviews some methods for identifying and communicating model prediction uncertainty. The discussion begins with a review of the causes of risk and uncertainty in model output. It then examines ways of measuring or quantifying uncertainty and model output sensitivity to model input imprecision, concentrating on methods that seem most relevant or practical for large-scale regional simulation modeling. It builds on some of the statistical methods reviewed in Chapter III and the modeling of risk and uncertainty in Chapter VI.

2. Issues, concerns, and terminology

Outcomes or events that cannot be predicted with certainty are often called risky or uncertain. Some individuals draw a special and interesting distinction between risk and uncertainty. In particular, the term risk is often reserved to describe situations for which probabilities are available to describe the likelihood of various events or outcomes. If probabilities of various events or outcomes cannot be quantified, or if the events themselves are unpredictable, some would say the problem is then one of uncertainty, and not of risk. In this chapter what is not certain is considered uncertain, and uncertainty is often described by a probability distribution. When the ranges of possible events are known and their probabilities are measurable, risk is called objective risk. If the probabilities are based solely on human judgment, the risk is called subjective risk.

Such distinctions between objective and subjective risk, and between risk and uncertainty, rarely serve any useful purpose to those developing and using models. Likewise the distinctions are often unimportant to those who should be aware of the risks or uncertainties associated with system performance indicator values.

Uncertainty in information is inherent in future-oriented planning efforts. Uncertainty stems from inadequate information and incorrect assumptions, as well as from the variability of natural processes. Water managers often need to identify both the uncertainty as well as the sensitivity of, or changes in, system performance indicator values due to the any changes in possible input data and parameter values from what were predicted. They need to reduce this level of uncertainty to the extent practicable. Finally, they need to communicate the residual uncertainties clearly so that decisions can be made with this knowledge and understanding.

Sensitivity analysis can be distinguished from uncertainty analysis. Sensitivity analysis procedures explore and quantify the impact of possible errors in input data on predicted model outputs and system performance indices. Simple sensitivity analysis procedures can be used to illustrate either graphically or numerically the consequences of alternative assumptions about the future. Uncertainty analyses employing probabilistic descriptions of model inputs can be used to derive probability distributions of model outputs and system performance indices. Figure 1 illustrates the impact of both input data sensitivity and input data uncertainty on model output uncertainty.

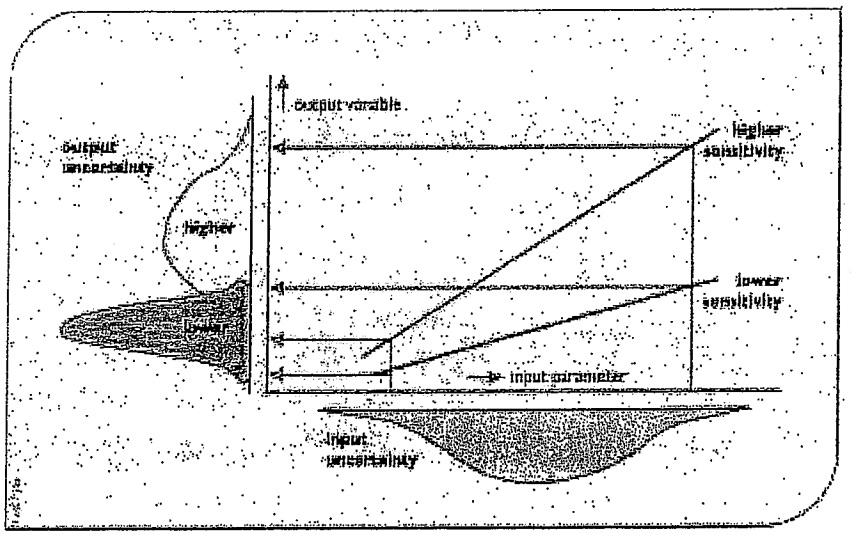


Figure 1. Schematic diagram showing relationship among model input parameter uncertainty and sensitivity to model output variable uncertainty (Lal, 1995).

It is worthwhile to explore the transformation of uncertainties in model inputs and parameters into uncertainty in model outputs when conditions differ from those reflected by the model inputs. Historical records of system characteristics are typically used as a basis for model inputs. Yet conditions in the future may change. There may be changes in the frequency and

amounts of precipitation, changes in land cover and topography, and changes in the design and operation of control structures, all resulting in changes of water stages and flows, and their qualities, and consequently changes in the impacted ecosystems.

If asked how the system would operate with inputs similar to those in the historical database, the model should be able to interpolate within the available knowledge base to provide a fairly precise estimate. Still that estimate will not be perfect. This is because our ability to reproduce current and recent operations is not perfect, though it should be fairly good. If asked to predict system performance for situations very different from those in the historical knowledge base, or when the historical data are not considered representative of what might happen in the future, say due to climate change, such predictions become much less precise. There are two reasons why. First, our description of the characteristics of those different situations or conditions may be imprecise. Second, our knowledge base may not be sufficient for calibrating model parameters in ways that would enable us to reliably predict how the system will operate under conditions unlike those that have been experienced historically. The more conditions of interest are unlike those in the historical knowledge base, the less confidence we have that the model is providing a reliable description of systems operation. Figure 2 illustrates this issue.

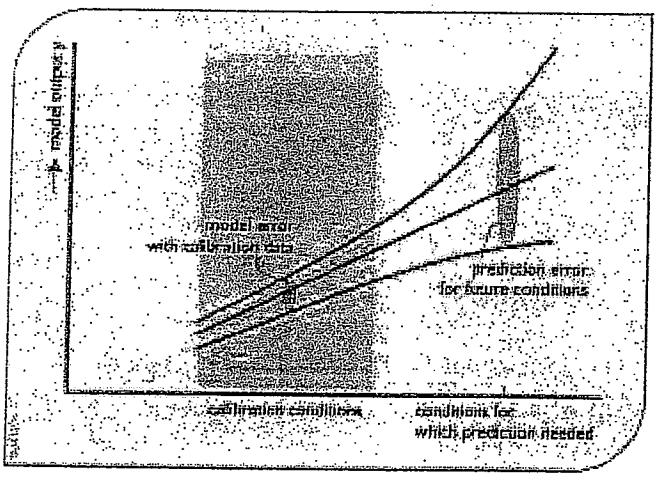


Figure 2. The precision of model predictions is affected by the difference between the conditions or scenarios of interest and the conditions or scenarios for which the model was calibrated.

Clearly a sensitivity analysis needs to consider how well a model can replicate current operations, and how similar the target conditions or scenarios are to those described in the

historical record. The greater the required extrapolation from what has been observed, the greater will be the importance of parameter and model uncertainties.

The relative and absolute importance of different parameters will depend on the system performance indicators of interest. Seepage rates may have a very large local effect, but a small global effect. Changes in system-wide evapotranspiration rates will likely impact system-wide flows. The precision of model projections and the relative importance of errors in different parameters will depend upon the:

(1) precision with which the model can reproduce observed conditions,
(2) difference between the conditions predicted and the historical experience included in the knowledge base, and the
(3) system performance characteristics of interest.

Errors and approximations in input data measurement, parameter values, model structure and model solution algorithms, are all sources of uncertainty. While there are reasonable ways of quantifying and reducing these errors and the resulting range of uncertainty of various system performance indicator values they are impossible to eliminate. Decisions will still have to be made in the face of a risky and uncertain future. Decisions can be modified as new data and knowledge are obtained in a process of adaptive management.

There is also uncertainty with respect to human behavior and reaction related to particular outcomes and their likelihoods, i.e., to their risks and uncertainties. As important as risks and uncertainties associated with human reactions are to particular outcomes, they are not usually part of the models themselves. Social uncertainty may often be the most significant component of the total uncertainty associated with just how a water resource system will perform. For this reason we should seek designs and operating policies that are flexible and adaptable.

When uncertainties associated with system operation under a new operating regime are large, one should anticipate the need to make changes and improvements as experience is gained and new information accumulates. When predictions are highly unreliable, responsible managers should favor actions that are robust (e.g., good under a wide range of situations), gain information through research and experimentation, monitor results to provide feedback for the next decision, update assessments and modify policies in the light of new information, and avoid irreversible actions and commitments.

3. Variability and uncertainty in model output

Differences between model output and observed values can result from either natural variability, say caused by unpredictable rainfall, evapotranspiration, water consumption, and the like, and/or by both known and unknown errors in the input data, the model parameters, or the model itself. The later is sometimes called knowledge uncertainty but it isn't always due to a lack of knowledge. Models are always simplifications of reality and hence 'imprecision' can result. Sometimes imprecision occurs because of a lack of knowledge, such as just how a

particular species will react to various environmental and other habitat conditions. Other times known errors are introduced simply for practical reasons.

Imperfect representation of processes in a model constitutes model structural uncertainty. Imperfect knowledge of the values of parameters associated with these processes constitutes model parameter uncertainty. Natural variability includes both temporal variability and spatial variability, to which model input values may be subject.

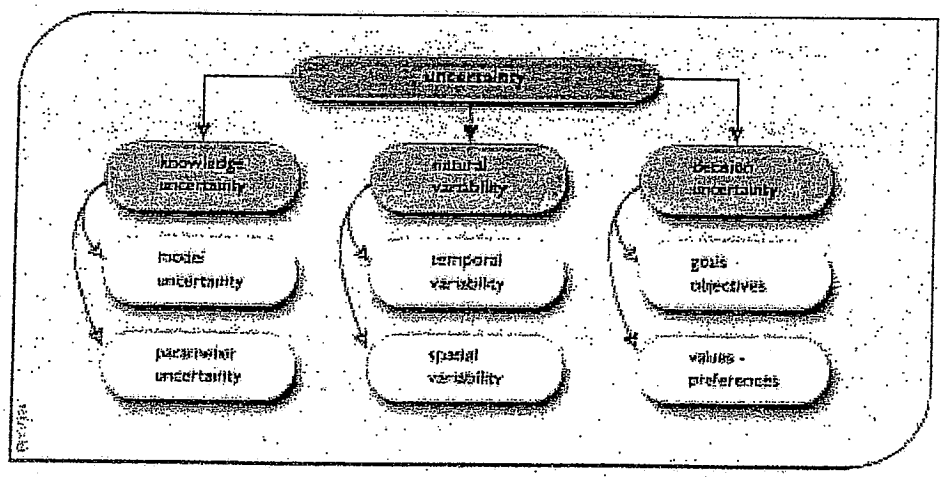


Figure 3. One way of classifying types of uncertainty.

Figure 3 illustrates these different types of uncertainty. For example, the rainfall measured at a weather station within a particular model grid cell may be used as an input value for that cell, but the rainfall may actually vary at different points within that cell and its mean value will vary across the landscape. Knowledge uncertainty can be reduced through further measurement and/or research. Natural variability is a property of the natural system, and is usually not reducible at the scale being used. Decision uncertainty is simply an acknowledgement that we cannot predict ahead of time just what decisions individuals and organizations will make, or even just what particular set of goals or objectives will be considered and the relative importance of each.

Rather than contrasting 'knowledge' uncertainty vs. natural variability vs. decision uncertainty, one can classify uncertainty in another way based on specific sources of uncertainty, such as those listed below, and address ways of identifying and dealing with each source of uncertainty.

Informational Uncertainties:

- imprecision in specifying the boundary and initial conditions that impact the output variable values
- imprecision in measuring observed output variable values

Model Uncertainties:

- uncertain model structure and parameter values
- variability of observed input and output values over a region smaller than the spatial scale of the model
- variability of observed model input and output values within a time smaller than the temporal scale of the model. (e.g., rainfall and depths and flows within a day)
- errors in linking models of different spatial and temporal scales

Numerical Errors:

- errors in the model solution algorithm

3.1 Natural variability

The main source of hydrologic model output value variability is the natural variability in hydrological and meteorological input series. Periods of normal precipitation and temperature can be interrupted by periods of extended drought and intense meteorological events such as hurricanes and tornadoes. There is no reason to think such events will not continue to occur and become even more frequent and extreme. Research has demonstrated that climate has been variable in the past and concerns about anthropogenic activities that may increase that variability increase each year. Sensitivity analysis can help assess the affect of errors in predictions if those predictions are based only on past records of historical time-series data describing precipitation, temperature and other exogenous forces across and on the border of the regions being studied.

Time series input data are often actual, or at least based on, historical data. The time-series values typically describe historical conditions including droughts and wet periods. What is distinctive about natural uncertainty, as opposed to errors and uncertainty due to modeling limitations, is that natural variability in meteorological forces cannot be reduced by improving the model's structure, increasing the resolution of the simulation, or by better calibration of model parameters.

Errors result if meteorological values are not measured or recorded accurately, or if mistakes are made in the generation of computer data files. Furthermore, there is no assurance the statistical properties of historical data will accurately represent the statistical properties of future data. Actual future precipitation and temperature scenarios will be different from those in the past, and this difference in many cases may have a larger affect than the uncertainty due to incorrect parameter values. However, the affects of uncertainties in the parameter values

used in stochastic generation models are often much more significant than the affects of using different stochastic generation models (Stedinger and Taylor, 1982).

While variability of model output is a direct result of variability of model input (e.g., hydrologic and meteorological data), the extent of the variability, and the lower and upper limits of that variability, may also be affected by errors in the inputs, the values of parameters, initial boundary conditions, model structure, processes and solution algorithms.

Figure 4 illustrates the distinction between the variability of a system performance indicator due to input data variability, and the extended range of variability due to the total uncertainty associated with any combination of the causes listed in the previous section. This extended range is what is of interest to water resource planners and managers.

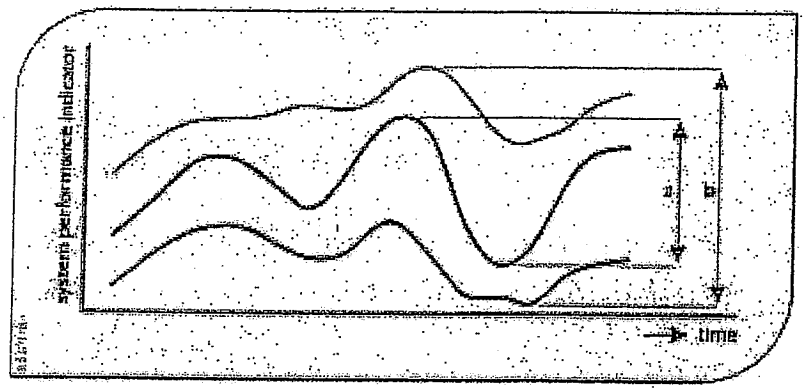


Figure 4. Time-series of model output or system performance showing variability over time. Range "a" results from the natural variability of input data over time. The extended range "b" results from the variability of natural input data as well as from imprecision in input data measurement, parameter value estimation, model structure and errors in model solution algorithms. The extent of this range will depend on the confidence level associated with that range.

What can occur in practice is a time-series of system performance indicator values that can range anywhere within or even outside the extended range, assuming the confidence level of that extended range is less than 100%. The confidence one can have that some future value of a time series will be within a given range is dependent on two factors. The first is the number of measurements used to compute the confidence limits. The second is on the assumption that those measurements are representative of - come from the same statistical or stochastic process yielding - future measurements. Figure 5 illustrates this point. Note that the time series may even contain values outside the range "b" defined in Figure 4 if the confidence level of that range is less than 100%. Confidence intervals associated with less than 100% certainty will not include every possible value that might occur.

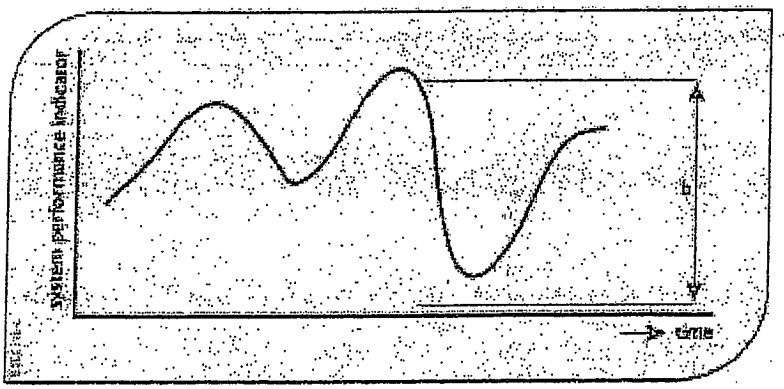


Figure 5. Typical time series of model output or system performance indicator values that are the result of input data variability and possible imprecision in input data measurement, parameter value estimation, model structure and errors in model solution algorithms.

3.2 Knowledge uncertainty

Referring to Figure 3, knowledge uncertainty includes model structure and parameter value uncertainties. First we consider parameter value uncertainty including boundary condition uncertainty, and then model and solution algorithm uncertainty.

3.2.1 Parameter value uncertainty

A possible source of uncertainty in model output results from uncertain estimates of various model parameter values. If the model calibration procedure were repeated using different data sets, different parameter values would result. Those values would yield different simulated system behavior, and thus different predictions. We can call this parameter uncertainty in the predictions because it is caused by imprecise parameter values. If such parameter value imprecision were eliminated, then the prediction would always be the same and so the parameter value uncertainty in the predictions would be zero. But this does not mean that predictions would be perfectly accurate.

In addition to parameter value imprecision, uncertainty in model output can result from imprecise specification of boundary conditions. These boundary conditions can be either fixed or variable. However, because they are not being computed based on the state of the system, their values can be uncertain. These uncertainties can affect the model output, especially in the vicinity of the boundary, in each time step of the simulation.

3.2.2 Model structural and computational errors

Uncertainty in model output can also result from errors in the model structure compared to the real system, and approximations made by numerical methods employed in the simulation. No matter how good our parameter value estimates, our models are not perfect and there is a residual model error. Increasing model complexity to more closely represent the complexity of the real system may not only add to the cost of data collection, but also introduce even more parameters, and thus even more potential sources of error in model output. It is not an easy task to judge the appropriate level of model complexity, and to estimate the resulting levels of uncertainty associated with various assumptions regarding model structure and solution methods. Kuczera (1988) provides an example of a conceptual hydrologic modeling exercise with daily time steps where model uncertainty dominated parameter value uncertainty.

3.3 Decision uncertainty

Uncertainty in model predictions can result from unanticipated changes in what is being modeled. These can include changes in nature, human goals, interests, activities, demands, and impacts. An example of this is the deviation from standard or published operating policies by operators of infrastructure such as canal gates, pumps, and reservoirs in the field, as compared to what is specified in documents and incorporated into the water systems models. Comparing field data with model data for model calibration may yield incorrect calibrations if operating policies actually implemented in the field differ significantly from those built into the models. What do operators do in times of stress? And can anyone identify a place where deviations from published policies do not occur?

What humans will want to achieve in the future may not be the same as what they want today. Predictions of what people will want in the future are clearly sources of uncertainty. A perfect example of this is in the very flat Greater Everglades region of south Florida in the US. Fifty years ago folks wanted the swampy region protected from floods and drained for agricultural and urban development. Today many want just the opposite at least where there are no human settlements. They want to return to a more natural hydrologic system with more wetlands and unobstructed flows, but now for ecological restoration objectives that were not a major concern or much appreciated some half a century ago. Once the mosquitoes return and if the sea level continues to rise, future populations who live there may want more flood control and drainage again. Who knows? Complex changing social and economic processes influence human activities and their demands for water resources and environmental amenities over time. Some of these processes reflect changes in local concerns, interests and activities, but population migration and many economic activities and social attitudes can also reflect changing national and international trends.

Sensitivity scenarios that include human activities can help define the affects of those activities within an area. It is important that careful attention go into the development of these alternative scenarios so that they realistically capture the forces or stresses that the system may face. The history of systems studies are full of examples where the issues studied were rapidly

overwhelmed by much larger social forces resulting from, for example, the relocation of major economic activities, an oil embargo, changes in national demand for natural resources, economic recession, sea-level rise, an act of terrorism, or even war. One thing is sure; the future will be different than the past, and no one is certain just how.

3.3.1 Surprises

Water resource managers may also want to consider how vulnerable a system is to undesirable environmental surprises. What havoc might an introduced species like the zebra mussel invading the Great Lakes of North America have in a particular watershed? Might some introduced disease suddenly threaten key plant or animal species? Might management plans have to be restructured to address the survival of some species such as salmon in the Rhine River in Europe or in the Columbia River in North America? Such uncertainties are hard to anticipate when by their nature they are truly surprises. But surprises should be expected. Hence system flexibility and adaptability should be sought to deal with changing management demands, objectives, and constraints.

4. Sensitivity and uncertainty analyses

An uncertainty analysis is not the same as a sensitivity analysis. An uncertainty analysis attempts to describe the entire set of possible outcomes, together with their associated probabilities of occurrence. A sensitivity analysis attempts to determine the relative change in model output values given modest changes in model input values. A sensitivity analysis thus measures the change in the model output in a localized region of the space of inputs. However, one can often use the same set of model runs for both uncertainty analyses and sensitivity analyses. It is possible to carry out a sensitivity analysis of the model around a current solution and then use it as part of a first order uncertainty analysis.

This discussion begins by focusing on some methods of uncertainty analysis. Then various ways of performing and displaying sensitivity analyses are reviewed.

4.1 Uncertainty Analyses

Recall that uncertainty involves the notion of randomness. If a value of a performance indicator or performance measure, or in fact any variable, like the phosphorus concentration or the depth of water at a particular location varies and this variation over space and time cannot be predicted with certainty, it is called a random variable. One cannot say with certainty what the value of a random variable will be but only the likelihood or probability that it will be within some specified range of values. The probabilities of observing particular ranges of values of a random variable are described or defined by a probability distribution. There are many types of distributions and each can be expressed in several ways as presented in Chapter III.

Suppose the random variable is X. If the observed values of this random variable can be only discrete values, the probability distribution of X can be expressed as a histogram, as shown in Figure 6a. The sum of the probabilities for all possible outcomes must equal 1. If the random variable is a continuous variable that can assume any real value over a range of values, the probability distribution of X can be expressed as a continuous distribution as shown in Figure 6b. The shaded area under the density function for the continuous distribution is 1. The area between two values of the continuous random variable, such as between u and v in Figure 6c, represents the probability that the observed value x of the random variable value X will be within that range of values.

The probability distribution, $P_X(x)$ shown in Figure 6 (a) is called a probability mass function. The probability distributions shown in Figure 6 (b and c) are called a probability density functions (pdf) and are denoted by $f_X(x)$. The subscript X of P_X and f_X represents the random variable, and the variable x is some value of that random variable X.

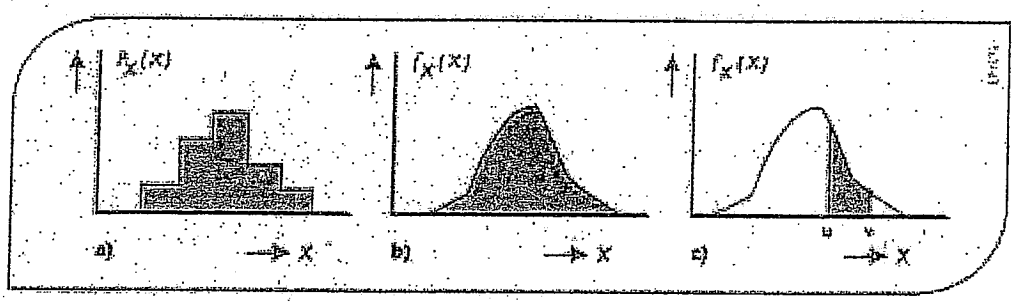


Figure 6. Probability distributions for a discrete or continuous random variable X. The area under the distributions (shaded areas in a and b) is 1, and the shaded area in c is the probability that the observed value x of the random variable X will be between u and v.

Uncertainty analyses involve identifying characteristics of various probability distributions of model input and output variables, and subsequently functions of those random output variables that are performance indicators or measures. Often targets associated with these indicators or measures are themselves uncertain.

A complete uncertainty analysis would involve a comprehensive identification of all sources of uncertainty that contribute to the joint probability distributions of each input or output variable. Assume such analyses were performed for two alternative project plans, A and B, and that the resulting probability density distributions for a specified performance measure were as shown in Figure 7. Figure 7 also identifies the costs of these two projects. The introduction of two performance criteria, cost and probability of exceeding a performance measure target (e.g., a pollutant concentration standard) introduces a conflict where a tradeoff must be made.

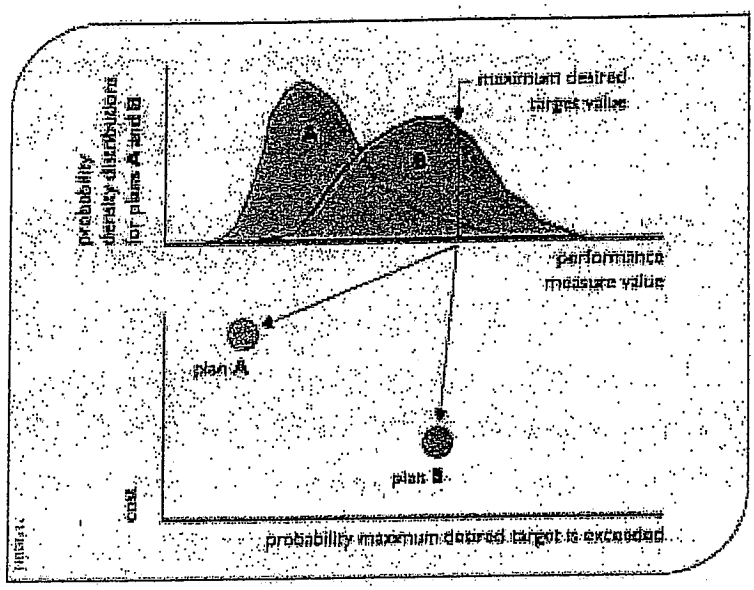


Figure 7. Tradeoffs involving cost and the probability that a maximum desired target value will be exceeded. In this illustration we want the lowest cost (*B* is best) and the lowest probability of exceedance (*A* is best).

4.1.1 Model and model parameter uncertainties

Consider a situation as shown in Figure 8, in which for a specific set of model inputs, the model outputs differ from the observed values, and for those model inputs, the observed values are always the same. Here nothing randomly occurs. The model parameter values or model structure needs to be changed. This is typically done in a model calibration process.

Given specific inputs, the outputs of deterministic models are always going to be the same each time those inputs are simulated. If for specified inputs to any simulation model the predicted output does not agree with the observed value, as shown in Figure 8, this could result from imprecision in the measurement of observed data. It could also result from imprecision in the model parameter values, the model structure, or the algorithm used to solve the model.

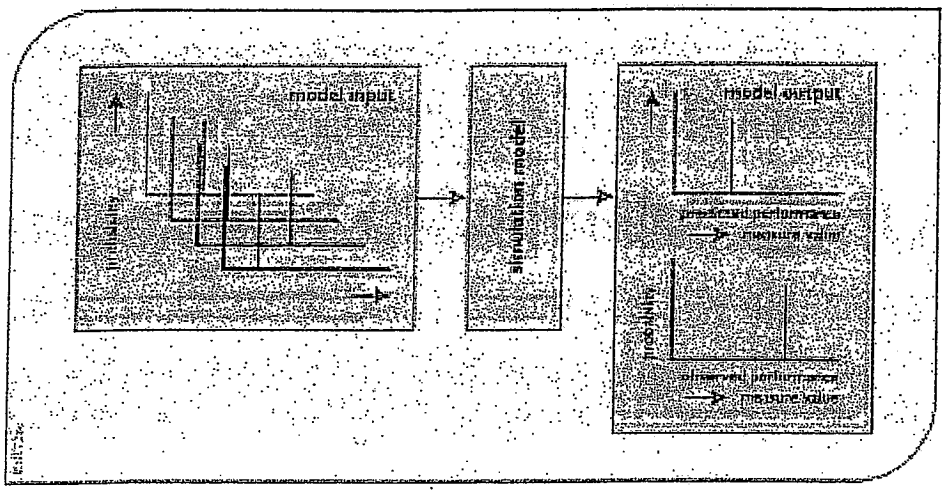


Figure 8. A deterministic system and a simulation model of that system needing calibration or modification in its structure. There is no randomness, only parameter value or model structure errors to be identified and corrected.

Next consider the same deterministic simulation model but now assume at least some of the inputs are random, i.e., not predictable, as may be case when random outputs of one model are used as inputs into another model. Random inputs will yield random outputs. The model input and output values can be described by probability distributions. If the uncertainty in the output is due only to the uncertainty in the input, the situation is similar to that shown in Figure 8. If the distribution of performance measure output values does not fit or is not identical to the distribution of observed performance measure values, then calibration of model parameter values or modification of model structure may be needed.

If a model calibration or 'identification' exercise finds the 'best' values of the parameters to be outside reasonable ranges of values based on scientific knowledge, then the model structure or algorithm might be in error. Assuming the algorithms used to solve the models are correct and observed measurements of system performance vary for the same model inputs, as shown in Figure 9, it can be assumed that the model structure does not capture all the processes that are taking place that impact the value of the performance measures. This is often the case when relatively simple and low-resolution models are used to estimate the hydrological and ecological impacts of water and land management policies. However, even large and complex models can fail to include or adequately describe important phenomena.

In the presence of informational uncertainties there may be considerable uncertainty about the values of the "best" parameters during calibration. This problem becomes even more pronounced with increases in model complexity.

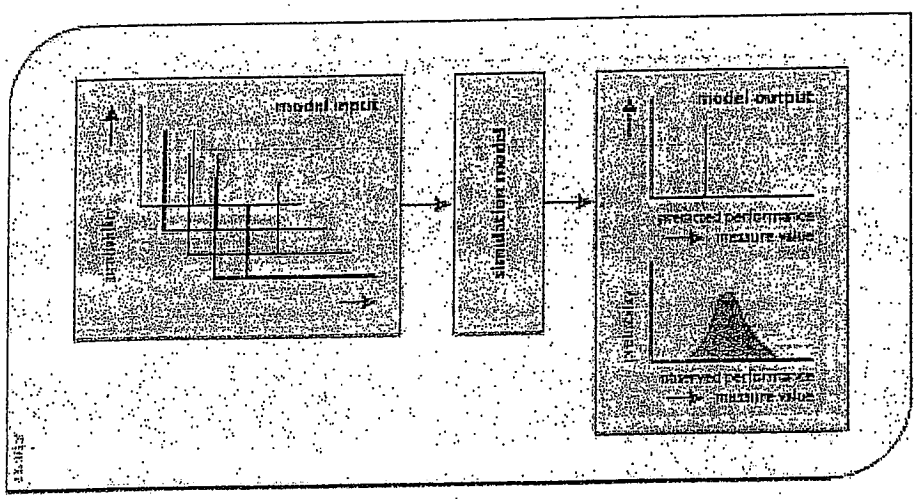


Figure A deterministic simulation model of a 'random or stochastic' system. To produce the variability in the model output that is observed in the real system, even given the same input values, the model's parameter values may need to vary over distributions of values and/or the model structure may need modification along with additional model inputs.

An example: Consider the prediction of a pollutant concentration at some site downstream of a pollutant discharge site. Given a streamflow Q (in units of 1000 m^3/day), the distance between the discharge site and the monitoring site, X (m), the pollutant decay rate constant k (day^{-1}), and the pollutant discharge W (Kg/day), we can use the following simplified model to predict the concentration of the pollutant C (g/m^3 = mg/l) at the downstream monitoring site:

$$C = (W/Q)\exp\{-k(X/U)\}$$

In the above equation assume the velocity U (m/day) is a known function of the streamflow Q.

In this case the observed value of the pollutant concentration C may differ from the computed value of C even for the same inputs of W, Q, k, X, and U. Furthermore, this difference varies in different time periods. This apparent variability, as illustrated in Figure 9, can be simulated using the same model but by assuming a distribution of values for the decay rate constant k. Alternatively the model structure can be modified to include the impact of streamflow temperature T on the prediction of C.

$$C = (W/Q)\exp\{-k\theta^{T-2}(X/U)\}$$

Now there are two model parameters, the decay rate constant k and the dimensionless temperature correction factor θ and an additional model input, the streamflow temperature, T. It could be that the variation in streamflow temperature was the sole cause of the first

equation's 'uncertainty' and that the assumed parameter distribution of k was simply the result of the distribution of streamflow temperatures on the term $k\theta^{T-20}$.

If the output were still random given constant values of all the inputs, then another source of uncertainty exists. This uncertainty might be due to additional random loadings of the pollutant, possibly from non-point sources. Once again the model could be modified to include these additional loadings if they are knowable. Assuming these additional loadings are not known, a new random parameter could be added to the input variable W or to the right hand side of the equations above that would attempt to capture the impact on C of these additional loadings. A potential problem, however, might be the likely correlation between those additional loadings and the streamflow Q.

While adding model detail removed some 'uncertainty' in the above example, increasing model complexity will not always eliminate or reduce uncertainty in model output. Adding complexity is generally not a good idea when the increased complexity is based on processes whose parameters are difficult to measure, the right equations are not known at the scale of application, or the amount of data for calibration is small compared to the number of parameters.

Even if more detailed models requiring more input data and more parameter values were to be developed, the likelihood of capturing all the processes occurring in a complex system is small. Hence those involved will have to make decisions taking this uncertainty into account. Imprecision will always exist due to less than a complete understanding of the system and the hydrologic processes being modeled. A number of studies have addressed model simplification, but only in some simple cases have statisticians been able to identify just how one might minimize modeling related errors in model output values.

The problem of determining the "optimal" level of modeling detail is particularly important when simulating the hydrologic events at many sites over large areas. Perhaps the best approach for these simulations is to establish confidence levels for alternative sets of models and then statistically compare simulation results. But even this is not a trivial or costless task. Increases in the temporal or spatial resolution typically require considerable data collection and/or processing, model recalibrations, and possibly the solution of stability problems resulting from the numerical methods used in the models. Obtaining and implementing alternative hydrologic simulation models will typically involve considerable investments of money and time for data preparation and model calibration.

What is needed is a way to predict the variability evident in the system shown in Figure 9. Instead of a fixed output vector for each fixed input vector, a distribution of outputs are needed for each performance measure based on fixed inputs (Figure 9) or a distribution of inputs (Figure 10.). Furthermore the model output distribution for each performance measure should 'match' as well as possible the observed distribution of that performance measure.

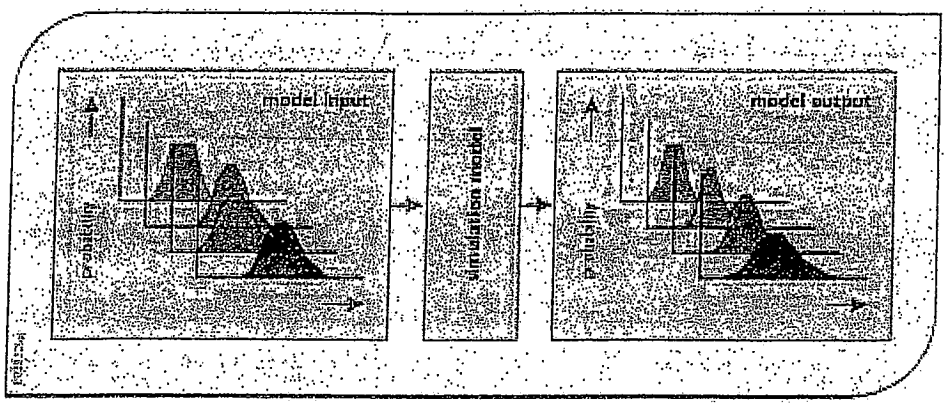


Figure 10. Simulating variable inputs to obtain probability distributions of predicted performance indices that match the probability distributions of observed performance values.

4.1.2 What uncertainty analysis can provide

An uncertainty analysis takes a set of randomly chosen input values (that can include parameter values), passes them through a model (or transfer function) to obtain the distributions (or statistical measures of the distributions) of the resulting outputs. As illustrated in Figure 11, the output distributions can be used to

- Describe the range of potential outputs of the system at some probability level.
- Estimate the probability that the output will exceed a specific threshold or performance measure target value.

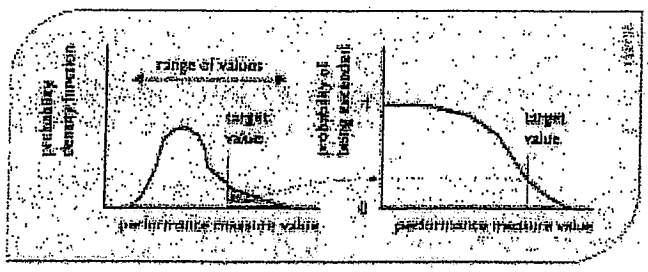


Figure 11. The distribution of performance measures defines range of potential values and the likelihood that a specified target value will be exceeded. The shaded area under the density function on the left represents the probability that the target value will be exceeded. This probability is shown in the probability of exceedance plot on the right.

Common uses for uncertainty analyses are to make general inferences, such as the following:

- Estimating the mean and standard deviation of the outputs.
- Estimating the probability the performance measure will exceed a specific threshold.
- Putting a reliability level on a function of the outputs, e.g., the range of function values that is likely to occur with some probability.
- Describing the likelihood of different potential outputs of the system.

Implicit in any uncertainty analysis are the assumptions that statistical distributions for the input values are correct and that the model is a sufficiently realistic description of the processes taking place in the system. Neither of these assumptions is likely to be entirely correct.

4.2 Sensitivity analyses

"Sensitivity analysis" is aimed at describing how much model output values are affected by changes in model input values. It is the investigation of the importance of imprecision or uncertainty in model inputs in a decision making or modeling process. The exact character of sensitivity analysis depends upon the particular context and the questions of concern. Sensitivity studies can provide a general assessment of model precision when used to assess system performance for alternative scenarios, as well as detailed information addressing the relative significance of errors in various parameters. As a result, sensitivity results should be of interest to the general public, federal and state management agencies, local watershed planners and managers, model users, and model developers.

Clearly, upper level management and the public may be interested in more general statements of model precision, and should be provided such information along with model predictions. On the other hand, detailed studies addressing the significance and interactions among individual parameters would likely be meaningful to model developers and some model users. They can use such data to interpret model results and to identify where efforts to improve models and their input values should be directed.

Initial sensitivity analysis studies could focus on two products:

(1) detailed results to guide research and assist model development efforts, and
(2) calculation of general descriptions of uncertainty associated with model predictions so that policy decisions can reflect both the modeling efforts best prediction of system performance and the precision of such predictions.

In the first case, knowing the relative uncertainty in model projections due to possible errors in different sets of parameters and input data should assist in efforts to improve the precision of model projections. This knowledge should also contribute to a better understanding of the relationships between model assumptions, parameters, data and model predictions.

For the second case, knowing the relative precision associated with model predictions should have a significant effect on policy development. For example, the analysis may show that, given data inadequacies, there are very large error bands associated with some model variables. When such large uncertainties exist, predictions should be used with appropriate skepticism.

Incremental strategies should be explored along with monitoring so that greater experience can accumulate to resolve some of those uncertainties.

Sensitivity analysis features are available in many linear and nonlinear programming (optimization) packages. They identify the changes in the values of the objective function and unknown decision variables given a change in the model input values, and a change in levels set for various constraints (Chapter V). Thus sensitivity analysis addresses the change in "optimal" system performance associated with changes in various parameter values, and also how "optimal" decisions would change with changes in resource constraint levels, or target output requirements. This kind of sensitivity analysis provides estimates of how much another unit of resource would be worth, or what "cost" a proposed change in a constraint places on the optimal solution. This information is of value to those making design decisions.

Various techniques have been developed to determine how sensitive model outputs are to changes in model inputs. Most approaches examine the affects of changes in a single parameter value or input variable assuming no changes in all the other inputs. Sensitivity analyses can be extended to examine the combined effects of multiple sources of error, as well.

Changes in particular model input values can affect model output values in different ways. It is generally true that only a relatively few input variables dominate or substantially influence the values of a particular output variable or performance indicator at a particular location and time. If the range of uncertainty of only some of the output data is of interest, then undoubtedly only those input data that significantly impact on the values of those output data need be included in the sensitivity analysis.

If input data estimates are based on repeated measurements, a frequency distribution can be estimated that characterizes natural variability. The shorter the record of measurements, the greater will be the uncertainty regarding the long-term statistical characteristics of that variability. If obtaining a sufficient number of replicate measurements is not possible, subjective estimates of input data ranges and probability distributions are often made. Using a mixture of subjective estimates and actual measurements does not affect the application of various sensitivity analysis methods that can use these sets or distributions of input values, but it may affect the conclusions that can be drawn from the results of these analyses.

It would be nice to have available accurate and easy-to-use analytical methods for relating errors in input data to errors in model outputs, and to errors in system performance indicator values that are derived from model output. Such analytical methods do not exist for complex simulation models. However methods based on simplifying assumptions and approximations can be used to yield useful sensitivity information. Some of these are reviewed in the remainder of this chapter.

4.2.1 Sensitivity coefficients

One measure of sensitivity is the sensitivity coefficient. This is the derivative of a model output variable with respect to an input variable or parameter. A number of sensitivity

analysis methods use these coefficients. First-order and approximate first-order sensitivity analyses are two such methods that will be discussed later. The difficulty of

1. obtaining the derivatives for many models,
2. needing to assume mathematical (usually linear) relationships when obtaining estimates of derivatives by making small changes of input data values near their nominal or most likely values, and
3. having large variances associated with most hydrologic process models have motivated the replacement of analytical methods by numerical and statistical approaches to sensitivity analysis.

Implicit in any sensitivity analysis are the assumptions that statistical distributions for the input values are correct and that the model is a sufficiently realistic description of the processes taking place in the system. Neither of these assumptions is likely to be entirely correct.

The importance of the assumption that the statistical distributions for the input values are correct is easy to check by using different distributions for the input parameters. If the outputs vary significantly, then the output is sensitive to the specification of the input distributions and hence they should be defined with care. A relatively simple deterministic sensitivity analysis can be of value here (Benaman, 2002). A sensitivity coefficient can be used to measure the magnitude of change in an output variable Q per unit change in the magnitude of an input parameter value P from its base value P_o. Let SI_{PQ} be the sensitivity index for an output variable Q with respect to a change ΔP in the value of the input variable P from its base value P_o. Noting that the value of the output $Q(P)$ is a function of P, the sensitivity index could be defined as

$$SI_{PQ} = [\, Q(P_o + \Delta P) - Q(P_o - \Delta P) \,] / 2\,\Delta P \qquad (1)$$

Other sensitivity indices could be defined (McCuen 1973). Letting the index i represent a decrease and j represent an increase in the parameter value from its base value P_o, the sensitivity index SI_{PQ} for parameter P and output variable Q is could be defined as

$$SI_{PQ} = \{\, |\, (Q_o - Q_i) / (P_o - P_i)\, | + |\, (Q_o - Q_j) / (P_o - P_j)\, |\, \} / 2 \qquad (2)$$

or

$$SI_{PQ} = \max \{\, |\, (Q_o - Q_i) / (P_o - P_i)\, |,\ |\, (Q_o - Q_j) / (P_o - P_j)\, |\, \} \qquad (3)$$

A dimensionless expression of sensitivity is the elasticity index, EI_{PQ}, that measures the relative change in output Q for a relative change in input P could be defined as

$$EI_{PQ} = [P_o / Q(P_o)]\, SI_{PQ} \qquad (4)$$

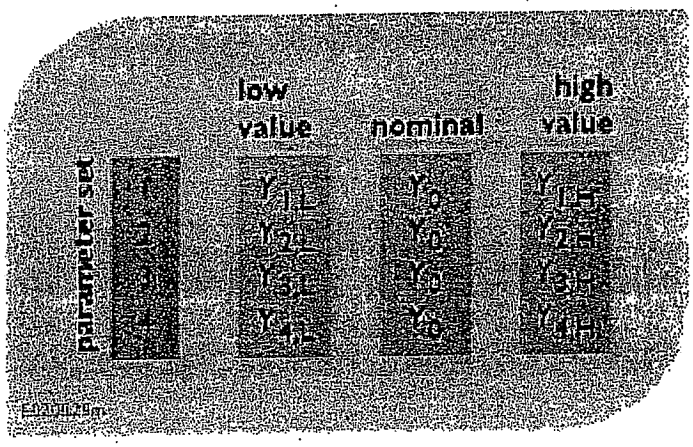
4.2.2 A simple deterministic sensitivity analysis procedure

This deterministic sensitivity analysis approach is very similar those most often employed in the engineering economics literature. It is based on the idea of varying one uncertain parameter value, or set of parameter values, at a time. The ideas are applied to a water quality example to illustrate their use.

The output variable of interest can be any performance measure or indicator. Thus one does not know if more or less of a given variable is better or worse. Perhaps too much and/or too little is undesirable. The key idea is that, whether employing physical measures or economic metrics of performance, various parameters (or sets of associated parameters) are assigned high and low values. Such ranges may reflect either the differences between the minimum and maximum values for each parameter, the 5 and 95 percentiles of a parameters distribution, or points corresponding to some other criteria. The system model is then run with the various alternatives, one at a time, to evaluate the impact of those errors in various sets of parameter values on the output variable.

Table 1 illustrates the character of the results that one would obtain. Here Y_0 is the nominal value of the model output when all parameters assume the estimated best values, and $Y_{i,L}$ and $Y_{i,H}$ are the values obtained by increasing or decreasing the values of the ith set of parameters.

Table 1. Sensitivity of model output Y to possible errors in four parameter sets containing a single parameter or a group of parameters that vary together.



A simple water quality example is employed to illustrate this deterministic approach to sensitivity analysis. The analysis techniques illustrated here are just as applicable to complex models. The primary difference is that more work would be required to evaluate the various alternatives with a more complex model, and the model responses might be more complicated.

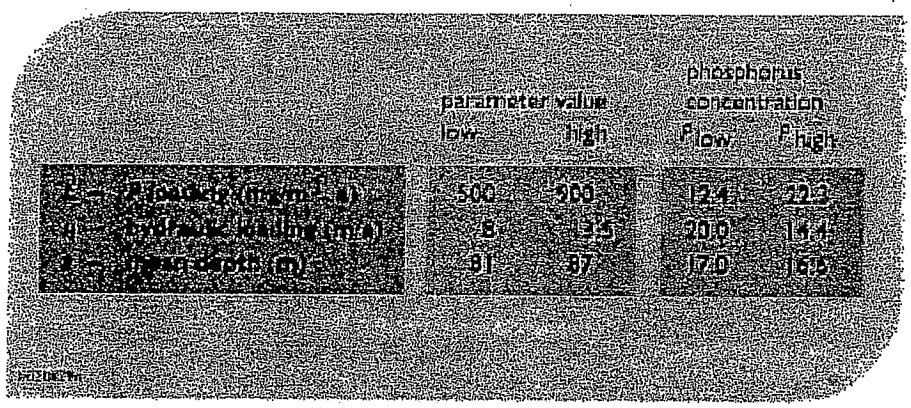
The simple water quality model is provided by Vollenweider's empirical relationship for the average phosphorus concentration in lakes (Vollenweider, 1976). He found that the phosphorus concentration, P (mg/m^3), is a function of the annual phosphorus loading rate, L (mg/m^2•a), the annual hydraulic loading, q (m/a or more exactly m^3/m^2•a), and the mean water depth, z (m).

$$P = (L/q) / [\, 1 + (z/q)^{0.5} \,] \qquad (5)$$

L/q and P have the same units; the denominator is an empirical factor that compensates for nutrient recycling and elimination within the aquatic lake environment.

Data for Lake Ontario in North America would suggest that reasonable values of the parameters are $L = 680$ mg/m^3; $q = 10.6$ m/a; and $z = 84$ m, yielding $P = 16.8$ mg/m^3. Values of phosphorus concentrations less than 10 mg/m^3 are considered oligotrophic, whereas values greater than 20 mg/m^3 generally correspond to eutrophic conditions. Reasonable ranges reflecting possible errors in the three parameters yield the values in Table 2.

Table 2. Sensitivity of estimates of phosphorus concentration (mg/m^3) to model parameter values. The two right most values in each row correspond to the Low and High values of the parameter, respectively



One may want to display these results so they can be readily visualized and understood. A tornado diagram (Eschenbach, 1992) would show the lower and upper values of P obtained from variation of each parameter, with the parameter with the widest limits displayed on top, and the parameter having smallest limits on the bottom. Tornado diagrams (Figure 12) are easy to construct and can include a large number of parameters without becoming crowded.

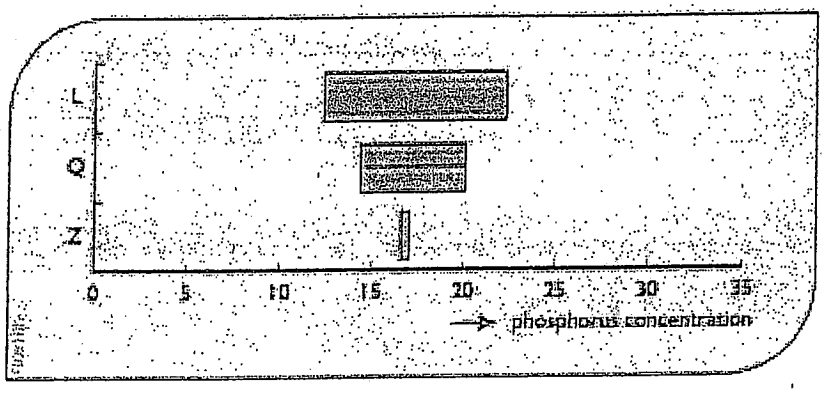


Figure 12. A Tornado diagram showing the range of the output variable representing phosphorus concentrations for high and low values of each of the parameter sets. Parameters are sorted so that the largest range is on top, and the smallest on the bottom.

An alternative to tornado diagrams is a Pareto chart showing the width of the uncertainty range associated with each variable, ordered from largest to smallest. A Pareto chart is illustrated in Figure 13.

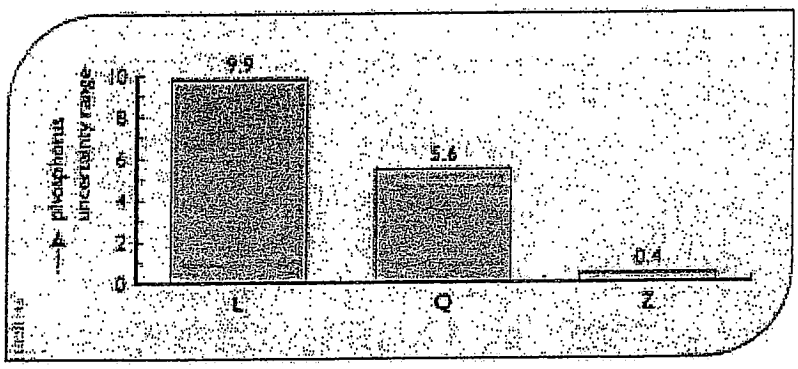


Figure 13. A Pareto Chart showing the range of the output variable representing phosphorus concentrations resulting from high and low values of each parameter set considered.

Another visual presentation is a spider plot showing the impact of uncertainty in each parameter on the variable in question, all on the same graph (Eschenback, 1992; DeGarmo, 1993, p. 401). A spider plot, Figure 14, shows the particular functional response of the output to each parameter on a common scale, so one needs a common metric to represent changes in all of the parameters. Here we use percentage change from the nominal or best values.

Spider plots are a little harder to construct than tornado diagrams, and can generally include only 4 - 5 variables without becoming crowded. However, they provide a more complete view of the relationships between each parameter and the performance measure. In particular, a spider plot reveals nonlinear relationships and the relative sensitivity of the performance measure to (percentage) changes in each variable.

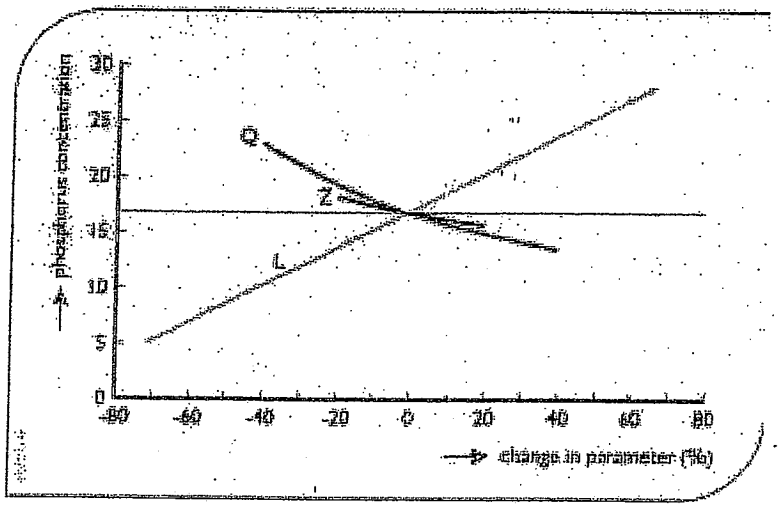


Figure 14. Spider Plot illustrates the relationships between model output describing phosphorus concentrations and variations in each of the parameter sets, expressed as a percentage deviation from their nominal values.

In the spider plot, the linear relationship between P and L and the gentle nonlinear relationship between P and q is illustrated. The range for z has been kept small given the limited uncertainty associated with that parameter.

4.2.3 Multiple errors and interactions

An important issue that should not be ignored is the impact of simultaneous errors in more than one parameter. Probabilistic methods directly address the occurrence of simultaneous errors, but the correct joint distribution needs to be employed. With simple sensitivity analysis procedures, errors in parameters are generally investigated one at a time, or in groups. The idea of considering pairs or sets of parameters is discussed here.

Groups of factors. It is often the case that reasonable error scenarios would have several parameters changing together. For this reason, the alternatives have been called parameter sets. For example, possible errors in water depth would be accompanied with corresponding variations in aquatic vegetation and chemical parameters. Likewise, alternatives related to changes in model structure might be accompanied with variations in several parameters. In other cases, there may be no causal relationship among possible errors (such as model structure

versus inflows at the boundary of the modeled region), but they might still interact to effect the precision of model predictions.

Combinations. If one or more non-grouped parameters interact in significant ways, then combinations of one or more errors should be investigated. However, one immediately runs into a combinatorial problem. If each of m parameters can have 3 values (high, nominal, and low) there are 3^m combinations, as opposed to 2m + 1 if each parameter is varied separately. [For m = 5, the differences are $3^5 = 243$ versus 2(5)+1 = 11.] These numbers can be reduced by considering instead only combinations of extremes so that only $2^m + 1$ cases need be considered [$2^5 + 1 = 33$], which is a more manageable number. However, all of the parameters would be at one extreme or the other, and such situations would be very unusual.

Two factors at a time. A compromise is to consider all pairs of two parameters at a time. There are m(m-1)/2 possible pairs of m parameters. Each parameter has a high and low value. Since there are 4 combinations of high and low values for each pair, there are a total of 2m(m-1) combinations. [For m = 5 there are 40 combinations of two parameters each having two values.]

The presentation of these results could be simplified by displaying for each case only the maximum error, which would result in m(m-1)/2 cases that might be displayed in a Pareto diagram. This would allow identification of those combinations of two parameters that might yield the largest errors and thus are of most concern.

For the water quality example, if one plots the absolute value of the error for all four combinations of high (+) and low (-) values for each pair of parameters, they obtain Figure 15.

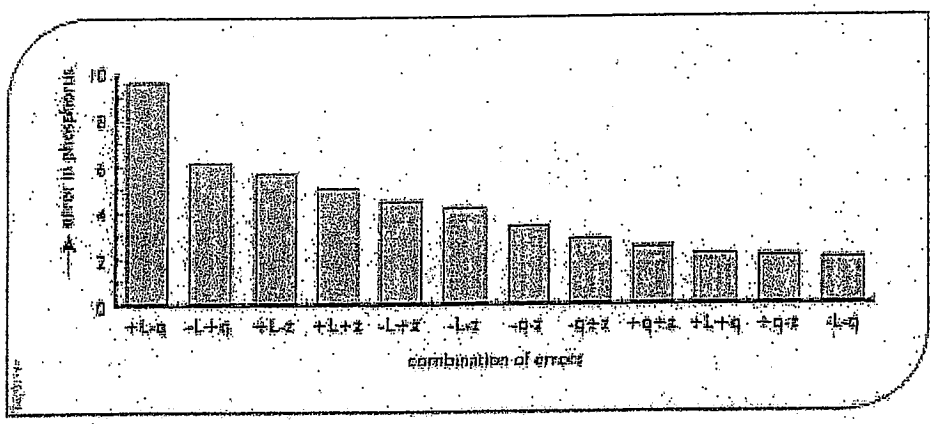


Figure 15. Pareto diagram showing errors in phosphorus concentrations for all combinations of pairs of input parameters errors. A + indicates a high value, and a - indicates a low value for indicated parameter. *L* is the phosphorus loading rate, *q* is the hydraulic loading, and *z* is the mean lake depth.

Considering only the worst error for each pair of variables yields Figure 16.

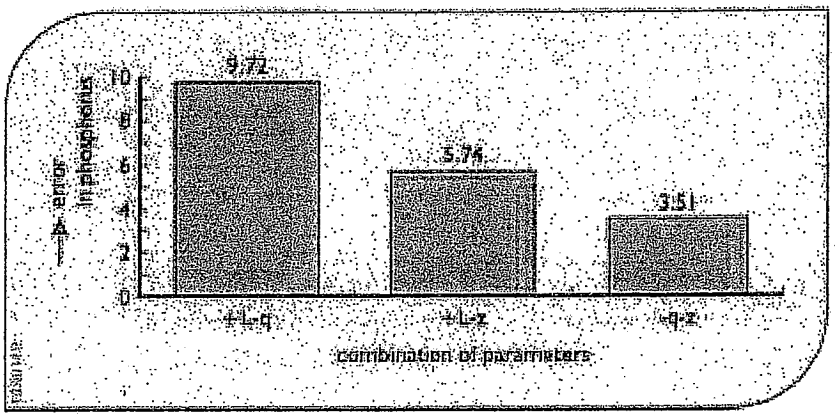


Figure 16. Pareto diagram showing worst error combinations for each pair of input parameters. A '+' indicates a high value, and a '–' indicates a low value for indicated parameter.

Here we see, as is no surprise, that the worst error results from the most unfavorable combination of L and q values. If both parameters have their most unfavorable values, the predicted phosphorus concentration would be 27 mg/m^3.

Looking for non-linearities. One might also display in a Pareto diagram the maximum error for each pair as a percentage of the sum of the absolute values of the maximum error from each parameter separately. The ratio of the joint error to the individual errors would illustrate potentially important nonlinear interactions. If the model of the system and the physical measure or economic metric were strictly linear, then the individual ratios should add to one.

4.2.4 First-order sensitivity analysis

The above deterministic analysis has trouble representing reasonable combinations of errors in several parameter sets. If the errors are independent, it is highly unlikely that any two sets would actually be at their extreme ranges at the same time. By defining probability distributions of the values of the various parameter sets, and specifying their joint distributions, a probabilistic error analysis can be conducted. In particular, for a given performance indicator, one can use multivariate linear analyses to evaluate the approximate impact on the performance indices of uncertainty in various parameters. As shown below, the impact depends upon the square of the sensitivity coefficients (partial derivatives) and the variances and covariances of the parameter sets.

For a performance indicator $I = F(Y)$, which is a function $F(\cdot)$ of model outputs Y, that are in turn a function $g(P)$ of input parameters P, one can use a multivariate Taylor series approximation of F to obtain the expected value and variance of the indicator:

$$E[I] = F(\text{ based on mean values of input parameters}) + (1/2)\ \{\Sigma_i\Sigma_j\ [\partial F^2/\partial P_i \partial P_j]\ \text{Cov}\ [P_i, P_j]\ \} \quad (6)$$

and

$$\text{Var}[I] = \Sigma_i\Sigma_j\ (\partial F/\partial P_i)(\partial F/\partial P_j)\ \text{Cov}\ [P_i, P_j] \quad (7)$$

where $(\partial F/\partial P_i)$ are the partial derivative of the function F with respect to P_i evaluated at the mean value of the input parameters P_i, and $\partial F^2/\partial P_i \partial P_j$ are the second partial derivatives. The covariance of two random input parameters P_i and P_j is the expected value of the product of differences between the values and their means.

$$\text{Cov}[P_i, P_j] = E[(P_i - E[P_i])(P_j - E[P_j])] \quad (8)$$

If all the parameters are independent of each other, and the second-order terms in the expression for the mean $E[I]$ are neglected, one obtains

$$E[I] = F(\text{ based on mean values of input parameters}) \quad (9)$$

and

$$\text{Var}\ [I] = \Sigma_i\ [\partial F/\partial P_i]^2\ \text{Var}\ [P_i] \quad (10)$$

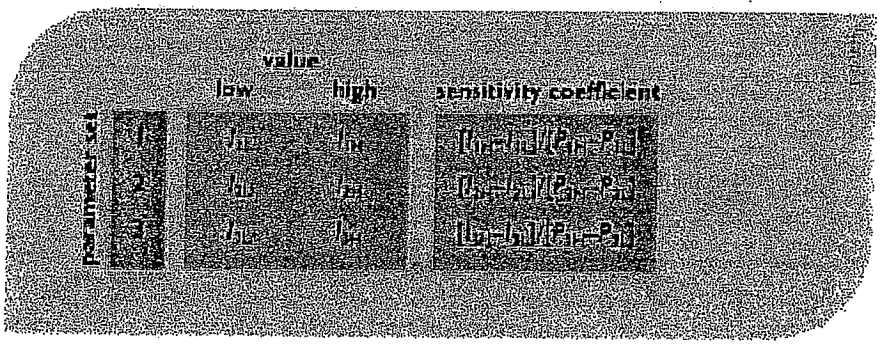
(Benjamin and Cornell, 1970). Equation 6 for $E[I]$ shows that in the presence of substantial uncertainty, the mean of the output from nonlinear systems is not simply the system output corresponding to the mean of the parameters (Gaven and Burges, 1981, p. 1523). This is true for any nonlinear function.

Of interest in the analysis of uncertainty is the approximation for the variance $\text{Var}[I]$ of indicator I. In Equation 10 the contribution of P_i to the variance of I equals $\text{Var}[P_i]$ times $[\partial F/\partial P_i]^2$, which are the squares of the sensitivity coefficients for indicator I with respect to each input parameter value P_i.

4.2.4.1 An example of first-order sensitivity analysis

It may appear that first-order analysis is difficult because the partial derivatives of the performance indicator I are needed with respect to the various parameters. However, reasonable approximations of these sensitivity coefficients can be obtained from the simple sensitivity analysis described in Table 3, as shown below. In that table, three different parameter sets, P_i, are defined in which one parameter of the set is at its high value, P_{iH}, and one is at its low value, P_{iL}, to produce corresponding values (called high, I_{iH}, and low, I_{iL}) of a system performance indicator I.

Table 3. Approximate parameter sensitivity coefficients.



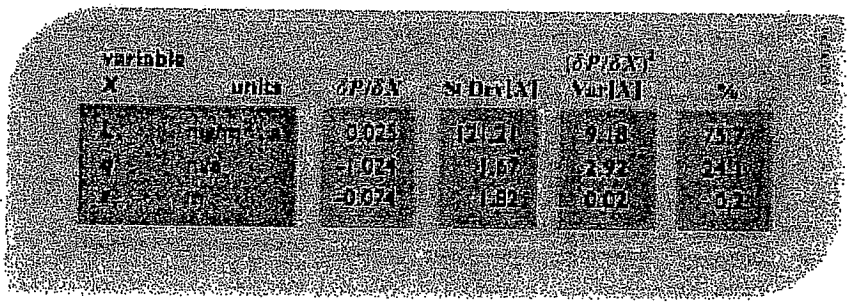
It is then necessary to estimate some representation of the variances of the various parameters with some consistent procedure. For a normal distribution, the distance between the 5 and 95 percentiles is 1.645 standard deviations on each side of the mean, or 2(1.645) = 3.3 standard deviations. Thus, if the high/low range is thought of as approximately a 5-95 percentile range for a normally distributed variate, a reasonable approximation of the variance might be

$$\mathrm{Var}[P_i] = \{ [P_{iH} - P_{iL}]/3.3 \}^2. \qquad (11)$$

This is all that is needed. Use of these average sensitivity coefficients is very reasonable for modeling the behavior of the system performance indicator I over the indicated ranges.

As an illustration of the method of first-order uncertainty analysis, consider the lake quality problem described above. The "system performance indicator" in this case is the model output, the phosphorus concentration P, and the input parameters, now denoted as $X = L$, q, and z. The standard deviation of each parameter is assumed to be the specified range divided by 3.3. Average sensitivity coefficients $\partial P/\partial X$ were calculated. The results are reported in the table below.

Table 4. Calculation of approximate parameter sensitivity coefficients.



Assuming the parameter errors are independent:

$$\text{Var}[P] = 9.18 + 2.92 + 0.02 = 12.12 \qquad (12)$$

The square root of 12.12 is the standard deviation and equals 3.48. This agrees well with a Monte Carlo analysis reported below.

Note that 100*(9.18/12.12), or about 76% of the total parameter error variance in the phosphorus concentration P is associated in the phosphorus loading rate L and the remaining 24% is associated with the hydrologic loading q. Eliminating the uncertainty in z would have a negligible impact on the overall model error. Likewise, reducing the error in q would at best have a modest impact on the total error.

Due to these uncertainties, the estimated phosphorus concentration has a standard deviation of 3.48. Assuming the errors are normally distributed, and recalling that ± 1.645 standard deviations around the mean define a 5-95 percentile interval, the 5-95 percentile interval would be about

$$16.8 \pm 1.645\ (3.48)\ \text{mg/m}^3 = 16.8 \pm 5.7\ \text{mg/m}^3 = 11.1 \text{ to } 22.5\ \text{mg/m}^3. \qquad (13)$$

These error bars indicate there is substantial uncertainty associated with the phosphorus concentration P, primarily due to uncertainty in the loading rate L.

The upper bound of 22.6 mg/m^3 is considerably less than the 27 mg/m^3 that would be obtained if both L and q had their most unfavorable values. In a probabilistic analysis with independent errors, such a combination is highly unlikely.

4.2.4.2 Warning on accuracy.

First-order uncertainty analysis is indeed an approximate method based upon a linearization of the response function represented by the full simulation model. It may provide inaccurate estimates of the variance of the response variable for nonlinear systems with large uncertainty in the parameters. In such cases Monte Carlo simulation (discussed below and in Chapter VII) or the use of higher-order approximation may be required. Beck (1987, p. 1426) cites studies that found that Monte Carlo and first-order variances were not appreciably different, and a few studies that found specific differences. Differences are likely to arise when the distributions used for the parameters are bimodal (or otherwise unusual), or some rejection algorithm is used in the Monte Carlo analysis to exclude some parameter combinations. Such errors can result in a distortion in the ranking of predominant sources of uncertainty. However, in most cases very similar results were obtained.

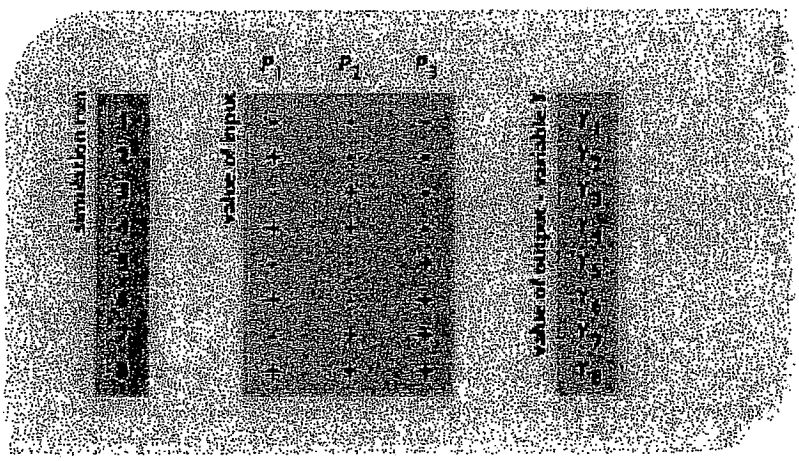
4.2.5 Fractional factorial design method

An extension of first-order sensitivity analysis would be a more complete exploration of the response surface using a careful statistical design. First consider a complete factorial design. Input data are divided into discrete "levels'. The simplest case is two levels. These two levels can be defined as a nominal value, and a high (low) value. Simulation runs are made for all combinations of parameter levels. For n different inputs, this would require 2^n simulation runs. Hence for a three-input variable or parameter problem, 8 runs would be required. If 4 discrete levels of each input variable or parameter were allowed to provide a more reasonable description of a continuous variable, the three-input data problem would require 4^3 or 64 simulation runs. Clearly this is not a useful tool for large regional water resources simulation models.

A fractional factorial design involves simulating only a fraction of what is required from a full factorial design method. The loss of information prevents a complete analysis of the impacts of each input variable or parameter on the output.

To illustrate the fractional factorial design method, consider the two-level with three-input variable or parameter problem. Table 5 below shows the 8 simulations required for a full factorial design method. The '+' and the '–' show the upper and lower levels of each input variable or parameter P_i where $i = 1, 2, 3$. If all 8 simulations were performed, seven possible effects could be estimated. These are the individual effects of the three inputs P_1, P_2, and P_3, the three two-input variable or parameter interactions, $(P_1)(P_2)$, $(P_1)(P_3)$, and $(P_2)(P_3)$, and the one three-input variable or parameter interaction $(P_1)(P_2)(P_3)$.

Table 5. A three-input factorial design.



Consider an output variable Y, where Y_j is the value of Y in the jth simulation run. Then an estimate of the effect, denoted $\delta(Y|P_i)$, that input variable or parameter P_i has on the output variable Y, is the average of the four separate effects of varying P_i:

For i = 1:

$$\delta(Y \mid P_1) = 0.25\ [\ (Y_2-Y_1)+(Y_4-Y_3)+(Y_6-Y_5)+(Y_8-Y_7)\ ] \qquad (14)$$

Each difference in parentheses is the difference between a run in which P_1 is at its upper level and a run in which P_1 is at its lower level, but the other two parameter values, P_2 and P_3, are unchanged. If the effect is equal to 0, then, in this case, P_1 has no impact on the output variable Y.

Similarly the effects of P_2 and P_3, on variable Y can be estimated as:

$$\delta(Y \mid P_2) = 0.25\ \{\ (Y_3-Y_1)+(Y_4-Y_2)+(Y_7-Y_5)+(Y_8-Y_6)\ \} \qquad (15)$$

and

$$\delta(Y \mid P_3) = 0.25\ \{\ (Y_5-Y_1)+(Y_6-Y_2)+(Y_7-Y_3)+(Y_8-Y_4)\ \} \qquad (16)$$

Consider next the interaction effects between P_1 and P_2. This is estimated as the average of the difference between the average P_1 effect at the upper level of P_2, and the average P_1 effect at the lower level of P_2. This is the same as the difference between the average P_2 effect at the upper level of P_1 and the average P_2 effect at the lower level of P_1:

$$\delta(Y \mid P_1, P_2) = (1/2)\ \{\ [\ (Y_8-Y_7) + (Y_4-Y_3)]/2 - [\ (Y_2-Y_1) + (Y_6-Y_5)]/2\ \}$$

$$= (1/4)\ \{\ [\ (Y_8-Y_6)+(Y_4-Y_2)] - [\ (Y_3-Y_1) + (Y_7-Y_5)]\ \} \qquad (17)$$

Similar equations can be derived for looking at the interaction effects between P_1 and P_3, and between P_2 and P_3 and the interaction effects among all three inputs P_1, P_2, and P_3.

Now assume only half of the simulation runs were performed, perhaps runs 2, 3, 5 and 8 in this example. If only outputs Y_2, Y_3, Y_5, and Y_8 are available, for our example:

$$\delta(Y \mid P_3) = \sqcup(Y \mid P_1, P_2) = 0.5\ \{\ (Y_8 - Y_3) - (Y_2 - Y_5)\ \} \qquad (18)$$

The separate effects of P_3 and of P_1P_2 are not available from the output. This is the loss in information resulting from fractional instead of complete factorial design.

4.2.6 Monte Carlo sampling methods

The Monte Carlo method of performing sensitivity analyses, illustrated in Figure 16, first selects a random set of input data values drawn from their individual probability distributions. These values are then used in the simulation model to obtain some model output variable values. This process is repeated many times, each time making sure the model calibration is

valid for the input data values chosen. The end result is a probability distribution of model output variables and system performance indices that results from variations and possible errors in all of the input values.

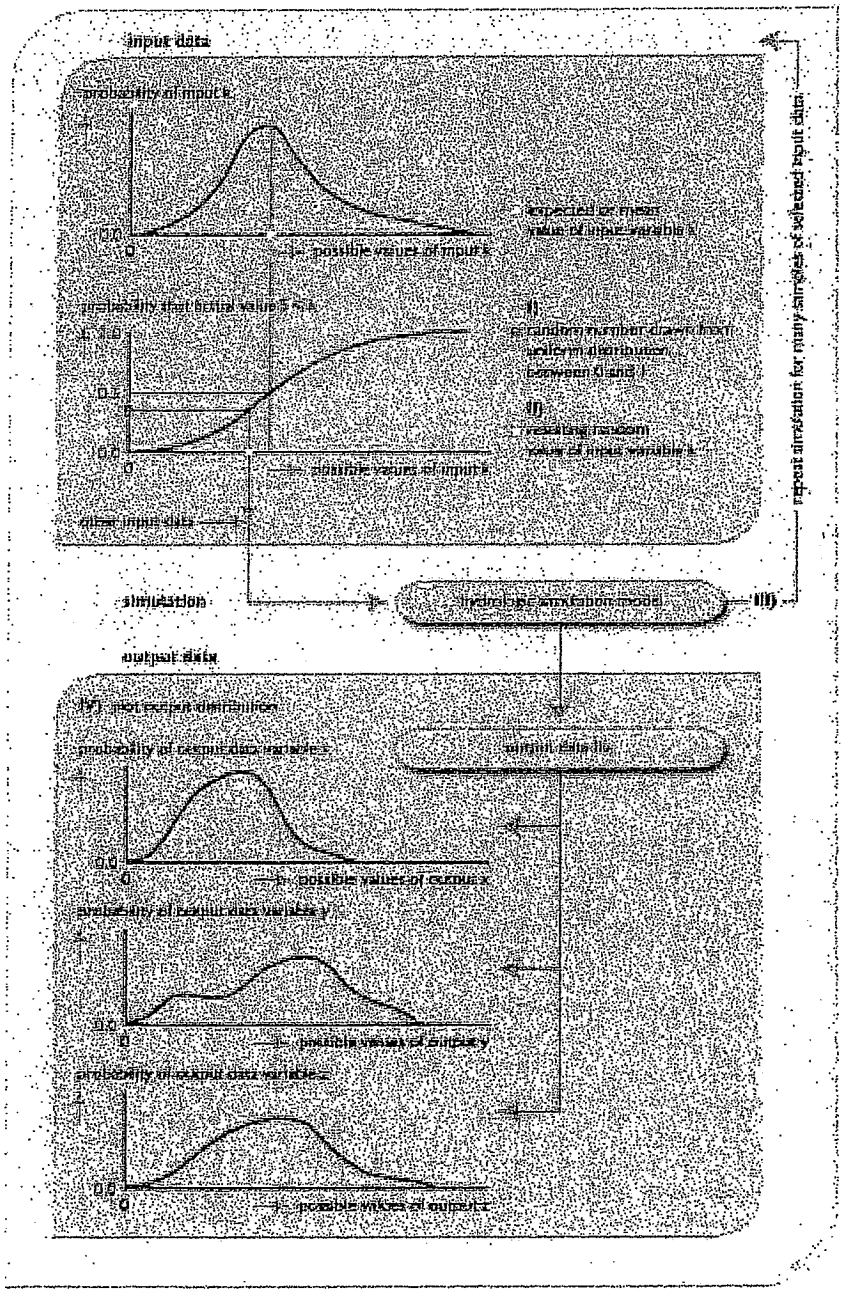


Figure 16. Monte Carlo sampling and simulation procedure for finding distributions of output variable values based on distributions, for specified reliability levels, of input data values. This technique can be applied to one or more uncertain input variables at a time. The output distributions will reflect the combined effects of this input uncertainty over the specified ranges.

Using a simple Monte Carlo analysis, values of all of the parameter sets are selected randomly from distributions describing the individual and joint uncertainty in each, and then the modeled system is simulated to obtain estimates of the selected performance indices. This must be done many times (often well over 100) to obtain a statistical description of system performance variability. The number of replications needed is generally not dependent on the number of parameters whose errors are to be analyzed. One can include in the simulation the uncertainty in parameters as well as natural variability. This method can evaluate the impact of single or multiple uncertain parameters.

A significant problem that arises in such simulations is that some combinations of parameter values result in unreasonable models. For example, model performance with calibration data sets might be inconsistent with available data sets. The calibration process places interesting constraints on different sets of parameter values. Thus, such Monte Carlo experiments often contain checks that exclude combinations of parameter values that are unreasonable. In these cases the generated results are conditioned on this validity check.

Whenever sampling methods are used, one must consider possible correlations among input data values. Sampling methods can handle spatial and temporal correlations that may exist among input data values, but the existence of correlation requires defining appropriate conditional distributions.

One major limitation of applying Monte Carlo methods to estimate ranges of risk and uncertainty for model output variable values, and system performance indicator values based on these output variable values, is the computing time required. To reduce the computing times needed to perform sensitivity analyses using sampling methods, some tricks and as well as stratified sampling methods are available. The discussion below illustrates the idea of a simple modification (or trick) using a "standardized" Monte Carlo analysis. The more general Latin Hypercube Sampling procedure is also discussed.

4.2.6.1 Simple Monte Carlo sampling

To illustrate the use of Monte Carlo sampling methods consider again Vollenweider's empirical relationship, Equation 5, for the average phosphorus concentration in lakes (Vollenweider, 1976). Two hundred values of each parameter were generated independently from normal distributions with the means and variances as shown in Table 6.

The table contains the specified means and variances for the generated values of L, q and z, and also the actual values of the means and variances of the 200 generated values of L, q, z and also of the 200 corresponding generated output phosphorus concentrations, P. Figure 17 displays the distribution of the generated values of P.

Table 6. Monte Carlo analysis of lake phosphorus levels.

parameter	L	q	z	P
specified means and standard deviations				
mean	680.00	0.60	84.00	
standard deviations	121.21	.67	1.82	
generated means and standard deviations				
mean	674.83	10.41	84.06	17.07
standard deviations	130.25	1.73	1.82	3.61

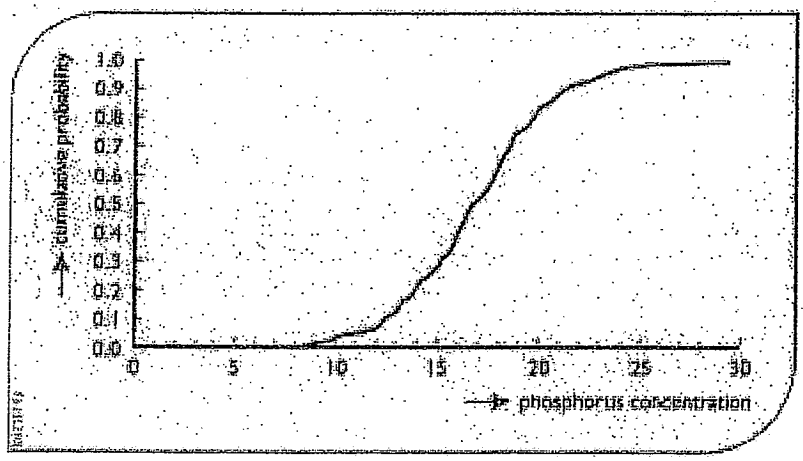


Figure 17. Distribution of lake phosphorus concentrations from Monte Carlo analysis

One can see that given the estimated levels of uncertainty, phosphorus levels could reasonably range from below 10 to above 25. The probability of generating a value greater than 20 mg/m^3 was 12.5%. The 5% to 95 percentile range was 11.1 to 23.4 mg/m^3. In the figure, the cumulative probability curve is rough because only 200 values of the phosphorus concentration were generated, but these are clearly enough to give a good impression of the overall impact of the errors.

4.2.6.2 Sampling uncertainty.

In this example, the mean of the 200 generated values of the phosphorus concentration, P, was 17.07. However a different set of random values would have generated a different set of P values as well. Thus it is appropriate to estimate the standard error, SE, of this average. The standard error equals the standard deviation of the P values divided by the square root of the sample size n:

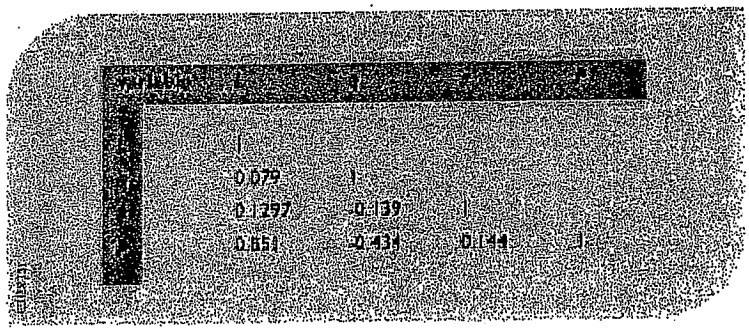
$$SE = \sigma/(n)^{0.5} = 3.61/(200)^{0.5} = 0.25. \qquad (19)$$

From the central limit theorem of mathematical statistics, the average of a large number of independent values should have very nearly a normal distribution. Thus, 95% of the time, the true mean of P should be in the interval $17.1 \pm 1.96\ (0.25)$, or 16.6 to 17.6 mg/m^3. This level of uncertainty reflects the observed variability of P and the fact that only 200 values were generated.

4.2.6.3 Making sense of the results.

A significant challenge with complex models is to determine from the Monte Carlo simulation which parameter errors are important. Calculating the correlation between each generated input parameter value and the output variable value is one way of doing this. As Table 7 below shows, based upon the magnitudes of the correlation coefficients, errors in L were most important, and those in q second in importance.

Table 7. Correlation analysis of Monte Carlo results.



One can also use regression to develop a linear model defining variations in the output based on errors in the various parameters. The results are shown in the Table 8. The fit is very good, and $R^2 = 98\%$. If the model for P had been linear, a R^2 value of 100% should have resulted. All of the coefficients are significantly different from zero.

Note that the correlation between P and z was positive in Table 7, but the regression coefficient for z is negative. This occurred because there is a modest negative correlation between the generated z and q values. Use of partial correlation coefficients can also correct for such spurious correlations among input parameters.

Table 8. Results of Regression Analysis on Monte Carlo Results

	coefficient	standardized error	ratio
intercept	18.605	1.790	10.39
L	0.075	0.000	85.36
Q	-1.068	0.022	-48.54
Z	0.085	0.021	4.08

Finally we display a plot, Figure 18, based on this regression model illustrating the reduction in the variance of P that is due to dropping each variable individually. Clearly L has the biggest impact on the uncertainty in P, and z the least.

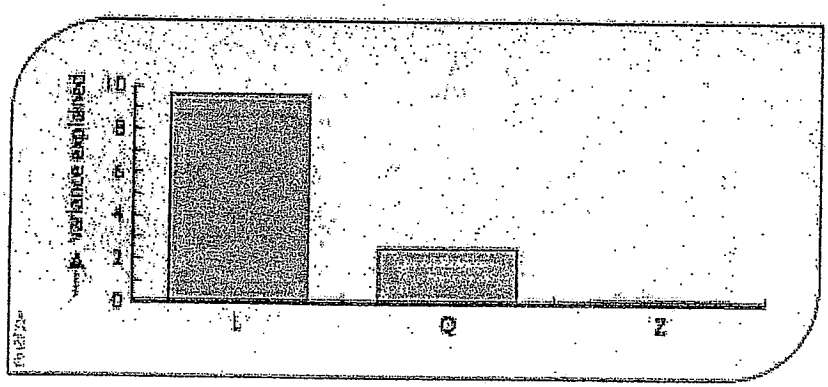
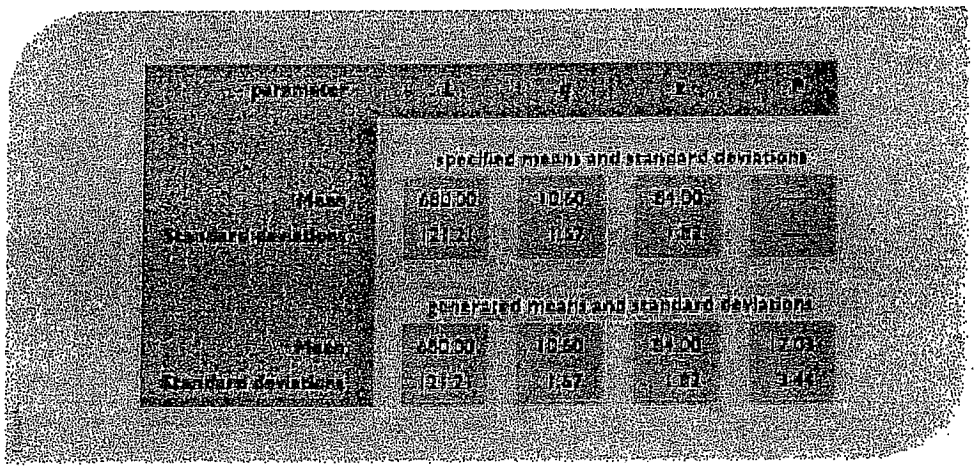


Figure 18. Reduction in the variance of P that is due to dropping from the regression model each variable individually. Clearly L has the biggest impact on the uncertainty in P, and z the least.

4.2.6.4 Standardized Monte Carlo analysis

Using a "standardized" Monte Carlo analysis, one could adjust the generated values of L, q and z above so that the generated samples actually have the desired mean and variance. While making that correction, one can also shuffle their values so that the correlations among the generated values for the different parameters are near zero, as is desired. This was done for the 200 generated values to obtain the statistics shown in Table 9.

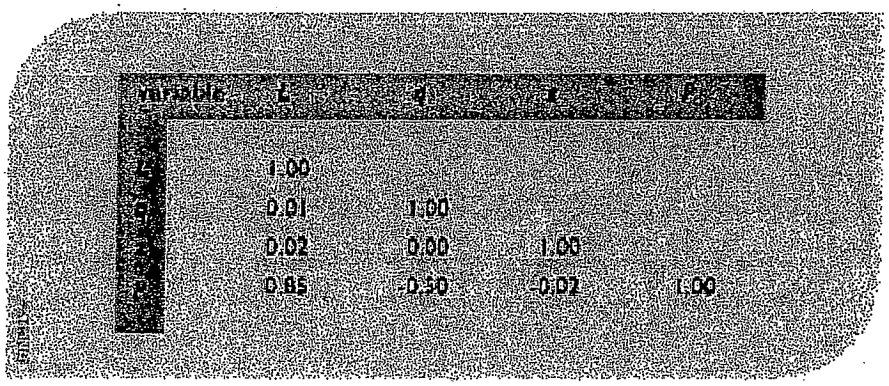
Table 9. Standardized Monte Carlo analysis of lake phosphorus levels



parameter	L	q	z	P
specified means and standard deviations				
Mean	660.00	10.00	34.00	
Standard deviation	21.21	1.67	1.41	
generated means and standard deviations				
Mean	660.00	10.00	34.00	2.03
Standard deviation	21.21	1.67	1.41	1.44

Repeating the correlation analysis from before (shown in Table 10) now yields much clearer results that are in agreement with the regression analysis. The correlation between P and both q and z are now negative as they should be. Because the generated values of the three parameters have been adjusted to be uncorrelated, the signal from one is not confused with the signal from another.

Table 10. Correlation analysis of standardized Monte Carlo results



Variable	L	Q	K	P
L	1.00			
Q	0.01	1.00		
K	0.02	0.00	1.00	
P	0.85	-0.50	-0.02	1.00

The mean phosphorus concentration changed very little. It is now 17.0 instead of 17.1 mg/m^3.

Using control variates with a linear predictive model in conjunction with the standardized Monte Carlo variates, the standard deviation of the errors associated with the 200 observations is only 0.45. Thus the standard error for this estimate of the mean of P is $0.45/(200)^{0.5}$ or just 0.03. Thus this is a highly accurate result. The regressions were also repeated and yielded very similar results. The only real difference was that the parameter estimates had small standard errors and were more significant because of the elimination of correlation between the generated parameters.

4.2.6.5 Generalized likelihood estimation

Beven (1993) and Binley and Beven (1991) suggest a Generalized Likelihood Uncertainty Estimation (GLUE) technique for assessment of parameter error uncertainty using Monte Carlo simulation. It is described as a "formal methodology for some of the subjective elements of model calibration" (Beven, 1989, p. 47). The basic idea is to begin by assigning reasonable ranges for the various parameters and then to draw parameter sets from those ranges using a uniform or some similar (and flat) distribution. These generated parameter sets are then used on a calibration data set so that unreasonable combinations can be rejected, while reasonable values are assigned a posterior probability based upon a likelihood measure which may reflect several dimensions and characteristics of model performance.

Let $L(P_i) > 0$ be the value of the likelihood measure assigned to the ith parameter set's calibration sequence. Then the model predictions generated with parameter set/combination P_i are assigned posterior probability, $p(P_i)$.

$$p(P_i) = L(P_i)/\Sigma_j L(P_j) \qquad (20)$$

These probabilities reflect the form of Bayes theorem, which is well supported by probability theory (Devore, 1991). This procedure should capture reasonably well the dependence or correlation among parameters, because *reasonable* sequences will all be assigned larger probabilities, whereas sequences that are unable to reproduce the system response over the calibration period will be rejected or assigned small probabilities.

However, in a rigorous probabilistic framework, the L would be the likelihood function for the calibration series for particular error distributions. (This could be checked with available goodness-of-fit procedures; for example, Kuczera, 1988.) When relatively ad hoc measures are adopted for the likelihood measure with little statistical validity, the $p(P_i)$ probabilities are best described as pseudo probabilities or "likelihood" weights.

Another concern with this method is the potential efficiency. If the parameter ranges are too wide, a large number of unreasonable or very unlikely parameter combinations will be generated. These will either be rejected or else will have small probabilities and thus little effect on the analysis. In this case the associated processing would be a waste of effort. A compromise is to use some data to calibrate the model and to generate a prior or initial distribution for the parameters that is at least centered in the best range (Beven 1993, p. 48). Then use of a different calibration period to generate the $p(P_i)$ allows an updating of those initial probabilities to reflect the information provided by the additional calibration period with the adopted likelihood measures.

After the accepted sequences are used to generate sets of predictions, the likelihood weights would be used in the calculation of means, variances and quantiles, rather than the customary procedure of giving all the generated realizations equal weight. The resulting conditional distribution of system output reflects the initial probability distributions assigned to parameters, the rejection criteria, and the likelihood measure adopted to assign "likelihood" weights.

4.2.7 Latin hypercube sampling

For the simple Monte Carlo simulations described above, with independent errors, a probability distribution is assumed for each input parameter or variable. In each simulation run, values of all input data are obtained from sampling those individual and independent distributions. The value generated for an input parameter or variable is usually independent of what that value was in any previous run, or what other input parameter or variable values are in the same run. This simple sampling approach can result in a clustering of parameter values and hence both redundancy of information from repeated sampling in the same regions of a distribution and lack of information from no sampling in other regions of the distributions.

A stratified sampling approach ensures more even coverage of the range of input parameter or variable values with the same number of simulation runs. This can be accomplished by dividing the input parameter or variable space into sections and sampling from each section with the appropriate probability.

One such approach, Latin hypercube sampling (LHS), divides each input distribution into sections of equal probability for the specified the probability distribution, and draws one observation randomly from each range. Hence the ranges of input values within each section actually occur with equal frequency in the experiment. These values from each interval for each distribution are randomly assigned to those from other intervals to construct sets of input values for the simulation analysis. Figure 19 shows the steps in constructing a LHS for six simulations involving three inputs P_j (P_1, P_2, and P_3) and six intervals of their respective normal, uniform and triangular probability distributions.

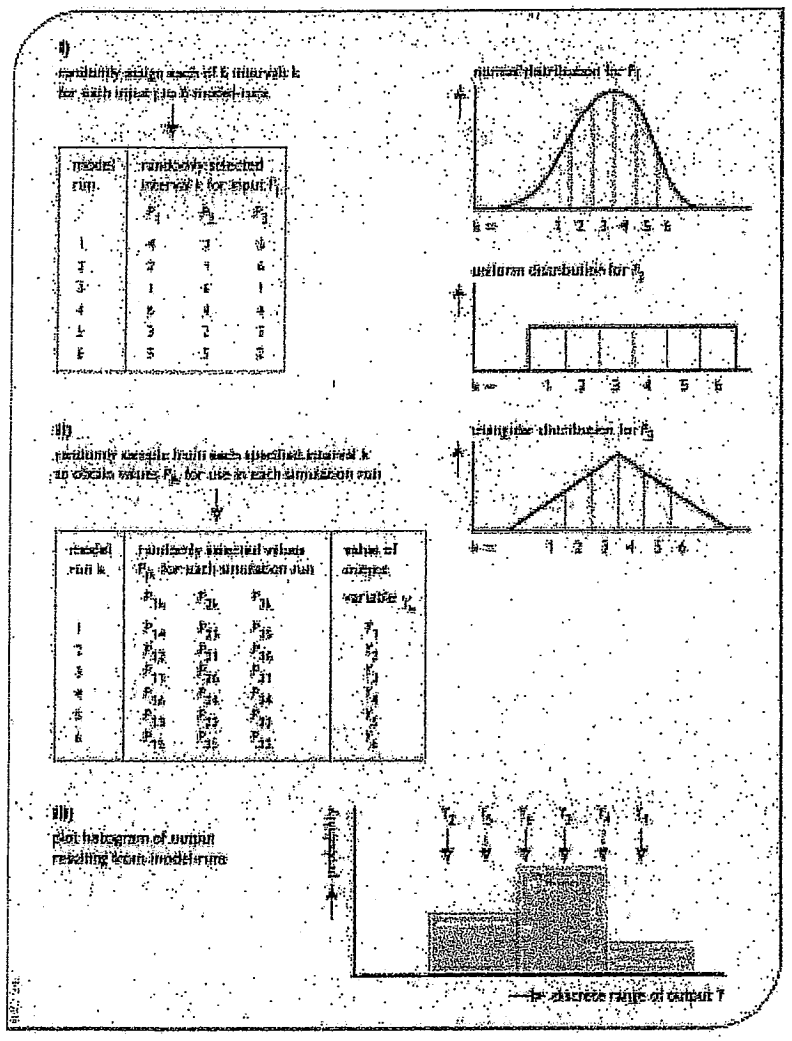


Figure 19. Schematic representation of a Latin hypercube sampling procedure for six simulation runs.

5. Performance indicator uncertainties

5.1 Performance measure target uncertainty

Another possible source of uncertainty is the selection of performance measure target values. For example, consider a target value for a pollutant concentration based on the effect of exceeding it in an ecosystem. Which target value is best or correct? When this is not clear, there are various ways of expressing the uncertainty associated with any target value. One such method is the use of fuzzy sets (Chapter VI). Use of 'grey' numbers or intervals instead of 'white' or fixed target values is another. When some uncertainty or disagreement exists over the selection of the best target value for a particular performance measure it seems to us the most direct and transparent way to do this is to subjectively assume a distribution over a range of possible target values. Then this subjective probability distribution can be factored into the tradeoff analysis, as outlined in Figure 20.

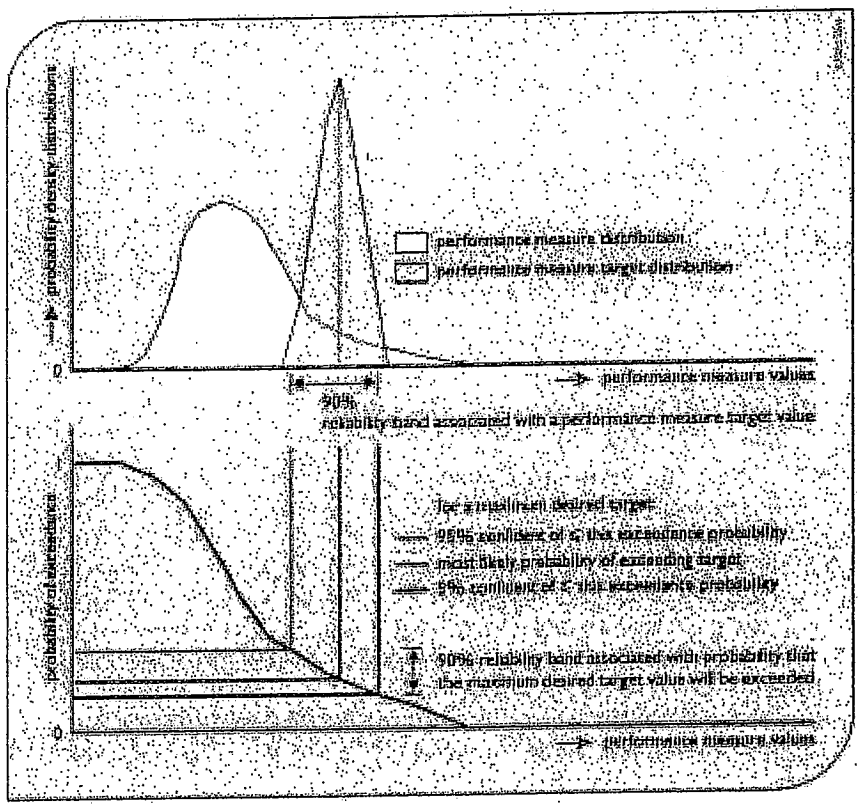


Figure 20. Combining the probability distribution of performance measure values with the probability distribution of performance measure target values to estimate the confidence one has in the probability of exceeding a maximum desired target value.

One of the challenges associated with defining and including in an analysis the uncertainty associated with a target or threshold value for a performance measure is that of communicating just what the result of such an analysis means. Referring to Figure 20, suppose the target value represents some maximum limit of a pollutant, say phosphorus, concentration in the flow during a given period of time at a given site or region, and it is not certain just what that maximum limit should be. Subjectively defining the distribution of that maximum limit, and considering that uncertainty along with the uncertainty (probability of exceedance function) of pollutant concentrations – the performance measure – one can attach a confidence to any probability of exceeding the maximum desired concentration value.

The 95% probability of exceedance shown on Figure 20, say $P_{0.95}$, should be interpreted as "we can be 95% confident that the probability of the maximum desired pollutant concentration being exceeded will be no greater than $P_{0.95}$." We can be only 5% confident that the probability of exceeding the desired maximum concentration will be no greater than the lower $P_{0.05}$ value. Depending on whether the middle line through the subjective distribution of target values in Figure 20 represents the most likely or median target value, the associated probability of exceedance is either the most likely, as indicated in Figure 20, or that for which we are only 50% confident.

Figure 21 attempts to show how to interpret the reliabilities when the uncertain performance targets are

- minimum acceptable levels that are to be maximized,
- maximum acceptable levels that are to be minimized or
- optimum levels.

An example of a minimum acceptable target level might be the population of wading birds in an area. An example of a maximum acceptable target level might be, again, the phosphorus concentration of the flow in a specific wetland or lake. An example of an optimum target level might be the depth of water most suitable for selected species of aquatic vegetation during a particular period of the year.

For performance measure targets that are not expressed as minimum or maximum limits but that are the 'best' values, referring to Figure 21, one can state that one is 90% confident that the probability of achieving the desired target is no more than B. The 90% confidence level probability of not achieving the desired target is at least A+C. The probability of the performance measure being too low is at least A and the probability of the performance measure being too high is at least C, again at the 90% confidence levels. As the confidence level decreases the bandwidth decreases, and the probability of not meeting the target increases.

Now, clearly there is uncertainty associated with each of these uncertainty estimations, and this raises the question of how valuable is the quantification of the uncertainty of each additional component of the plan in an evaluation process. Will plan evaluators and decision makers

benefit from this additional information, and just how much additional uncertainty information is useful?

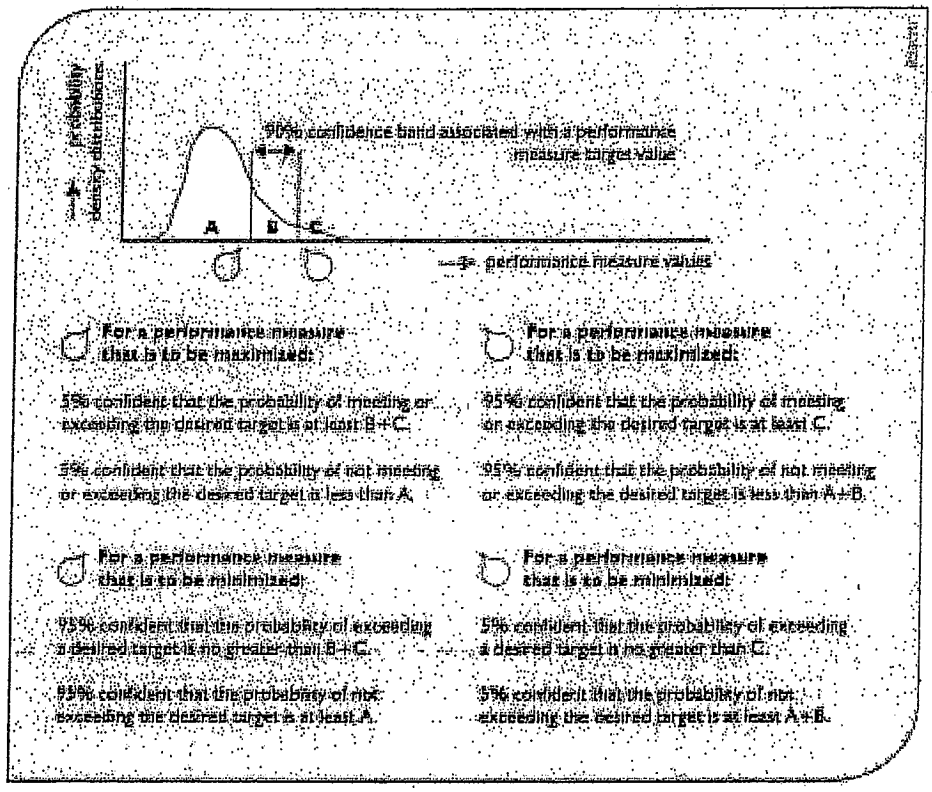


Figure 21. Interpreting the results of combining performance measure probabilities with performance measure target probabilities depends on the type of performance measure. The letters A, B, and C represent proportions of the probability density function of performance measure values. (Hence probabilities A + B + C = 1.)

Now consider again the tradeoffs that need to be made as illustrated in Figure 7. Instead of considering a single target value as shown on Figure 7, assume there is a 90% confidence range associated with that single performance measure target value. Also assume that the target is a maximum desired upper limit (e.g., of some pollutant concentration).

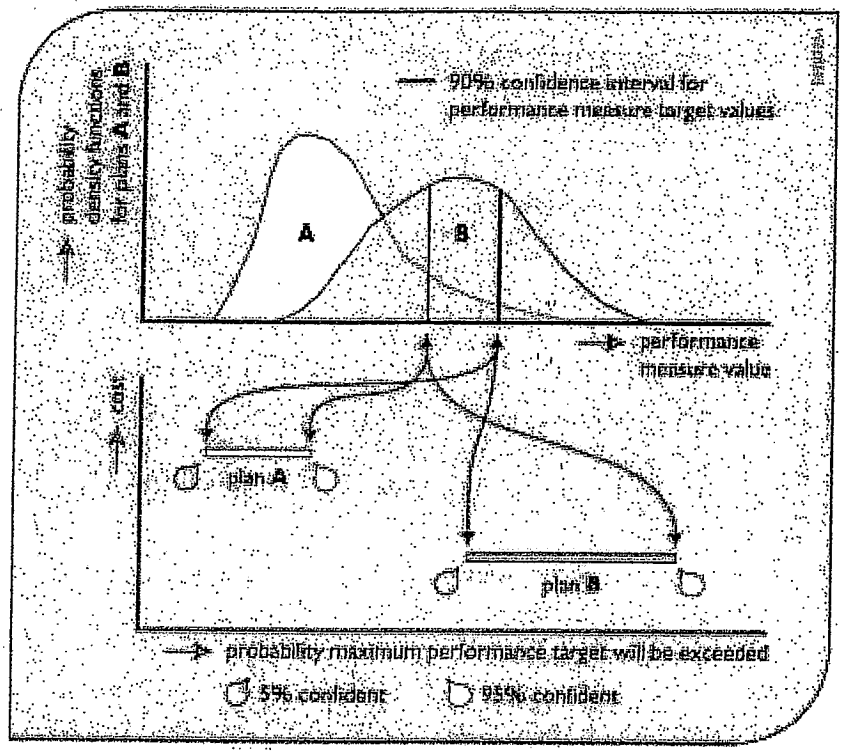


Figure 22. Two plans showing ranges of probabilities, depending on one's confidence, that an uncertain desired maximum (upper limit) performance target value will be exceeded. The 95% confidence levels are associated with the higher probabilities of exceeding the desired maximum target. The 5% confident levels are associated with the more desirable lower probabilities of exceeding the desired maximum target. Plan A with reduced probabilities of exceeding the upper limit costs more than Plan B.

In the case shown in Figure 22, the tradeoff is clearly between cost and reliability. In this example, no matter what confidence one chooses, Plan A is preferred to Plan B with respect to reliability, but Plan B is preferred to Plan A with respect to cost. The tradeoff is only between these two performance indicators or measures.

Consider however a third plan, as shown in Figure 23. This situation adds to the complexity of making appropriate tradeoffs. Now there are three criteria: cost, probability of exceedance (reliability) and the confidence in those reliabilities or probabilities. Add to this the fact that there will be multiple performance measure targets, each expressed in terms of their maximum probabilities of exceedance and the confidence in those probabilities.

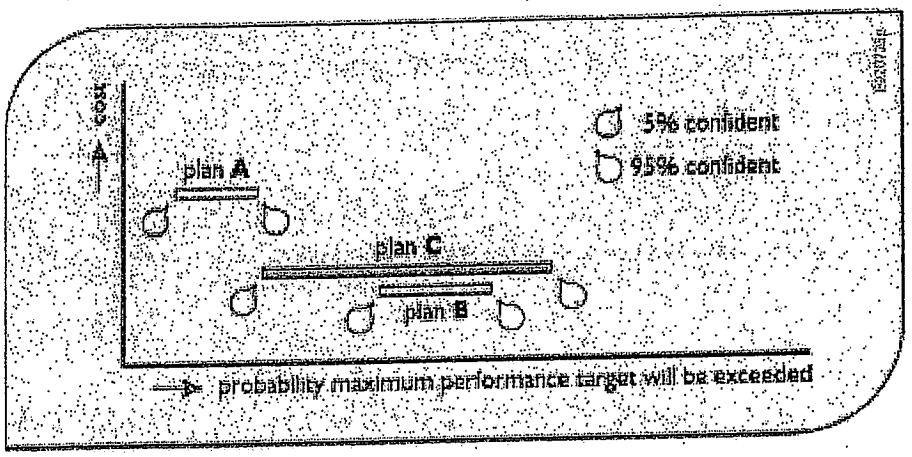


Figure 23. Tradeoffs among cost, reliabilities, and the confidence level of those reliabilities. The relative ranking of plans with respect to the probability of exceeding the desired (maximum limit) target may depend on the confidence given to that probability.

In Figure 23, in terms of cost the plans are ranked, from best to worst, B, C, and A. In terms of reliability at the 90 percent confidence level, they are ranked A, B, and C but at the 50 percent confidence level the ranking is A, C and B.

If the plan evaluation process has difficulty handling all this it may indicate the need to focus the uncertainty analysis effort on just what is deemed important, achievable, and beneficial. Then when the number of alternatives has been narrowed down to only a few that appear to be the better ones, a more complete uncertainty analysis can be performed. There is no need nor benefit in performing sensitivity and uncertainty analyses on all possible management alternatives. Rather one can focus on those alternatives that look the most promising, and then carry out additional uncertainty and sensitivity analyses only when important uncertain performance indicator values demands more scrutiny. Otherwise the work is not likely to affect the decision anyway.

5.2 Distinguishing differences between performance indicator distributions

Simulations of alternative water management infrastructure designs and operating policies require a comparison of the simulation outputs – the performance measures or indicators – associated with each alternative. A reasonable question to ask is are the observed differences statistically significant. Can one really tell if one alternative is better than another or are the observed differences explainable by random variations attributable to variations in the inputs and how the system responds?

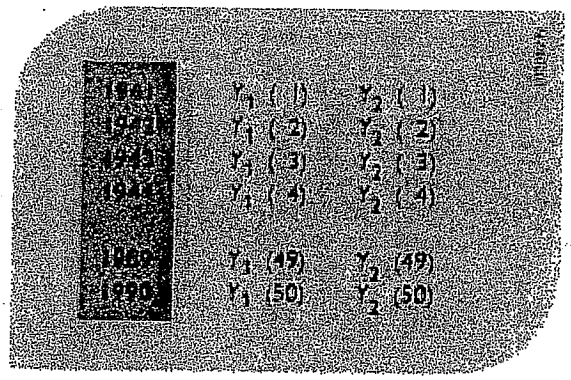
This is a common statistical issue that is addressed by standard hypothesis tests (Devore, 1991; Benjamin and Cornell, 1970). Selection of an appropriate test requires that one first resolve what type of change one expects in the variables. To illustrate, consider the comparison of two

different operating policies. Let Y_1 denote the set of output performance variable values with the first policy, and Y_2 the set of output performance variable values of the second policy. In many cases, one would expect one policy to be better than the other. One measure might be the difference in the mean of the variables; for example is $E[Y_1] < E[Y_2]$?. Alternatively one could check the difference in the median (50 percentile) of the two distributions.

In addition, one could look for a change in the variability or variance, or a shift in both the mean and the variance. Changes described by a difference in the mean or median often make the most sense and many statistical tests are available that are sensitive to such changes. For such investigations parametric and non-parametric tests for paired and unpaired data can be employed.

Consider the differences between "paired" and "unpaired" data. Suppose that the meteorological data for 1941-1990 is used to drive a simulation model generating data as described in Table 11:

Table 11. Possible flow data from a 50-year simulation



Here there is one sample, $Y_1(1)$ through $Y_1(50)$, for policy 1, and another sample, $Y_2(1)$ through $Y_2(50)$, for policy 2. However, the two sets of observations are not independent. For example, if 1943 was a very dry year, then we would expect both $Y_1(3)$ for policy 1 in that year and $Y_2(3)$ for policy 2 to be unusually small. With such paired data, one can use a paired hypothesis test to check for differences. Paired tests are usually easier than the corresponding unpaired tests that are appropriate in other cases. (For example, if one were checking for a difference in average rainfall depth between 1941-1960, and 1961-1990, they would have two sets of independent measurements for the two periods. With such data, one should use a two-sample unpaired test.)

Paired tests are generally based on the differences between the two sets of output, $Y_1(i) - Y_2(i)$. These are viewed as a single independent sample. The question is then are the differences

positive (say Y_1 tends to be larger then Y_2), or negative (Y_1 tends to be smaller), or are positive and negative differences are equally likely (there is no difference between Y_1 and Y_2).

Both parametric and non-parametric families of statistical tests are available for paired data. The common parametric test for paired data (a one-sample t test) assumes that the mean of the differences

$$X(i) = Y_1(i) - Y_2(i) \tag{21}$$

are normally distributed. Then the hypothesis of no difference is rejected if the t statistic is sufficiently large, given the sample size n.

Alternatively, one can employ a nonparametric test and avoid the assumption that the differences $X(i)$ are normally distributed. In such a case, one can use the Wilcoxon Signed Rank test. This nonparametric test ranks the absolute values $|X(i)|$ of the differences. If the sum S of the ranks of the positive differences deviates sufficiently from its expected value, $n(n+1)/4$ (were there no difference between the two distributions), one can conclude that there is a statistically significant difference between the $Y_1(i)$ and $Y_2(i)$ series. Standard statistical texts have tables of the distribution of the sum S as a function of the sample size n, and provide a good analytical approximation for $n > 20$ (for example, Devore, 1991). Both the parametric t test and the nonparametric Wilcoxon Signed Rank test require that the differences between the simulated values for each year be computed.

6. Communicating model output uncertainty

Spending money on reducing uncertainty would seem preferable to spending it on ways of calculating and describing it better. Yet attention to uncertainty communication is critically important if uncertainty analyses and characterizations are to be of value in a decision making process. In spite considerable efforts by those involved in risk assessment and management, we know very little about how to ensure effective risk communication to gain the confidence of stakeholders, incorporate their views and knowledge, and influence favorably the acceptability of risk assessments and risk-management decisions.

The best way to communicate concepts of uncertainty may well depend on what the audiences already know about risk and the various types of probability distributions (e.g., density, cumulative, exceedance) based on objective and subjective data, and the distinction between mean or average values and the most likely values. Undoubtedly graphical representations of these ways of describing uncertainty considerably facilitate communication.

The National Research Council (NRC 1994) addressed the extensive uncertainty and variability associated with estimating risk and concluded that risk characterizations should not be reduced to a single number or even to a range of numbers intended to portray uncertainty. Instead, the report recommended managers and the interested public should be given risk characterizations that are both qualitative and quantitative and both verbal and mathematical.

In some cases communicating qualitative information about uncertainty to stakeholders and the public in general may be more effective than quantitative information. There are, of course, situations in which quantitative uncertainty analyses are likely to provide information that is useful in a decision-making process. How else can tradeoffs such as illustrated in Figures 10 and 27 be identified? Quantitative uncertainty analysis often can be used as the basis of qualitative information about uncertainty, even if the quantitative information is not what is communicated to the public.

One should acknowledge to the public the widespread confusion regarding the differences between variability and uncertainty. Variability does not change through further measurement or study, although better sampling can improve our knowledge about variability. Uncertainty reflects gaps in information about scientifically observable phenomena.

While it is important to communicate uncertainties and confidence in predictions, it is equally important to clarify who or what is at risk, possible consequences, and the severity and irreversibility of an adverse effect should a target value, for example, not be met. This qualitative information is often critical to informed decision-making. Risk and uncertainty communication is always complicated by the reliability and amounts of available relevant information as well as how that information is presented. Effective communication between people receiving information about who or what is at risk, or what might happen and just how severe and irreversible an adverse effect might be should a target value not be met, is just as important as the level of uncertainty and the confidence associated with such predictions. A two-way dialog between those receiving such information and those giving it can help identify just what seems best for a particular audience.

Risk and uncertainty communication is a two-way street, It involves learning and teaching. Communicators dealing with uncertainty should learn about the concerns and values of their audience, their relevant knowledge, and their experience with uncertainty issues. Stakeholders' knowledge of the sources and reasons for uncertainty needs to be incorporated into assessment and management and communication decisions. By listening, communicators can craft risk messages that better reflect the perspectives, technical knowledge, and concerns of the audience.

Effective communication should begin before important decisions have been made. It can be facilitated in communities by citizen advisory panels. Citizen advisory panels can give planners and decision makers a better understanding of the questions and concerns of the community and an opportunity to test its effectiveness in communicating concepts and specific issues regarding uncertainty.

One approach to make uncertainty more meaningful is to make risk comparisons. For example, a ten parts per billion target for a particular pollutant concentration is equivalent to 10 seconds in over 31 years. If this is an average daily concentration target that is to be satisfied "99 percent," of the time, this is equivalent to an expected violation of less than one day every three months.

Many perceive the reduction of risk by an order of magnitude as though it were a linear reduction. A better way to illustrate orders of magnitude of risk reduction is shown in Figure 24, in which a bar graph depicts better than words that a reduction in risk from one in a 1,000 (10^{-3}) to one in 10,000 (10^{-4}) is a reduction of 90% and that a further reduction to one in 100,000 (10^{-5}) is a reduction 10-fold less than the first reduction of 90%. The percent of the risk that is reduced by whatever measures is a much easier concept to communicate than reductions expressed in terms of estimated absolute risk levels, such as 10^{-5}.

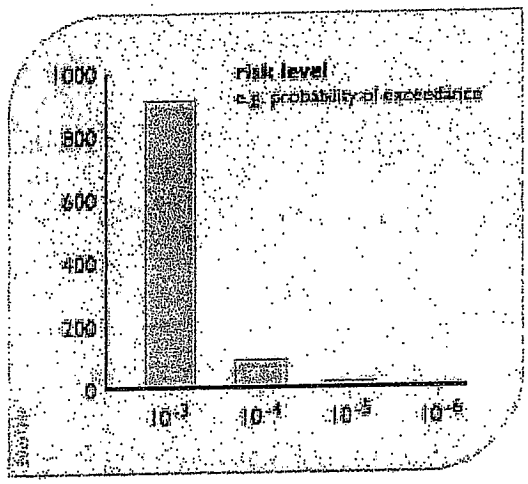


Figure 24. Reducing risk by orders of magnitude is not equivalent to linear reductions.

Risk comparisons can be helpful, but they should be used cautiously and tested if possible. There are dangers in comparing risks of diverse character, especially when the intent of the comparison is seen as minimizing a risk (NRC 1989). One difficulty in using risk comparisons is that it is not always easy to find risks that are sufficiently similar to make a comparison meaningful. How is someone able to compare two alternatives having two different costs and two different risk levels, for example, as is shown in Figure 7? One way is to perform an indifference analysis (Chapter X), but that can lead to different results depending who performs it. Another way is to develop utility functions using weights, where, for example reduced phosphorus load by half is equivalent to a 25 percent shorter hydroperiod in that area, but again each person's utility or tradeoff may differ.

At a minimum, graphical displays of uncertainty can be helpful. Consider the common system performance indicators that include:

- Time-series plots for continuous time-dependent indicators (Figure 25 upper left)
- Probability exceedance distributions for continuous indicators (Figure 25 upper right),
- Histograms for discrete event indicators (Figure 25 lower left), and
- Overlays on maps for space-dependent discrete events (Figure 25 lower right).

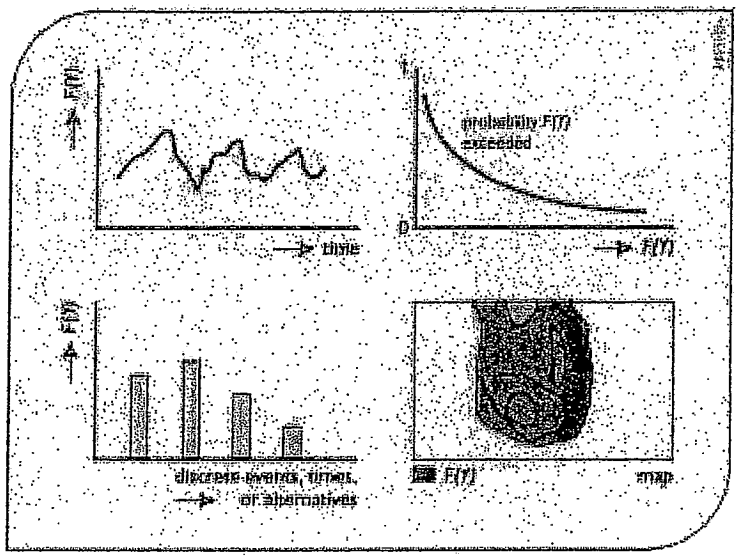


Figure 25. Different types of displays used to show model output Y or system performance indicator values $F(Y)$.

The first three graphs in Figure 25 could show, in addition to the single curve or bar that represents the most likely output, a range of outcomes associated with a given confidence interval. For overlays of information on maps, different colors could represent the spatial extents of events associated with different ranges of risk or uncertainty. Figure 26, corresponding to Figure 25, illustrates these approaches for displaying these ranges.

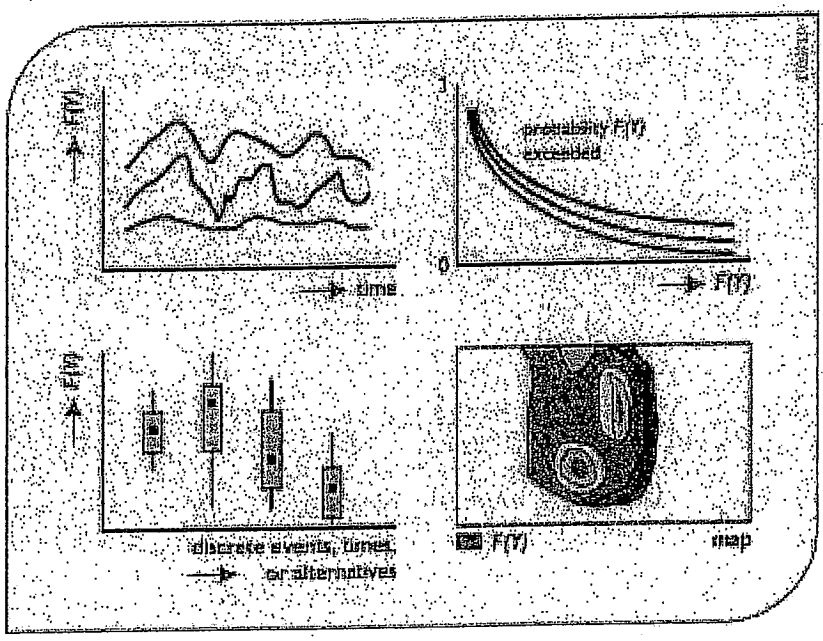


Figure 26. Plots of ranges of possible model output Y or system indicator values $F(Y)$ for different types of displays.

7. Conclusions

This chapter provides an overview of uncertainty and sensitivity analyses in the context of hydrologic or water resources systems simulation modeling. A broad range of tools are available to explore, display, and quantify the sensitivity and uncertainty in predictions of key output variables and system performance indices with respect to imprecise and random model inputs and to assumptions concerning model structure. They range from relatively simple deterministic sensitivity analysis methods to more involved first-order analyses and Monte Carlo sampling methods.

Because of the complexity of many watersheds or river basins, Monte Carlo methods for uncertainty analyses may be a very major and unattractive undertaking. Therefore it is often prudent begin with the relatively simple deterministic procedures. This coupled with a probabilistically based first-order uncertainty analysis method can help quantify the uncertainty in key output variables and system performance indices, and the relative contributions of uncertainty in different input variables to the uncertainty in different output variables and system performance indices. These relative contributions may differ depending upon which output variables and indices are of interest.

A sensitivity analysis can provide a systematic assessment of the impact of parameter value imprecision on output variable values and performance indices, and of the relative contribution of errors in different parameter values to that output uncertainty. Once the key variables are identified, it should be possible to determine the extent to which parameter value uncertainty can be reduced through field investigations, development of better models, and other efforts.

Model calibration procedures can be applied to individual catchments and subsystems, as well as to composite systems. Automated calibration procedures have several advantages including the explicit use of an appropriate statistical objective function, identification of those parameters that best reproduce the calibration data set with the given objective function, and the estimations of the statistical precision of the estimated parameters.

All of these tasks together can represent a formidable effort. However, knowledge of the uncertainty associated with model predictions can be as important to management decision and policy formulation as are the predictions themselves.

No matter how much attention is given to quantifying and reducing uncertainties in model outputs, uncertainties will remain. Professionals who analyze risk, managers and decision makers who must manage risk, and the public who must live with risk and uncertainty, have different information needs and attitudes regarding risk and uncertainty. It is clear that information needs differ among those who model or use models, those who make substantial investment or social decisions, and those who are likely to be impacted by those decisions. Meeting those needs should result in more informed decision making. But it comes at a cost that should be considered along with the benefits of having this sensitivity and uncertainty information.

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Appendix I: Model Calibration Examples

- *Calibration of models in the Murray-Darling Basin*

In the Murray-Darling Basin, in order to preserve water quality, water reliability and the environment, a decision was made in 1995 to restrict water use to the 1993/94 level of development. Computer models of the major tributary streams are now used at the end of each year to determine the annual use target for the previous season based on that level of development. Rules are in place to ensure that long term usage is maintained at the agreed level. Because the models now define the overall water rights of each valley, there are legal requirements to calibrate models and each model is independently audited and certified as being unbiased before being approved as fit for purpose. The key model output of interest is water use but emphasis is also placed on the modeling of downstream flow which impacts the rights of downstream regions. Each model must be calibrated over at least ten years and this often means that changes in infrastructure, operating rules and growth in demand have to be incorporated into the calibration run. Calibration reports contain plots of modeled and observed water use, storage behavior and flow and statistics such as mean error, correlation coefficients and standard errors. The aim of calibration is to ensure that the model is unbiased and to give confidence to stakeholders.

An issue that is sometimes raised with model development is the role of calibration, where the model is fine-tuned to match the observed data, and validation where the model is tested against data that was not used in the calibration process to get an independent assessment of the model's accuracy. For the Murray River, because of the variability of our climate, we like to calibrate our model against a long period of data including the most recent years when the current operating rules were being used and the historical data is generally the most reliable. Validation is considered to be less important and is typically carried out using the two or three years of data available following the completion of model calibration.

- *Use of models for Allocating Water in Texas*

Recent legislation in Texas revised the State Water Planning process and mandated the development of water allocation models for every river basin in the state (http://www.tnrcc.state.tx.us/permitting/waterperm/wrpa/permits.html). Similar to the Murray – Darling situation, these models are used to provide estimates of reliability for all permitted water diversions in the state as well as analysis of the effects of all permit applications. Naturalized, or predevelopment, time series of flows were constructed for the basins, and then the effects of developments were added in to achieve models of the current situation. The process of developing the basin models was an iterative, peer reviewed calibration process subject to stakeholder comment at several critical junctures. The naturalized flows and subsequent development of the basins now form an accepted and legal basis for future water allocations. Currently, similar activities are ongoing to provide calibrated and verified models of the state's groundwater aquifers and usage.

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Appendix I: Model Calibration Examples

- *Calibration of models in the Murray-Darling Basin*

In the Murray-Darling Basin, in order to preserve water quality, water reliability and the environment, a decision was made in 1995 to restrict water use to the 1993/94 level of development. Computer models of the major tributary streams are now used at the end of each year to determine the annual use target for the previous season based on that level of development. Rules are in place to ensure that long term usage is maintained at the agreed level. Because the models now define the overall water rights of each valley, there are legal requirements to calibrate models and each model is independently audited and certified as being unbiased before being approved as fit for purpose. The key model output of interest is water use but emphasis is also placed on the modeling of downstream flow which impacts the rights of downstream regions. Each model must be calibrated over at least ten years and this often means that changes in infrastructure, operating rules and growth in demand have to be incorporated into the calibration run. Calibration reports contain plots of modeled and observed water use, storage behavior and flow and statistics such as mean error, correlation coefficients and standard errors. The aim of calibration is to ensure that the model is unbiased and to give confidence to stakeholders.

An issue that is sometimes raised with model development is the role of calibration, where the model is fine-tuned to match the observed data, and validation where the model is tested against data that was not used in the calibration process to get an independent assessment of the model's accuracy. For the Murray River, because of the variability of our climate, we like to calibrate our model against a long period of data including the most recent years when the current operating rules were being used and the historical data is generally the most reliable. Validation is considered to be less important and is typically carried out using the two or three years of data available following the completion of model calibration.

- *Use of models for Allocating Water in Texas*

Recent legislation in Texas revised the State Water Planning process and mandated the development of water allocation models for every river basin in the state (http://www.tnrcc.state.tx.us/permitting/waterperm/wrpa/permits.html). Similar to the Murray – Darling situation, these models are used to provide estimates of reliability for all permitted water diversions in the state as well as analysis of the effects of all permit applications. Naturalized, or predevelopment, time series of flows were constructed for the basins, and then the effects of developments were added in to achieve models of the current situation. The process of developing the basin models was an iterative, peer reviewed calibration process subject to stakeholder comment at several critical junctures. The naturalized flows and subsequent development of the basins now form an accepted and legal basis for future water allocations. Currently, similar activities are ongoing to provide calibrated and verified models of the state's groundwater aquifers and usage.

ASSOCIATION OF CALIFORNIA WATER AGENCIES • SINCE 1910

ACWA NEWS

A Biweekly Newsletter for ACWA Members • Vol. 32, No. 12 • June 14, 2004

Levee Break Floods 12,000 Acres; State, Federal Officials Move to Protect Water Supplies

Governor Schwarzenegger on June 4 declared a state of emergency in San Joaquin County following a major levee failure in the Sacramento-San Joaquin River Delta. Hundreds of people were evacuated, up to 12,000 acres — nearly 20 square miles of agricultural land — were flooded, and ACWA members as well as state and federal water officials began monitoring water quality and water supply issues. Cost estimates related to the levee break are now estimated at $18 million. Repairs could take 45-60 days.

Continued on page 3

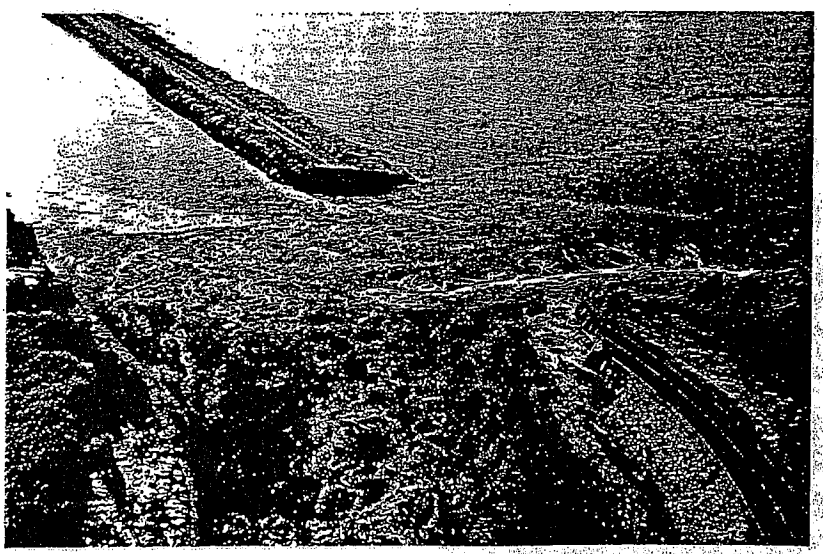

Photo by California Department of Water Resources

After a major levee gave way June 3 in the Sacramento-San Joaquin River Delta, Governor Schwarzenegger declared a state of emergency in San Joaquin County, and state and federal water officials, along with ACWA members, began coordinating efforts to ensure the maximum protection of water supplies for the State Water Project and Central Valley Project.

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www.acwanet.com

Special District Community Issues Letters of Support to Legislators, Governor for Local Government Accord

In an unprecedented move to support Governor Schwarzenegger's local government financing reform package, the special district community has joined forces in a series of letters urging support for the package. The special district community issued a letter to legislative leadership, the Schwarzenegger Administration, and each association's membership outlining the importance of the package, stating that despite the short-term

Continued on page 7

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ACWA members and others have been warning lawmakers and local, state and federal water officials for years that the fragile levee system in the Delta was an accident waiting to happen. "California has not made the investment needed to properly secure these levees that are vital to the hub of the state's water system," said ACWA Executive Director Steve Hall. The Delta is the source of drinking water for two-thirds of the state's residents and irrigates thousands of acres of farmland.

On Thursday June 3, the state's San Joaquin Office of Emergency Services reported a levee break of 200-300 feet on the Middle River Levee, which protects the Delta island known as Jones Tract. The levee failed between the Woodward Island Ferry crossing and the railroad. The break, which soon grew to 500 feet wide and 20 feet deep, occurred in a privately owned levee that protects an island used to grow corn, asparagus and other crops. The levee is in Reclamation District 2039.

The failure point was approximately two miles northeast of Contra Costa Water District's Old River Pumping Station. As soon as the levee failed, the district began monitoring the Delta water quality.

Lower Jones Tract is described as a very large island, and is hydraulically connected to Upper Jones, another very large island. East Bay Municipal Utility District (EBMUD) has three aqueducts that cross this five-mile-wide island located just north of Highway 4 and about 10 miles west of Interstate 5 near Stockton. The aqueducts are large pipelines that deliver water from the Sierra Foothills to water treatment plants in the East Bay. The breach is about one mile south of EBMUD's aqueducts and the aqueducts do not appear to be in danger. Except for flooding around the aqueducts, the district anticipated no immediate impacts. EBMUD water quality is not affected by the flooding.

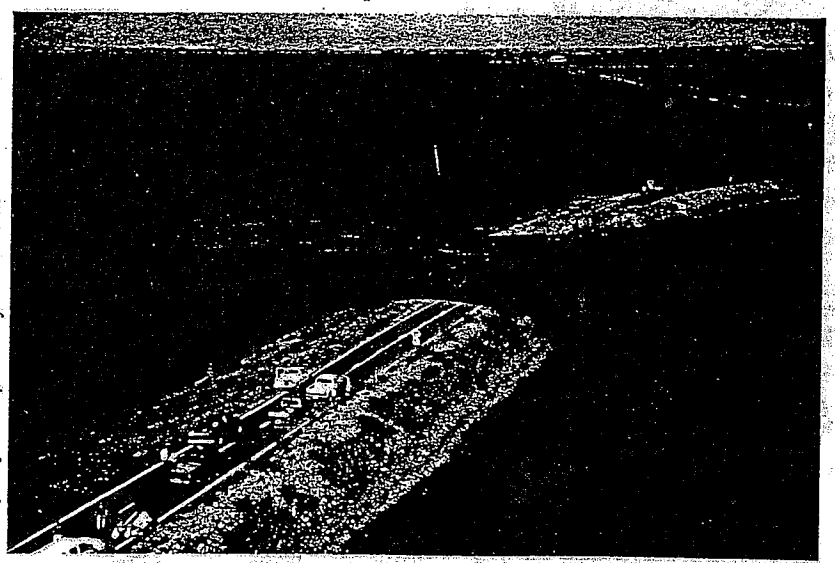

Photo by California Department of Water Resources

The San Joaquin Office of Emergency Services June 3 reported a levee break of 200-300 feet in the Sacramento-San Joaquin River Delta. Officials estimated the breach widened to as much as 500 feet.

State and federal water officials are coordinating efforts to ensure the maximum protection of water supplies for the State Water Project and Central Valley Project. After the break, the U.S. Bureau of Reclamation decreased water exports from the Sacramento-San Joaquin River Delta by 80% and increased freshwater flows from the Sacramento River. The state's pumps were down for maintenance.

Ronald R. Gastelum, chief executive officer of Metropolitan Water District of Southern California, said Southern California is expected to withstand the levee break. "Fortunately, Southern California has sufficient water supplies south of the Bay-Delta in Central Valley groundwater storage projects and state project facilities, including San Luis Reservoir, Castaic Lake and Lake Silverwood," Gastelum said.

As *ACWA News* went to press, the state was pumping at Banks Pumping Plant at 2,000 cubic feet per second (cfs) and the Bureau was pumping at 1,600 cfs at its Tracy Pumping Plant. The U.S. Fish and Wildlife Service reported that no major fish species were impacted yet. The U.S. Army Corps of Engineers is in charge of the levee repair work.

Governor's Proclamation

"I'm deeply concerned for those San Joaquin County farmers that have lost farmland as a result of this unfortunate flood," said Governor Schwarzenegger. "The state of California will work with local agencies to ensure that the levee is repaired and the water is removed from the Upper and Lower Jones Tracts.

"I've directed the Office of Emergency Services (OES) to ensure that all necessary state resources are brought to

Continued on next page

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bear in both the response to and recovery from this emergency."

The governor's action will provide financial relief to the local governments and reclamation districts for the costs of repairing the levee and removing the water that has flowed through. At the governor's direction, OES will also be working with the U.S. Department of Agriculture's Farm Service Agency to see if farmers impacted by this flood may be eligible for emergency loans to help recover from production or physical losses.

Statement From State Water Resources Director

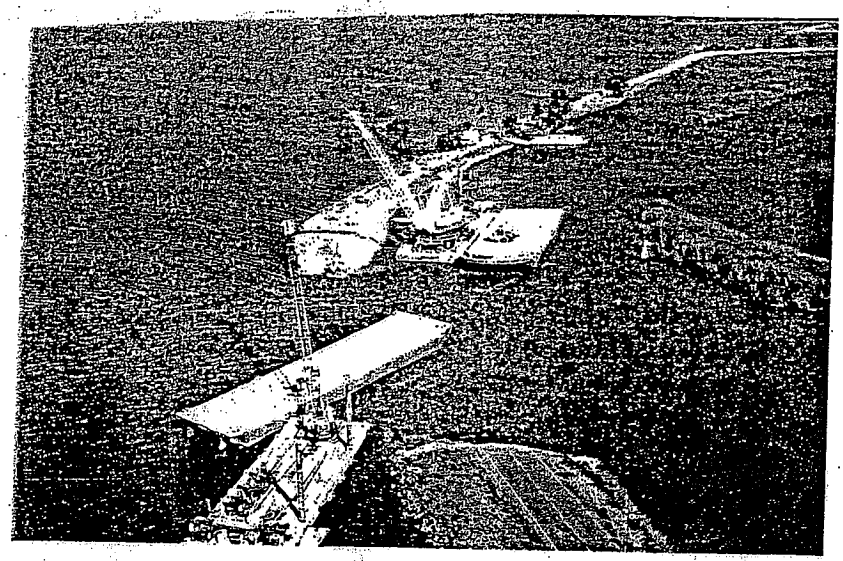
California Department of Water Resources Director Lester A. Snow June 4 issued a statement addressing water quality in the Delta following the levee break:

"I want to assure the public that receives water from the Delta that the Department of Water Resources and the U.S. Bureau of Reclamation are coordinating efforts to ensure the maximum protection of water supplies for the State Water Project (SWP) and the federal Central Valley Project (CVP).

"We are taking additional steps to closely monitor water quality conditions in the Delta. While recent high tides have likely caused a slight increase in salinity, we expect conditions to stabilize soon.

Actions Taken to Protect Water Quality

- The U.S. Bureau of Reclamation has increased releases of fresh water from Shasta Dam to help control salinity.
- The California Department of Water Resources and Bureau of Reclamation have reduced pumping at their South Delta export pumps to reduce the intrusion of seawater.
- Gates at the Delta Cross Channel have been opened to move Sacramento River water into the central Delta to repel seawater intrusion.
- The Department of Water Resources is monitoring Delta water quality at more than 20 sites.
- The Department of Water Resources is monitoring channel velocity changes in the Jones Tract area of the Delta.



The U.S. Army Corps of Engineers is heading the levee repair effort.

Levee System Integrity Among CALFED's Major Program Elements

The Bay-Delta Plan is a balanced, comprehensive approach to reduce conflicts over limited water supplies and to address the program's four objectives through 11 major program elements. Levee system integrity is among the major program elements. With its focus on improving Bay-Delta levees, CALFED is acting to protect water supplies needed for the environment, agriculture and urban uses by reducing the threat of levee failure and seawater intrusion. Delta levees also protect major interstates, roadways, cities, towns, agricultural lands, and environmental and aquatic habitat.

Goals

- Improve levees to a higher standard for greater flood protection
- Improve emergency response capabilities
- Ensure levee maintenance and habitat needs are met
- Improve coordination of permit processes
- Develop adequate and reliable funding for levee maintenance.

Source: CALFED Bay-Delta Program Web site at http://calwater.ca.gov

"The water projects are expected to return to normal operations next week. We will continue working around the clock to assure that CVP and SWP contractors can meet their needs while avoiding unnecessary reliance upon water in storage south of the Delta."

CALFED

Levee system integrity is among the major program elements of the CALFED Bay-Delta Program. As *ACWA News* went to press, the California Bay-Delta Authority was beginning a two-day meeting in Sacramento. Look for coverage from the meeting in the next *ACWA News* and also updates on the levee situation. www.acwanet.com will also feature updates.

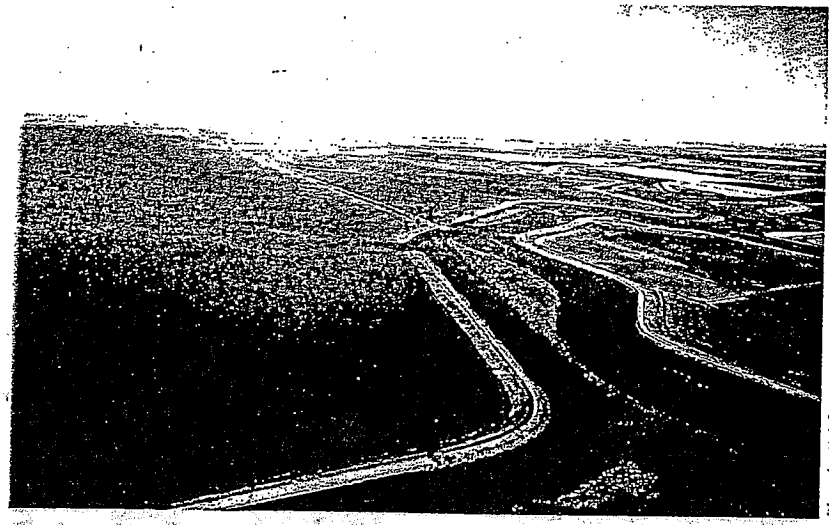


Photo by California Department of Water Resources

The levee break in San Joaquin County flooded 12,000 acres in the Delta.

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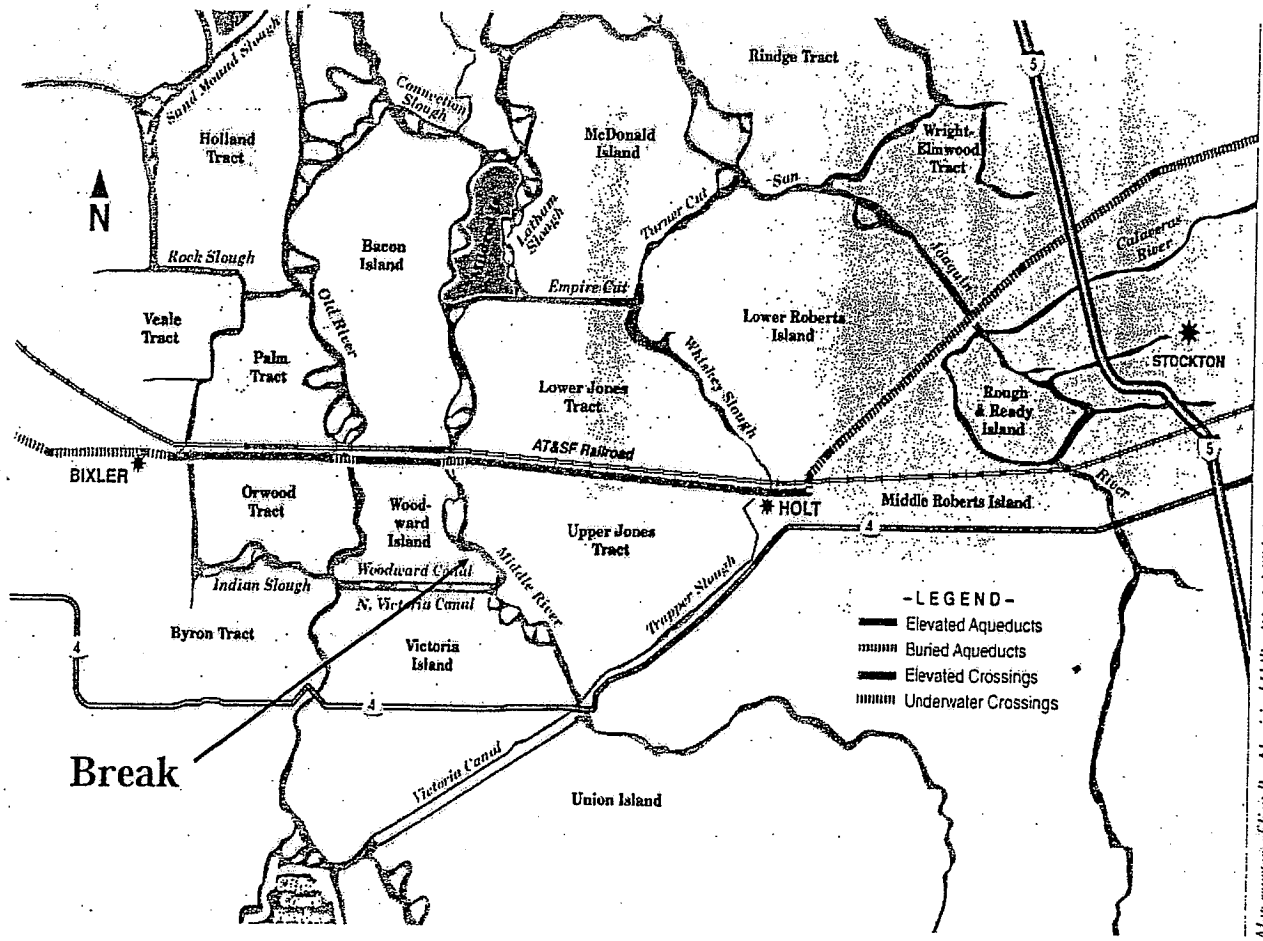

Map courtesy of East Bay Municipal Utility District's Web site

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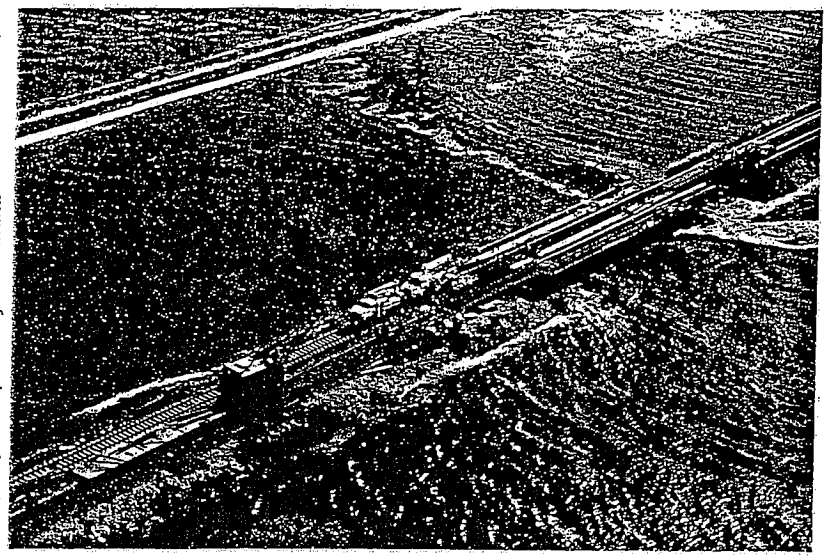

Photo by California Department of Water Resources

Flood waters lap against railroad tracks.

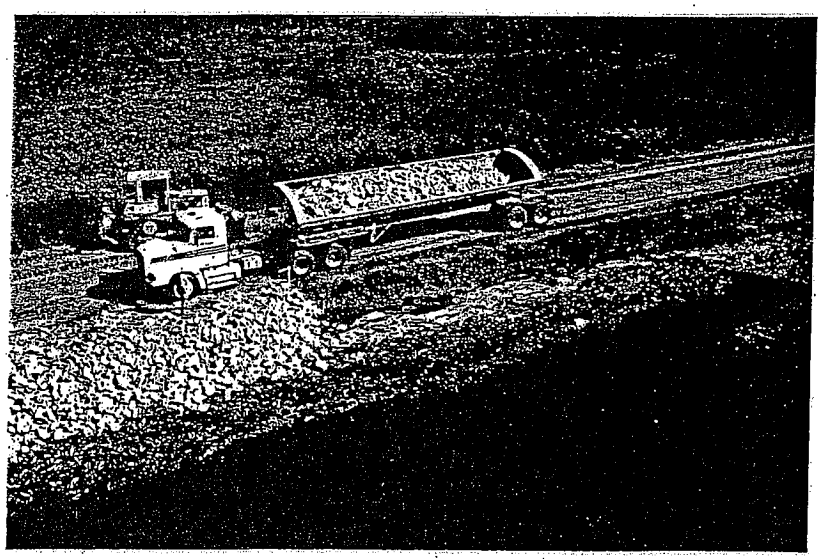

Photo by California Department of Water Resources

Repair work began quickly after a levee failed in the Sacramento-San Joaquin River Delta. The U.S. Army Corps of Engineers is in charge of the levee repair work. The latest cost estimate to repair the break is $18 million. Repairs are now estimated to take 45-60 days.

EBMUD Efforts to Protect Aqueduct System

East Bay Municipal Utility District provided the following information on its Web site at www.ebmud.com:

Delta area levees were constructed in a non-engineered manner in the late 1800s and their vulnerability to failure is well known. Lower Jones Tract levees failed and both Upper and Lower Jones Tracts flooded in 1980. EBMUD efforts to protect the aqueduct system include ongoing funding for levee maintenance projects and the $39 million Mokelumne Aqueduct Seismic Upgrade Project currently underway.

The aqueduct seismic upgrades not only protect the aqueduct in the event of an earthquake affecting the Delta region, but also mitigates the hazards associated with a levee breach. The key hazard posed by a breach is fast-moving water eroding the foundation of the aqueducts (scour).

In 1999, EBMUD reinforced the levees where the aqueducts cross under the rivers and that work included both locations where the aqueducts enter and exit Upper Jones Tract. This strengthening substantially reduces the risk of a breach near the aqueduct thereby reducing the potential of scour to aqueduct foundations.

When a breach occurs away from the aqueduct, as it did on June 3, the flooding causes no hazard to the aqueduct other than to limit accessibility.

Tri-County Watchdogs

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August 13, 2004

Castaic Lake Water Agency
attn. Marylou Cotton
27234 Bouquet Canyon Rd.
Saugus, CA 91350

About: 41,000 Acre Foot Water Transfer SCH# 1998041127

Dear Ms. Cotton:

It is our understanding that this environmental document is being re-circulated by Court Order because the program EIR on which it was based was set aside in the decision PCL v. DWR, 2000. In that decision the Court found that an individual contractor (Central Coast Water Agency) could not be the lead agency for a state wide project that had impacts to a wide geographical and social group of people. The decision found that the Department of Water Resources should be the correct lead agency. We would like to express our dismay that your agency is now proceeding once again in a manner contrary to law by circulating this document as the lead agency and before the Monterey Agreement EIR has been completed. We note that the same General Manager of Central Coast Water Agency, Dan Masnada, that was found to be in violation of CEQA for proceeding as the wrong lead agency, is now the general manager of Castaic Lake Water Agency. In that capacity, he is once again directing his agency to proceed as lead agency in violation of the law. 88

We believe that the Department of Water Resources must be the lead agency for the discussion of the statewide impacts of water transfers for the following reasons.

1. The published appellate decision in PCL v. DWR, 2000 stated "We agree with the trial court that DWR, not CCWA, has the statutory duty of assessing environmental consequences of projects involving the SWP [State Water Project]." (Pg. 1 of decision). We incorporate this decision by reference into the administrative record.
2. DWR is best suited to ensure that widespread notification of interested parties occur.
3. DWR is best suited to recognize environmental impacts that might be incurred to a wide spread area of the state as a result of this water transfer and to properly asses such impacts.
4. DWR, in its capacity as operations manager of the SWP, will be acquainted with other state projects that would affect or be affected by this transfer.

Many anomalies in the CEQA process have already occurred because the general Manager of Castaic lake Water Agency has chosen to proceed contrary to law and to the published appellate court decision in a case to which he was a party. This includes the fact that we were not notified of the circulation of this draft EIR, nor were others in water districts including Berenda Mesa and in other areas statewide. Further, it has recently come to our attention that Berenda Mesa has published a draft EIR to withdraw/divert approximately 70,000AF from local streams and ground water sources. Since the transfer of SWP surface water will affect ground water pumping sources, this EIR and its impacts must be included and addressed during the water transfer review process. We therefore believe this document must be included in the review process and incorporate it by reference. 89 90

The original purpose of the state water project was to provide a supplementary water source so that ground water would not be pumped in excess of sustainable levels. Now it appears that this water transfer will bring about the very situation one sought to avoid. We believe it is imperative that CLWA notify all interested parties in Berenda Mesa and other areas proposing increased ground water pumping, of their intention to make this transfer, because pumping 91

of ground water sources to replace state water transferred to other areas will have significant impacts on the Public Trust and the viability of farming operations. 91

Such impacts to ground water that affect both public trust surface flows and water for farming, should be addressed in the program EIR. It is therefore improper for CLWA to proceed before the completion of the Monterey Agreement EIR. 92

In conclusion we request that this document be withdrawn, that the document not be re-submitted for circulation until the Monterey agreement EIR is completed and certified and that all parties whose ground water may be impacted are properly notified when re-circulation occurs. 93

Thank you for your time.
Sincerely Yours,

Jan de Leeuw, Ph.D.

cc: Kern County Water Agency,
Wheeler Ridge Maricopa Water Storage District,
Department of Water Resources

Castaic Lake Water Agency
attn. Marylou Cotton
27234 Bouquet Canyon Rd.
rus, CA 91350

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UNITED WATER CONSERVATION DISTRICT

"Conserving Water Since 1927"

July 26, 2004

Ms Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Re: Draft Environmental Impact Report California State Clearinghouse No. 4998041127 Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Dear Mary Lou,

United Water Conservation District has reviewed the Draft EIR for the proposed transfer of 41,000 acre-feet of State Water Project Table A Amount water from the Kern County Water Agency's member unit Wheeler Ridge-Maricopa Water Storage District to Castaic Lake Water Agency. This proposed transfer of SWP water is beneficial to the Santa Clara River Watershed and is fully endorsed by United Water. 94

The permanent transfer of 41,000 acre-feet of SWP water to the Castaic Lake Water Agency provides a valuable additional source of water for the Santa Clarita Valley. This additional water improves the potential for conjunctive-use of water within the valley. This is especially important given the urbanization of this area. Increased surface water supplies should provide water managers throughout the basin more flexibility with respect to the magnitude of additional groundwater pumping needed to meet the escalating M&I demand for water within the basin. 95

Although discussed in various sections within the Draft EIR, it should be reemphasized here that 41,000 acre-feet of SWP Table A Amount water doesn't guarantee this amount can be delivered every year. Hydrologic conditions and storage carryover in any particular year primarily dictate the annual allocation of water to the SWP Contractors. Historic deliveries to M&I Contractors should not be used to project future deliveries. The adoption of the Monterey Amendment (following the principles of the Monterey Agreement) will require that M&I Contractors and Agricultural Contractors more equitably share the pain of future water shortages. During the previous drought, allocations, as a percentage of Table A Amount (Entitlement), to Agriculture Contractors were significantly less than allocations to the M&I Contractors. 96

106 N. 8th Street • Santa Paula, California 93060 • Phone (805) 525-4431 • FAX: (805) 525-2661

UNITED WATER CONSERVATION DISTRICT

As an ongoing general comment to all water purveyors within the Santa Clarita Valley, United Water has a very real interest in the continued health of the Santa Clarita Groundwater Basin and the flow of the Santa Clara River. United Water represents the collective interests of downstream residents that depend on the flow of the Santa Clara River for recharge to groundwater, surface water diversions, and environmental mandates. United Water's goal is that the quantity and water quality associated with the flow of the Santa Clara River into Ventura County not be diminished. The development and implementation of the inter-Agency regional monitoring program of groundwater levels, groundwater quality, surface water flows, and surface water quality should provide ongoing data with respect to the relative health of the Santa Clarita and downstream basins as well as surface water. In the event that surface water flow into Ventura County is diminished in either quantity or quality, and can be reasonably linked to over pumping of the aquifer systems and/or surface water discharges to the river within Santa Clarita Valley, United Water would seek to remedy the problem. 97

We appreciate the efforts of CLWA to appropriately plan and augment the water supplies of our watershed as represented by this water transfer project. If you should have questions please contact either Ken Turner or myself at (805) 525-4431.

Sincerely,

Dana L. Wisehart

Dana L. Wisehart
General Manager

Cc: BDRF
Ron Calkins, P.E., Public Works Director, City of San Buenaventura
Cliff Finley, P.E., Public Works Director, City of Santa Paula
Carrie Mattingly, Director of Utilities Services, City of Port Hueneme
Mike Miller, General Manager, Pleasant Valley County Water District
Ken Ortega, P.E., Water Superintendent, City of Oxnard
Lowell Preston Ph.D., Manager, Water Resources Division, Ventura County
Bert Rapp, P.E., City Engineer, City of Fillmore
Robert Sawyer, Santa Paula Basin Pumpers Association

File: Castaic Lake Water Agency
H:\ken\Eastern_GWBasin\CLWA DEIR 41000 AF Transfer 7_26_04

FAX to (661) 297 1611

[redacted]y Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Rd.
Santa Clarita, CA 91350

Dear Ms. Cotton:

Please accept these comments with the attachments in opposition to the proposed transfer. Besides being an arrogation of power by CLWA unto itself, it flies in the face of the present process at the State level to properly assess the environmental impacts of the Monterey Amendments as mandated by the Court of Appeals. What is particularly troubling is the adoption of material developed by DWR on SWP reliability which is demonstrably in-correct. As a member of the plaintiff committee presently engaged with DWR to fashion a new Monterey EIR, I am quite aware of the issues involved with the CALSIM II model, which is the model used to generate the incorrect information on SWP reliability. The attached analysis shows why the reliability information is incorrect and argues that until the CALSIM II model can correct its fundamental deficiencies it cannot be relied upon. Without this model's results the CLWA EIR is without any foundation for the claims made concerning the reliability of supplies that CLWA attaches to the SWP. In fact, one can make the argument on the same basis that present CLWA SWP supplies are already overtaxed. 98

Sincerely,

Arve R. Sjovold
186 Sierra Vista
Santa Barbara, CA
93108

ON THE ADEQUACY OF CALSIM II FOR ENVIRONMENTAL IMPACT ANALYSIS AND SWP RELIABILITY ANALYSIS

By: Arve R. Sjovold

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Introduction:

The matter of application of CALSIM II to a variety of analyses has been questioned by many in water resources analyses, most notably by the scientific peer review team recently convened by the California Bay Delta Authority Science Program, Association of Bay Governments whose comments have been documented in a report dated December 4, 2003. In that report the peer review panel made many comments on the adequacy of CALSIM II which have yet to be acted upon. Several of the comments are directly related to the adequacy of CALSIM II to address the applications of environmental impact analyses and delivery reliability analyses of the SWP. The peer review was broad in reach and not directed toward any specific application. However, its comments regarding the applications cited above are very pertinent now that the Department of Water Resources (DWR) is moving ahead to use this model for purposes of assessing the environmental impacts of the Monterey Amendments to the SWP contracts and because the Castaic Lake Water Agency (CLWA) is also using the same model outputs for justifying its Urban Water Management Plan and a controversial action to claim as lawful a 41,000 acre-foot transfer of SWP entitlement from the Kern County Water Agency.

Because DWR has not acted on any of the peer review recommendations regarding deficiencies in CALSIM II, it is important that a clear statement be made regarding CALSIM II's adequacy to pursue both the environmental impact analysis of the Monterey Amendments and the CLWA proposed action. Because both environmental impact analysis and delivery reliability analyses require some measure of accuracy in their assessments it is vitally important to assess the accuracy of the CALSIM II calculated estimates. We and the peer review panel agree that calibration of the model is paramount if we are to make any confident statements of accuracy for this model. To date DWR has refused to do a timely calibration of the model even though they have been asked on many occasions over the past several years to do so. It is disingenuous on their part now to move ahead with production runs from this model arguing that they have insufficient time to do a proper calibration. Nevertheless, there are some definitive statements that can be made at this time based on the information made available by DWR in various documents.

Accuracy

Both the preliminary outputs for the environmental impact analysis and the documented outputs from the reliability assessment performed by DWR show levels of export from the Delta that average 50% higher than any estimates of actual average

exports evident to date. These predicted levels of export are not qualified by any statements of how accurate they may be based on comparisons to the historical record. In responses to comments received on their final report on delivery reliability they did include some comparisons to predicted and actual deliveries during the most recent drought (1987-1992). That report also reported actual delivery history through 2003. Although the comparison during the drought seems quite good, that same comparison shows that the SWP could not come close to requested deliveries (Demands) over that period. Additional information supplied by DWR in the appendices of that report also shows that even after the drought, actual deliveries showed large shortfalls below requests. Table 1 shows the data extracted from the DWR reports. (These data are for Table A requests and Table A deliveries.)

Table 1

COMPARISONS OF ACTUAL DELIVERIES AND REQUESTED DEMANDS (maf/yr) 1987 to 2002

Year	Requested Demands	Actual Deliveries
1987	2.7	2.14
1988	2.6	2.32
1989	3.0	2.71
1990	3.1	2.45
1991	3.5	0.55
1992	3.6	1.38
1993	2.75	2.10
1994	2.7	1.75
1995	3.15	1.87
1996	2.7	2.21
1997	3.0	2.29
1998	3.2	1.62
1999	3.2	2.52
2000	3.6	2.71
2001	4.05	1.39
2002	3.9	2.52

It is apparent that throughout this period the SWP had difficulty meeting requests. It is significant to note that the last several years bracket the year 2001, which is one of the parametric levels of development for which CALSIM II calculates expected deliveries. It is also noteworthy that the average delivery for the last 6 years in this series is virtually the same as the first 6 years, the acknowledged period of the drought. The series shows a trend whereby the requests slowly increase over time but in the last 6 years of the series the contractor requests are virtually at the same level as that parametrized for the CALSIM II 2001 run. Accordingly, it is difficult to see how DWR can state that the primary reason that past deliveries are not as high as the model now predicts for the 2001

run is "..that the contractors did not ask for enough in the past." These data clearly show that the SWP has difficulty averaging more than 2.0 maf independent of request levels. It also demonstrates why it is important to calibrate this model so that we can deduce why it fails to accurately reproduce the historical record by any ordinary accounting. We may conclude that the CALSIM II model, absent calibration, is inadequate for any application relying on the accuracy of its calculations. One may state that, based on the data record of requests and deliveries, that the CALSIM II model overestimates deliveries by at least 50% on average. We can further state that the SWP based on the history of actual deliveries can not be relied upon for more than 2.0 maf of total delivery, approximately 48% of Table A entitlements. The record also clearly shows that in the depths of a prolonged 6 year drought that the average reliable delivery is not more than 38%(See my analysis of the statistical analysis of the CALSIM II calculations; "ANALYSIS OF SWP RELIABILITY OF DELIVERY", November 11, 2003.) We may further state that without a peer reviewed calibration and appropriate documentation, that CALSIM II cannot be relied upon for the accuracy of its calculations. These are all important conclusions regarding, the adequacy of CALSIM II to support environmental impact analysis or for estimating SWP delivery reliability.

We also note that the charts presenting the results of the CALSIM II runs in support of the Monterey EIR seem to predict even higher deliveries overall than was shown in the DWR reliability report for ostensibly the same conditions and constraints. The reliability report presents 73 year average deliveries of approximately 3.1 to 3.2 maf for the 2020 scenario while the more recent runs are reporting 3.4 maf for the same scenario. A difference of this amount needs to be explained as to where the additional water is coming from.

Another factor affecting the accuracy and utility of CALSIM II calculations is the reconciliation of its optimal outputs with feasible SWP operational scenarios. It is a characteristic of an optimization methodology as used in CALSIM II to substitute the optimization algorithm for the detailed simulation of all the decision operations that properly depict the real system. In the particular optimization used in CALSIM II the set of solution weights is the surrogate for all the decision criteria that would ordinarily be simulated. In order to render the results of the optimization calculations useful, the set of solution weights must be reduced to a realistic, feasible set of decision criteria that can be implemented. Otherwise, there is no assurance that the optimization results are realizable.

Environmental Impact analysis

DWR has recently presented draft presentations of CALSIM II outputs in support of environmental impact analysis for the Monterey Amendments EIR. These calculations are performed on the same basis as those used in the SWP reliability of delivery analysis in that the model is not calibrated and the methodology is the same. However, the impact analysis proceeds on assumptions that may or may not be applied to previous calculations for reliability delivery. Most important, beyond the fundamental deficiency of an uncalibrated model, are the assumptions made on the priority of exports.

One of the fundamental scenarios in effect mandated by the Court of Appeals is to study the "no project alternative." This is the scenario where it is envisioned that DWR invokes Article 18(b) to address the chronic deficiency to deliver full entitlement

amounts as articulated in the SWP contracts. If Article 18(b) is invoked it requires that DWR reduce uniformly the stated Table A entitlements of all the contractors down to a level that reasonably conforms to the ability of the project to deliver those entitlements reliably. The data in Table 1 above suggest that this new level of aggregate entitlement should be about 2.0 maf or less compared to the original 4.23 maf of the original contracts. This represents a uniform lowering of contractor entitlements of approximately 47%. If DWR were to take this action, it would raise the question of how water exports would be managed when there is more water coming into the Delta than would seem necessary to meet entitlements, the so-called "surplus" water.

The calculations performed by DWR with CALSIM II assume that all the water that arrives in the Delta is available after meeting regulatory requirements in the Delta and after providing for Delta uses. The regulatory requirements that are assumed are those prevailing today. Therefore, the calculations simply treat the surplus water created by invoking Article 18(b) as water to be freely exported as before. In consequence, the amounts shown in the preliminary runs show nearly similar totals to those without invoking Article 18(b). The only significant difference between runs with and without Article 18(b) invoked is the label put on the water exported; the amounts are the same.

There are several things wrong with this assumption regarding surplus water. If indeed there is water that is surplus to regulatory constraints it does not necessarily mean that it is in the same entitlement category as entitlement water (i.e. Table A water). This is especially true when one considers that present operations have not redressed nor restored the Delta environment. If water is surplus beyond entitlement water its use to redress environmental damage in the Delta must be given priority over exports as surplus. At the very least, CALFED should not be required to pay for water to put in the environmental water account to offset costs to would-be entitlement exports when the SWP is mandated to stop pumping for protection of endangered species. In fact, export of so-called surplus water should be accorded lower priority than any watershed of origin claims. In other words, surplus water should be dedicated to protection of the environment in the watershed of origin before consideration is given to export to what are recognized as junior water rights holders. We cannot accept that export water has superior claim to water originating in the Sacramento and Trinity watersheds in analyzing environmental impacts of this project. The environmental impact analysis must consider the use of surplus water in fashioning an environmentally superior alternative to the assumed no-project alternative used in developing CALSIM II estimates. Furthermore, we must acknowledge that regulatory constraints established on the basis of existing operations, especially when considering the adversarial nature of the process of water rights hearings, cannot be considered as fixed limits on future operations that on their face propose to export at least 50% more water than the conditions that led to those constraints. Calculations that purport to show that 50% more water can be exported than present operations must be subjected to careful scrutiny as to the likelihood of even more damage to the environment than has already been sustained. We cannot simply assume that the existing constraints are satisfactory to de-limit environmental impacts in the face of increased exports. The calculations must reflect real considerations of more stringent constraints with increasing exports if they are to be used for environmental impact assessments.

In previous meetings of the EIR sub-committee on modeling, flow charts of the simulation network that is modeled were presented. At those meetings objections were raised concerning the lack of any fidelity in network representation for south-of-Delta operations. This especially concerns operations of the San Joaquin and Stanislaus rivers as well as the operations of the Kern Water Bank. We have since learned that detailed networks for the San Joaquin and Stanislaus systems have indeed been developed for other analyses. We see no reason why this detail should not be included in the CALSIM II model used for the Monterey Amendments EIR. We also note that even in this additional detail, no distinction is made between exports of entitlement and surplus water as far as priority of uses in the model calculations. We request that in all CALSIM II simulated systems in either the Sacramento or San Joaquin valleys carefully reflect that surplus water flows, where ever they may occur, should be represented as lower priority than water shed of origin uses, whether in-stream or diversions for beneficial use.

We have also learned that SWP and CVP contractor demand functions are used on their face to establish the amounts of exports that guide the optimization of the CALSIM II model, while the settlement contractors in the area-of-origin are modeled by simulation of actual applied water requirements based on land use. Since the water rights of export are necessarily junior to those of the settlement contractors we see no reason why export contractor demand, at a minimum, should not be modeled to the same degree as the settlement contractors. In fact, the modeling of settlement contractor demands based on land uses in the Sacramento and Feather River areas show that these diversions are approximately 1maf less than the maximum under the settlement contracts. This means that export amounts calculated by CALSIM II include in effect a "borrowing" of water that by right belongs to settlement contractors. Is it proper to include such water as entitlement water to exporters when it may in fact be taken by senior rights holders at some unspecified time?

We also note the export demand functions are assumed at Table A levels for all but the two largest contractors, MWD and KCWA, even though most of the contractors do not have sufficient storage to balance wet year deliveries with dry year deliveries. (See my analysis of the reliability report previously cited.) We also note that the SWP contractor demand functions for each contractor must be developed consistent with the ability of the contractor to accept SWP water when it is available. In many cases, without equalizing storage, a contractor cannot even accept his full annual entitlement because of capacity constraints. Our calculations on this limitation could limit the effective delivery of entitlement water to about 60% of the full Table A annual entitlement in some cases. The degree to which a specified contractor can avail himself of SWP deliveries depends critically on how he structures his priority of use of his different sources of supply. To maximize SWP entitlement deliveries, a contractor may often have to forego the use of a cheaper, local source and instead pay a little more to secure a higher reliability of delivery of SWP water. To our knowledge none of these considerations have been factored in to the assumptions of contractor demand and the preliminary calculations produced by CALSIM II cannot be taken as realistic.

Reliability of Delivery Analysis

For reliability of SWP deliveries it should be clear that only deliveries against Table A amounts can be accounted. Since the majority of SWP deliveries are designated as M&I, those uses, which entail fixed structures dependent on firm water supplies, cannot be tied to speculative deliveries associated with so-called "surplus" water. The calculations supplied by CALSIM II to date do not distinguish the importance of the delivery categories to the reckoning of reliability of supply. Even those contractors that have some level of equalizing storage by which they can store surplus wet year deliveries to be used in times of drought should have to demonstrate and implement a plan to use the deliveries in that way before any surplus deliveries can be accounted as firm supply, and the amounts of surplus delivery to be expected must meet all the requirements for environmental protection in the watersheds of origin as cited above.

We must also state that DWR's continued use of frequency charts to present the results of its calculations on reliability of delivery is unwarranted. There is no statistical basis presented by DWR to show why drought deliveries should be lumped with normal and wet year deliveries in a single frequency diagram. (Again see my analysis of delivery reliability cited above.) This flagrant misuse of statistics is now being seized upon by local planning authorities who adopt SWP reliabilities that cannot in fact be sustained. The consequence is that in all probability local land use plans are being based on erroneously high deliveries that are the epitome of "paper water." Irrespective of the accuracy and deficiencies of CALSIM II, DWR must provide more robust statistical analyses of CALSIM II outputs if they are to be useful to anyone.

The assessment of SWP delivery reliability must depend on calculations that meet stringent requirements of accuracy and proper statistical practice. Neither requirement is presently met by the CALSIM II model.

Conclusions

Because of the necessity of having accurate estimates of SWP deliveries under the scenarios cast for the EIR impact analyses, it is absolutely required that this model be calibrated and peer reviewed for that calibration. Based on the record to date of SWP operations there is no reason to believe that the CALSIM II calculations have any utility for EIR impact analyses.

The scenarios that have been cast must be reformulated to consider uses of so-called "surplus" water for environmental restorations and enhancement in the water sheds of origin. It cannot be taken as given that water identified by the SWP contracts as surplus to whatever level of Table A entitlements is free to be exported solely to the contractors.

The calculations of CALSIM II must be reported in more detail to deduce environmental impacts. At a minimum, estimates for delivery to each contractor must be reported by month and arrayed against each contractor's monthly requests. DWR must ascertain the validity of each contractor's water supply plan insofar as the use of SWP water is involved. Of particular concern is the availability of equalizing storage in each contractor's service area. This is to assure that no contractor is taking water for beneficial use that can be claimed by a superior right holder in the watersheds of origin.

DWR must provide for a more thorough and robust statistical analysis of CALSIM II's calculated outputs. The present portrayals are simply improper and not

deserving of the effort that has gone in to generating the outputs. The present outputs cannot be used to make any useful estimates of reliability of delivery.

DWR must show that the optimization results represent a feasible solution of realistic decision criteria by which the project can be operated.

ANALYSIS OF SWP RELIABILITY OF DELIVERY

**(Based on the DWR Report:
"The State Water Project Delivery Reliability Report, 2002, Final)**

BY ARVE R. SJOVOLD

November 11, 2003

Introduction

The California Department of Water Resources (DWR) released its final draft of a report presenting its analyses of the reliability of delivery of State Water Project (SWP). The analyses are based on a series of simulations performed with its CALSIM II model, which is a combination of two previously independent models, DWRSIM developed by DWR for the SWP, and PROSIM developed by the Bureau of Reclamation (BOR) for the Central Valley Project. It was deemed necessary to merge these two models because the joint operations in the Delta from which the water is exported have become very integrated.

The CALSIM II model is also being proposed as the primary analytic tool to evaluate the impacts of the SWP under the Monterey Amendments in an EIR now underway. The adequacy of this model is now under scrutiny as part of this EIR process and questions have been raised as to how accurate its calculations are and how well those calculations have been verified by model calibrations.

This analysis of SWP reliability is based on the calculations done with CALSIM II as reported in DWR's report as stated above. This analysis does not assume that those calculations are necessarily accurate but there still is much to be learned from those results even if their accuracy is in question.

This analysis first explores the character of the statistical output of the CALSIM II published results. Then we explore the kinds of interpretations that can be deduced from these results once we understand their statistical character. Some conclusions are then drawn about SWP delivery reliability in general and under varying circumstances that can be expected among the several SWP contractors receiving this water and what they can truly rely on. However, we must stress that even these conclusions are preliminary and still subject to change once the CALSIM II model has been properly calibrated and peer reviewed.

CALSIM Calculations

The basis for the statistical analysis in this report is the CALSIM II output record presented in the referenced report as Table B-3, "Study 2001 SWP Delta water delivery," which provides calculations of the annual export of SWP water over the 73-year period from 1922 to 1994. The reference to 2001 in the Table title refers to the condition that all actual hydrologic records for this period have been adjusted to reflect 2001 conditions of development. That is, the withdrawals of water in the Sacramento Valley are based on the level of development evident or reasonably expected to prevail at that time and the

system of dams and diversions are those expected to be in place at that time. The calculations also assume the level of State Water Resources Control Board (SWRCB) constraints that will exist at that time except for variable restrictions that may be imposed by the Endangered Species Act (ESA) to protect targeted species in the Delta.

The calculations also make assumptions about the level of demands from the SWP contractors to be supplied by water exported from the Delta by the project. The explicit demand functions for each contractor are not presented in the report but it is evident in Table B-3 that the demands are variable and near the maximum. The Table B-3 calculations present for each year, the level of demand sought by the contractors in the aggregate, the calculated deliveries against those demands (explained in the report to be the "Table A" demands called for in the contracts), the calculated percentage of the full "Table A" demands that the estimated delivery represents, and the calculated delivery of Article 21 water that would be expected to be delivered. (Article 21 water is essentially "surplus" water that is available only on certain conditions and cannot be assumed to be reliably available.) The Table B-3 is reproduced here as Table 1 for reference except the column for the percentage calculation in the original table was not included.

This statistical analysis deals only with the deliveries of Table A water that DWR is obligated to deliver when it is available to meet contractor requests. Reliability of delivery should be related solely to that water that DWR is obligated to deliver.

How is Reliability defined?

Reliability is not a precisely calculated attribute. It involves considerations of risk. For water supply, one normally establishes the level of risk for shortfalls in the supply at some level of probability. For "Safe Yield" calculations for reservoirs like Cachuma in Santa Barbara County, a reservoir dedicated primarily to urban supply, the risk level is established at a 5% chance of not delivering the stated "safe yield" in any given year if the worst drought of record is repeated. This is a relatively prudent choice if the record of runoff supplying the reservoir is sufficiently lengthy to provide confidence in the calculation. For Cachuma, the worst drought is probably the late 40s and early 50s and it establishes a six year period that the reservoir must carry-over water before it is refilled and spilling.

For SWP contractors, it is apparent that no one level can be chosen that will provide the same risks to all. Each contractor has different capabilities to withstand a drought depending on his particular mix of other water supplies. So it is important for each contractor to be able to deduce what level of deliveries he can utilize and rely on from the SWP so that he may be able to efficiently operate all of his sources in conjunction. Since the SWP is not operated to carry-over significant amounts of water for more than a year, it is important to characterize the level of deliveries that can be expected over a variety of conditions. In this manner, each contractor can deduce the reliable level of SWP deliveries appropriate to his system of water supplies.

Since periods of drought are the ones that stress water supplies, the calculation of reliability must focus strongly on the project's capability to deliver water in those periods. Contractors that have significant storage means may be able to take delivery of more water in preceding wet periods to be held in reserve for use in droughts. Thus such a contractor can improve his capability to serve demand during droughts. However, that

TABLE 1

CALSIM RESULTS, TOTAL SAMPLE=73

OBSERVATION		MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS
	1922	3407	3389	175	
	1923	3717	3727	143	
3	1924	3961	1014	0	
	1925	3940	1502	0	
	1926	3777	2951	0	
5	1927	3543	3504	220	
7	1928	3897	3337	155	
	1929	3952	1037	0	
	1930	3922	2697	92	
10	1931	3971	1141	0	
1	1932	3673	1620	199	
2	1933	3938	1663	134	
13	1934	3981	1689	0	
4	1935	3697	3439	81	
5	1936	3769	3638	0	
16	1937	3451	3297	87	
17	1938	3418	3438	470	
8	1939	3673	3475	227	
9	1940	3713	3544	102	
20	1941	3013	3036	100	
1	1942	3583	3599	513	
2	1943	3632	3545	447	
23	1944	3563	3449	0	
	1945	3612	3479	136	
5	1946	3710	3724	3	
26	1947	3954	2652	0	
27	1948	3959	2681	2	
8	1949	3864	2568	2	
9	1950	3812	2909	0	
30	1951	3779	3794	311	
1	1952	3078	3108	103	
2	1953	3790	3801	272	
33	1954	3833	3803	98	
34	1955	3761	1694	0	
5	1956	3639	3649	261	
6	1957	3759	3331	96	
37	1958	3481	3492	441	
8	1959	4055	3506	265	
9	1960	4115	1795	0	
40	1961	4115	2873	0	
41	1962	3689	3158	21	
2	1963	3634	3630	223	
43	1964	3907	3262	5	
44	1965	3586	3256	98	
5	1966	3722	3731	147	
6	1967	3439	3424	497	
47	1968	3792	3548	402	
8	1969	3157	3151	100	
	1970	3714	3727	406	
	1971	3837	3845	0	
51	1972	4012	3057	2	
2	1973	3611	3592	261	
3	1974	3649	3664	287	
54	1975	3720	3737	415	
5	1976	4014	3150	110	

CALSIM RESULTS, TOTAL SAMPLE=73 (Cont.)

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS
56	1977	3948	804	0	
57	1978	3126	3036	100	
58	1979	3527	3509	140	
59	1980	3197	3208	100	
60	1981	3834	3532	124	
61	1982	3451	3471	386	
62	1983	3007	3036	200	
63	1984	3692	3706	408	
64	1985	3753	3540	0	
65	1986	3345	3023	51	
66	1987	3904	2894	0	
67	1988	4026	967	0	
68	1989	4097	2902	0	
69	1990	3961	1101	0	
70	1991	3957	983	0	
71	1992	3880	1199	0	
72	1993	3559	3505	133	
73	1994	3739	3272	9	
74	*VARIABLES	DEM	DELKAF	ARTKAF	
75	*KEYWORDS				

capability for that contractor does not necessarily improve the prospects of those contractors without much storage who must rely on SWP.

The first step then is to examine the CALSIM II calculated output record in Table 1 to establish the temporal variations in expected deliveries.

Statistical Character of the 73 year record

Table 1 presents the results of the CALSIM II model for the 73 year period, 1922 to 1994. This record was analyzed using standard statistical techniques available in a software package called "COSTAT," which includes a variety of standard calculational routines for multiple regression as well as simple univariate data sets. Only the univariate capability was necessary to apply here.

The results of a univariate analysis of the entire 73 year sample are presented in Table 2 and in Figure 1. Table 2 shows the sample mean, variance, standard deviation, and other attributes of the data set. Figure 1 shows the histogram of the frequency of different levels of delivery. Figure 1 is most interesting in that it shows the sample to comprise two distinct domains, one constituting most of the sample showing the deliveries for what can be called normal or wet years and the other constituting the collection of dry years. There is a region in between these two domains, between 2100 and 2540 taf (thousands of acre-feet) for which there are no calculated deliveries. According to Table 2 the average of this 73 sample is 2961.8 taf which is not within the main mode of the normal/wet year data. Thus the sample average is not representative of any particular attribute of this bi-modal distribution.

Statistical tests were performed to determine whether or not these two subsets of the data, normal/wet and dry, can be considered to come from the same population. The answer is most definitely not. To perform this test the 73 year period was separated into the two nominal populations for which means and variances were calculated and tested for significant differences using a standardized "t-test." The probability that such a bi-modal distribution could be drawn from one population by chance is infinitesimally small. Accordingly, no confident statements can be made about probabilities of delivery by assuming the sample to come from one population. **As a consequence, the reported average and the use of the frequency charts in DWR's report are without statistical validity. No probabilistic statement of delivery reliability can be derived solely from the frequency charts presented in the report.**

If we examine the record of calculated deliveries shown in Table 1, it is quite evident that there are extensive dry periods, the worst of which is shown as that from 1929 through 1934. In fact, this is referred to as the historic worst drought. The drought most recently experienced, 1987 through 1992, also 6 years in duration, was almost as severe from a hydrologic standpoint. Each of these two periods has embedded one decent year that if it were not part of the drought episode would not be so significant. The fact that it is embedded is important because following a dry year or dry sequence the embedded year is not good enough to refill the two big SWP reservoirs, Oroville and San Luis, for the following year. Hence it is part of the drought sequence. (It would have been helpful to understanding SWP operations if the calculated record showed the end of water year storage levels for these two reservoirs.)

TABLE 2
ANALYSIS, TOTAL SAMPLE

Data Set: SWP_REL.cst
Date & Time: 01-04-80 09:37 am

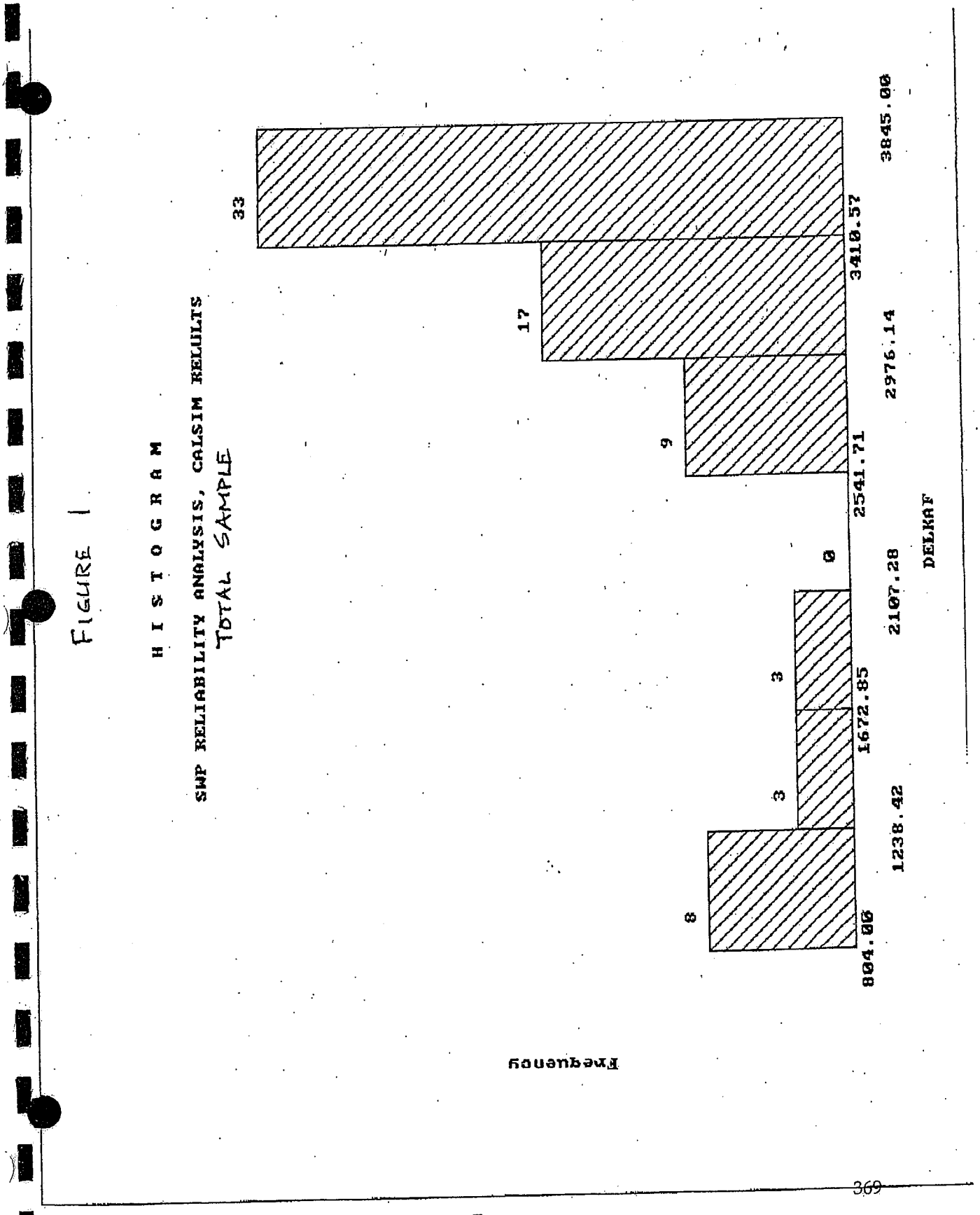
UNIVARIATE DATA ANALYSIS : (DELKAF)

Data Description		Descriptive Measures	
# of observations	: 73	Mean	: 2961.781
# of missing values	: 0	Std Dev(Sample)	: 878.175
Maximum	: 3845.000	RMS(Population)	: 872.139
Minimum	: 804.000	Median	: 3297.000
Range	: 3041.000	1st Quartile	: 2785.000
		3rd Quartile	: 3544.500
		Skewness	: -1.269

Inferential Values

Measures		Confidence Interval (95%)	
Mean	: 2961.781	Lower	: 2760.327
Std Error	: 102.783	Upper	: 3163.235

FIGURE 1


HISTOGRAM
SWP RELIABILITY ANALYSIS, CALSIM RESULTS
TOTAL SAMPLE
Frequency
33
17
9
0
3
3
8
3845.00
3410.57
2976.14
2541.71
2107.28
1672.85
1238.42
804.00
DELKAF

SWP RELIABIITY ANALYSIS, DROUGHT YEARS

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS
1	1929	3952	1037	0	
2	1930	3922	2697	92	
3	1931	3971	1141	0	
4	1932	3673	1620	199	
5	1933	3938	1663	134	
6	1934	3981	1689	0	
7	1988	4026	967	0	
8	1989	4097	2902	0	
9	1990	3961	1101	0	
10	1991	3957	983	0	
11	1992	3880	1199	0	
12	*VARIABLES	DEM	DELKAF	ARTKAF	
13	*KEYWORDS				

TABLE 4
ANALYSIS, DROUGHT YEARS

Data Set: SWP_REL4.cst
Date & Time: 01-04-80 09:18 am

UNIVARIATE DATA ANALYSIS : (DELKAF)

Data Description		Descriptive Measures	
# of observations	: 11	Mean	: 1545.364
# of missing values	: 0	Std Dev(Sample)	: 678.004
Maximum	: 2902.000	RMS(Population)	: 646.452
Minimum	: 967.000	Median	: 1199.000
Range	: 1935.000	1st Quartile	: 1037.000
		3rd Quartile	: 1689.000
		Skewness	: 1.069

Inferential Values

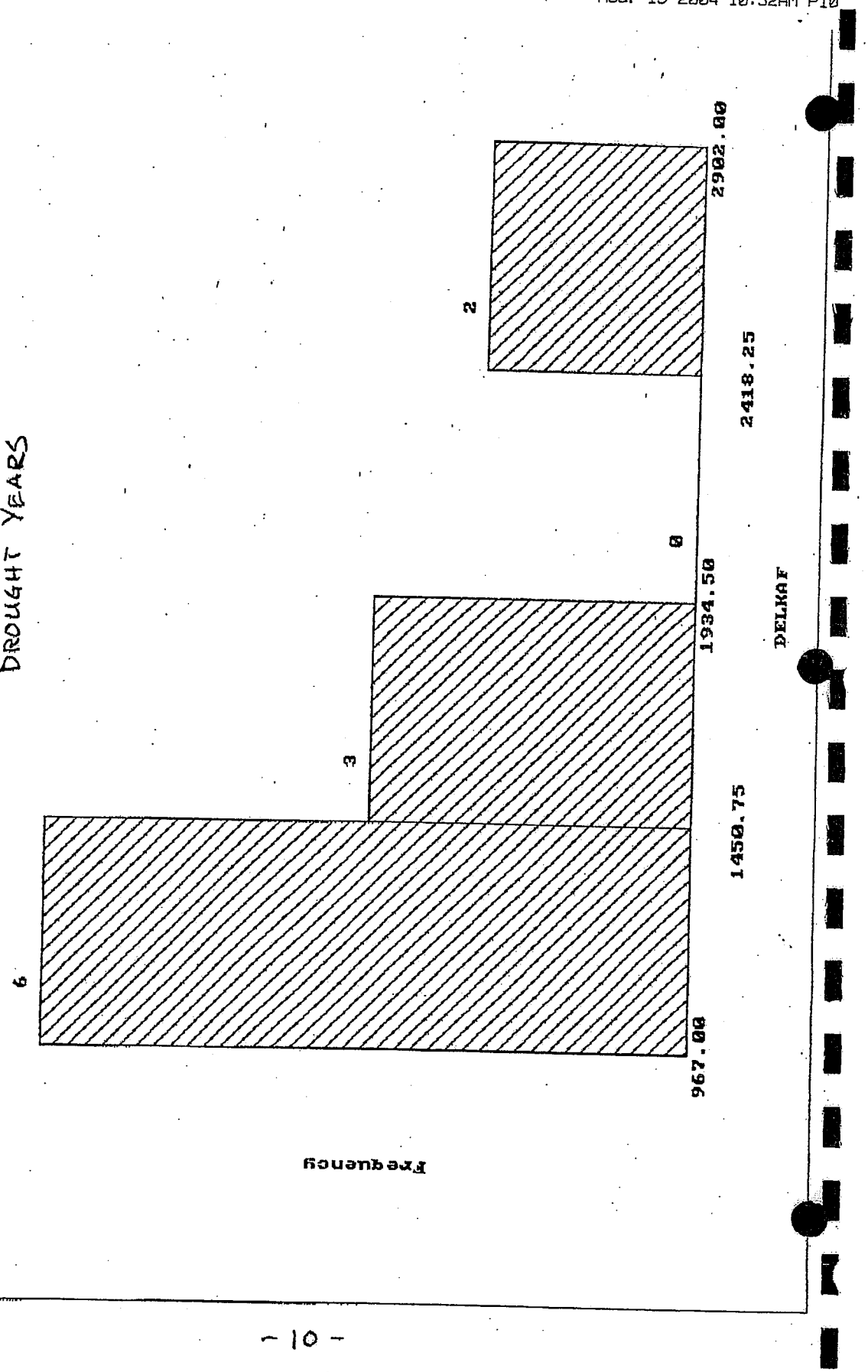
Measures		Confidence Interval (95%)	
Mean	: 1545.364	Lower	: 1089.903
Std Error	: 204.426	Upper	: 2000.825

Figure 2

HISTOGRAM

SWP RELIABILITY ANALYSIS, CALSIM RESULTS

DROUGHT YEARS



SWP RELIABILITY ANALYSIS, NORMAL_WET YEARS

OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS	W
1922	3407	3389	175		1
1923	3717	3727	143		1
1926	3777	2951	0		1
1927	3543	3504	220		1
1928	3897	3337	155		1
1930	3922	2697	92		1
1935	3697	3439	81		1
1936	3769	3638	0		1
1937	3451	3297	87		1
1938	3418	3438	470		1
1939	3673	3475	227		1
1940	3713	3544	102		1
1941	3013	3036	100		1
1942	3583	3599	513		1
1943	3632	3545	447		1
1944	3563	3449	0		1
1945	3612	3479	136		1
1946	3710	3724	3		1
1947	3954	2652	0		1
1948	3959	2681	2		1
1949	3864	2568	2		1
1950	3812	2909	0		1
1951	3779	3794	311		1
1952	3078	3108	103		1
1953	3790	3801	272		1
1954	3833	3803	98		1
1956	3639	3649	261		1
1957	3759	3331	96		1
1958	3481	3492	441		1
1959	4055	3506	265		1
1961	4115	2873	0		1
1962	3689	3158	21		1
1963	3634	3630	223		1
1964	3907	3262	5		1
1965	3586	3256	98		1
1966	3722	3731	147		1
1967	3439	3424	497		1
1968	3792	3548	402		1
1969	3157	3151	100		1
1970	3714	3727	406		1
1971	3837	3845	0		1
1972	4012	3057	2		1
1973	3611	3592	261		1
1974	3649	3664	287		1
1975	3720	3737	415		1
1976	4014	3150	110		1
1978	3126	3036	100		1
1979	3527	3509	140		1
1980	3197	3208	100		1
1981	3834	3532	124		1
1982	3451	3471	386		1
1983	3007	3036	200		1
1984	3692	3706	408		1
1985	3753	3540	0		1
1986	3345	3023	51		1

SWP RELIABILITY ANALYSIS, NORMAL_WET YEARS (Cont.)

	OBSERVATION	MODEL_DEM	CALSIM_DE	ART_21	*KEYWORDS	W
56	1987	3904	2894	0		1
57	1993	3559	3505	133		1
58	1994	3739	3272	9		1
59	*VARIABLES	DEM	DELKAF	ARTKAF	*KEYWORDS	*
60						
61	*KEYWORDS					

ANAYSIS, NORMAL-WET YEARS

Data Set: SWP_REL2.cst
Date & Time: 01-04-80 09:21 am

UNIVARIATE DATA ANALYSIS : (DELKAF)

Data Description		Descriptive Measures	
# of observations	: 58	Mean	: 3363.776
# of missing values	: 1	Std Dev(Sample)	: 324.661
Maximum	: 3845.000	RMS(Population)	: 321.850
Minimum	: 2568.000	Median	: 3460.000
Range	: 1277.000	1st Quartile	: 3139.500
		3rd Quartile	: 3606.750
		Skewness	: -0.659

Inferential Values

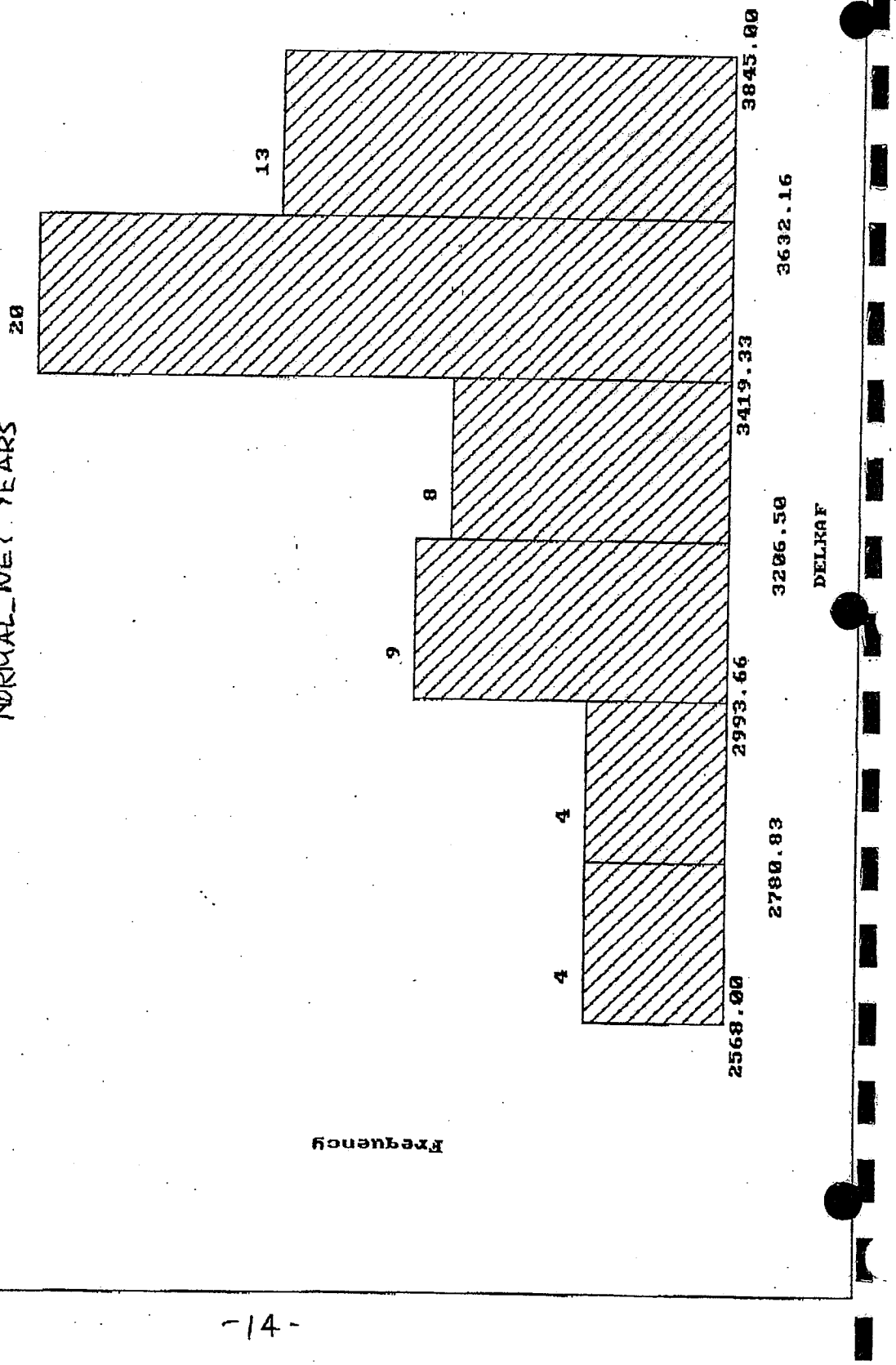
Measures		Confidence Interval (95%)	
Mean	: 3363.776	Lower	: 3278.516
Std Error	: 42.630	Upper	: 3449.036

FIGURE 3

H I S T O G R A M

SWP RELIABILITY ANALYSIS, CALSIM RELULTS

NORMAL_WET YEARS



Further analyses were undertaken treating the two domains as independent populations. Because the dry year set comprises both the dry sequences of drought and several individual dry years sprinkled throughout the record, we have focused the dry year analyses on the drought periods. The two periods are combined into one population for analysis since their means and variances are reasonably consistent. However, we did exclude the beginning year, 1987, for the second period as it was not embedded in the sequence and could easily be classified as a fair to good year. Thus, we ended with a sample of 11 years, 6 years between 1929 and 1934 and 5 years between 1988 and 1992. The data set is shown in Table 3 and the resulting statistics are shown in Table 4.

Table 4 shows an average delivery of 1545 taf and a standard deviation of 678 taf. If the year 1987 were included the average would increase to approximately 1657 taf with not much change in the standard deviation. If the two embedded decent years, 1930 and 1989, are eliminated from the sample the average is decreased to 1267 taf with a standard deviation of 302 taf. These changes suggest that judged as separate occurrences these two years may not be statistically representative of the dry population. However, we will assume that the results shown in Table 4 are representative of the expectation for drought periods.

Lastly, we analyze the population for the normal/wet periods, a record of 58 years, not all in sequence. The years 1930 and 1987 were included in this sample and the individual dry years not part of either of the extended drought periods were excluded. Table 5 presents the data set used in the analysis and Table 6 shows the calculated statistics. Figure 2 shows the frequency histogram for this data set which clearly depicts a central maximum but still with some skewness. (Skewness is a term used to identify distributions that are not symmetric, that is distributions whose sample mean and median are significantly different.) Table 6 shows an average delivery of 3364 taf with a standard deviation of 325 taf. This then represents what is typical of periods of non-drought, an average that is about 81% of the full Table A value of delivery. The standard deviation represents 9.66% of the average delivery, showing a very consistent delivery for normal and wet periods.

How much delivery can we rely on?

As we stated before, what each contractor can rely on depends on the circumstances of his other sources of supply. However, we now have some valid statistical analyses upon which to base the level of delivery that can be relied on for specific circumstances.

First, we note that for any contractor without significant storage availability, the reliable level of delivery is dictated almost solely by drought conditions. If a particular contractor had no other supply to tap and wanted to pick a confident level of supply from the SWP, he would have to select from among the lowest individual years on record which could be as low as 804 taf, or 19.5% of the full Table A value. However, we assume that most SWP contractors have other sources available with which to operate conjunctively with SWP deliveries and the appropriate level of delivery would be the average value during a drought episode, approximately 38% of the full Table A value. If the average level is to be relied on, the other sources must make up the variation within the drought period. In other words, SWP deliveries would have to be taken at the

available level shown in the CALSIM II output and the other sources of supply available to the contractor would have to made dependent on the SWP deliveries. This might cause a rearrangement of priorities of when all the other local sources are brought in to play in a given year. Ordinarily, local purveyors operate on a least cost basis meaning that sources are used in the order of increasing marginal cost. Since SWP marginal costs are likely in some instances to be greater than some local sources, the requirement to use SWP as available may require it to supersede the priority of some local sources in order that the notion of a reliable average delivery is indeed fact. This switch in priorities would entail some cost increases depending on the differences in marginal costs.

If a contractor has significant storage available, he may be able to store some wet year deliveries to be held in reserve for drought periods thereby increasing his reliance on SWP during droughts. The normal/wet period deliveries at an average of 81% could be relied on with high confidence (95%) at the average minus 1.6 times the standard deviation. This 95% confidence level would then be 69% of the full Table A value. In other words, such a contractor could state with high confidence that in normal or wet periods he can rely on 69% of full Table A deliveries with the strong likelihood that in many years he could receive more if it can be utilized. Whether or not it can be utilized depends again on his willingness to reorder the priorities of use of all his sources with the expectation that such a reordering will increase overall costs of supply slightly.

Even if a highly confident 69% can be relied on for normal and wet periods, that leaves the question of what to do in drought periods. Clearly, there will be sufficient excess delivery from all the years greater than 69% that can be stored for drought use, but the level depends critically on the magnitude of storage. If it was desired to bring the drought level of SWP use up to the normal/wet year reliable level, 69%, enough storage would have to provided to make up the 31% of the Table A value represented by the difference between the drought period average and the 69% level. Thus, 31% per year for 6 years (the worst drought on record) of the contractor's Table A value would have to be kept in storage. This amounts to 1.86 times the contractor's Table A amount and there would have to be some allowance for storage losses, such that 2.5 times would be reasonable. Thus, for such a contractor to rely on 69% deliveries from the SWP through wet and dry periods, he would have to have available in magnitude 2.5 times or so his Table A amount dedicated to SWP storage. For the entire SWP contract in the aggregate, this amounts to 2.5 times 4130 taf or approximately 10 million acre-feet. This would have to be storage south of the Delta since the CALSIM already takes maximum advantage of the pumping capability of the project.

Clearly, the right level of reliance on SWP deliveries depends on the circumstances for each contractor. Because it is highly unlikely that the storage requirement to reach 69% can be achieved for many contractors, especially the larger ones, a level lower than 69% will have to be calculated. Each contractor will have to do so independently.

Some Conclusions

We have shown that the values for SWP delivery reliability presented in DWR's report are not statistically valid. The level of 76%, which represents the average calculated by CALSIM over the 73 year record, cannot be assumed without question by

any contractor and it is highly unlikely that such a level can be substantiated by any contractor. The DWR report does acknowledge that during the two 6 year drought periods, a level of only 39% to 40% can be relied on. However, that is the average for a six year drought period and still requires each contractor to analyze how he will adjust his priorities of use among all his sources. Even levels in wet years may stretch an individual contractor's capabilities given that there are capacity constraints in the aqueducts that prevent taking full deliveries in low demand months without significant means for equalizing storage between low and high demand periods. In all of this it is important to recognize that seizing on an "average" value implies that deliveries will follow the project's capability to pump the amounts calculated in the CALSIM II model. This means that in wet years the water must be taken and either used or stored if the average is to have any meaning. The DWR report is not candid on this aspect.

AUG-13-2004 04:36P FROM:HOME

The Swans

P. O. Box 1689
17409 Lockwood Valley Road
Frazier Park, CA 93225-1689
(661) 245-1011 or (818) 523-1461-Mobile
(661) 245-4119-Fax swan4us@home-ink.com

August 13, 2004

Castaic Lake Water Agency
Attn. Marylou Cotton
27234 Bouquet Canyon Rd.
Saugus, CA 91350

RE: 41,000 Acre Foot Transfer SCH# 1998041127

Dear Ms. Cotton,

It has come to our attention the Castaic Lake Water Agency is possibly planning to affect a position on the above captioned matter which, in our opinion, will gravely impact the Monterey Agreement EIR process. 99

We also wish to comment that we see a direct conflict of interest and possible injustice to the public and interference with the CEQA process by your agency's spearheading any effort to circumvent, delay, interfere, or otherwise impede the more appropriate participation of the Department of Water Resources, the agency we believe entitled to administrate on behalf of the general public of the State of California in this matter.

We, the below listed voters and community members raise our voices in writing in complete objection to any and all interference by the Castaic Lake Water Agency and formally request the immediate withdrawal of any and all past, present or future water transfer documents until the EIR is complete. Furthermore, we wish to be added to the list of mailings for any matters regarding this subject.

Thanking you in advance for acknowledging our request, we remain,

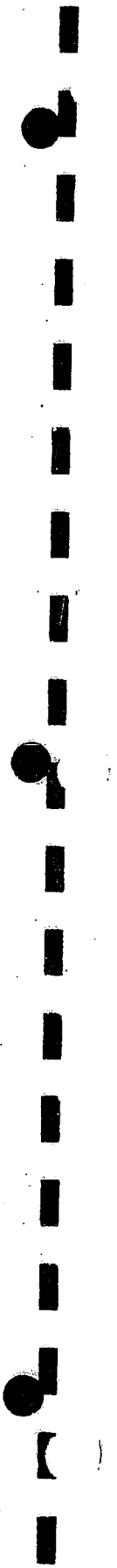
Sincerely,

Arnold D. Swan (etal)

Mr. & Mrs. Arnold D. Swan
Mr. & Mrs. Darrel Wildman
Mrs. Suzanne Spahn

(signed on behalf of parties listed)

Cc: TriCounty Watchdogs
P. O. Box 2458, Frazier Park, CA 93225-2458



Tangerine Man, LLC
POB 426
Ojai, CA 93024

Aug 14th, 2004

Attn: Marylou Cotton

Castaic Lake Water Agency
27234 Bouquet Canyon Rd.
Saugus, Ca 91350
Fax 661 297-1611

Re: 41,000 AF Transfer of water from farmland to Santa Clarita, Northern LA County for urban expansion SCH#19908041127

Dear Ms Cotton:

Water transfers are a statewide issue that induce growth and reduce water for farming. Therefore I believe that your agency is the wrong lead agency for this project; I believe the correct lead agency is the Department of Water Resources, which is both indicated and qualified under state law to address statewide impacts. DWR will also notify all interested parties to the extent of their knowledge. 100

If such a major transfer is allowed to proceed under the lead agency status of a small regional water agency, it will set a precedent that will affect many major water decisions throughout the state of California. I believe it is imperative that such a major change in state policy receive full environmental review and comments from all affected parties. I therefore request that this project be re-noticed by the Dept. of Water Resources acting as lead agency as a project of statewide concern so that all impacts may be disclosed and properly addressed.

Sincerely,

Jim Churchill, Owner

10,300

Stephan C. Volker
Joshua A.H. Harris

Law Offices of
STEPHAN C. VOLKER
436 14th Street, Suite 1300
Oakland, California 94612
TEL: 510/496-0600 ◆ FAX: 510/496-1366
e-mail: svolker@volkerlaw.com

August 16, 2004

Via Facsimile & Mail

(661)297-1611

Castaic Lake Water Agency
Attention: Marylou Cotton
27234 Bouquet Canyon Road
Saugus, CA 91350

Re: Comment on Draft EIR for 41,000 acre-foot water transfer (State Clearinghouse #1998041127)

Dear Ms. Cotton:

On behalf of California Water Impact Network and Friends of the Santa Clara River, we wish to incorporate by reference the comments submitted on the above DEIR by the Sierra Club. We wish to emphasize, in particular, that Castaic Lake Water Agency is not the correct "lead agency" for this project under the California Environmental Quality Act. As the Third District Court of Appeal made clear in *Planning and Conservation League v. Department of Water Resources*, 83 Cal.App.4th 892, 920 (2000), "DWR, with its expertise on the statewide impacts of water transfers," is the proper lead agency under CEQA for decisions regarding transfers of State Water Project water between SWP water contractors. 101

We also wish to incorporate by reference our Opening Trial Memorandum (filed August 21, 2003) and Reply Trial Brief (filed May 3, 2004) in the matter *California Water Network and Friends of the Santa Clara River v. Castaic Lake Water Agency*, Ventura Superior Court No. 215327. These memoranda point out the importance of recognizing DWR's lead agency status regarding transfers of State Water Project water.

Thank you for considering our comments on this important matter.

Very truly yours,

Stephan C. Volker
Attorney for California Water Impact Network and Friends of the Santa Clara River

SCV:taf

Castaic Lake Water Agency Meeting,)
July 28th, 2004. ")
)

Meeting of Castaic Lake Water Agency, Public Comment Section, at 27234 Bouquet Canyon Road, Santa Clarita, California, Public Comment Section commencing at 7:12 p.m., Wednesday, July 28, 2004, before Lisa DiGiovanni, RPR, Certified Shorthand Reporter No. 11969.

INDEX

ATTACHMENTS FOR IDENTIFICATION

1	2-page Letter to Marylou Cotton from Dana Wisehart from United Water Conservation District dated July 26, 2004
2	1-page Letter to Dan Masnada from Ray Pearl and Terra Donion from BIA dated July 28, 2004

SANTA CLARITA, CALIFORNIA

WEDNESDAY, JULY 28, 2004; 7:12 P.M.

MR. KAVOUNAS: Next item on our agenda is Item 3.1, a public hearing of the draft EIR for the Agency's supplemental water transfer of 41,000 acre-feet of State Water Project Table A amount.

The purpose of this hearing is to give the public an additional opportunity to comment on this project and its environmental impacts for consideration by the board. As you will be advised by the staff and the presentation before the hearing, there will be further board proceedings on this draft EIR in the future.

The primary purpose of tonight's hearing is to give the public time to make comments on the draft EIR. The board and staff are not required to ask questions nor make comments or responses to the public's comments.

There will be time for the board's questions, comments and responses in future proceedings. The staff will prepare written responses to comments for the board's review and approval after the comment period ends. I will now turn the item over to Marylou Cotton, the Agency's

water resources manager.

Marylou.

MS. COTTON: Good evening, everyone. Thanks for coming. We have a team of people that are going to be making the presentations tonight on the EIR and setting up the public hearing process. We'll be having our general counsel, Russ Behrens, as one of the speakers. From SAIC, which is the Agency's environmental consultant, we'll have Rob Thomson, who is program manager for the EIR and Lorraine Woodman who's the EIR project manager, and Lorraine will be doing the bulk of the speaking tonight and then there will be me. I have a couple items to cover.

But next I'll turn it over to Russ.

MR. BEHRENS: Thank you, Marylou. I'm just going to give you a little background. As you recall, the previous EIR on the 41,000 acre-foot transfer was certified in 1999. And because that EIR mentioned and related to the Monterey EIR, the court held that because the PCL decision required the Monterey EIR to be decertified, the appellate court on our case held that since we were deemed to have tiered off that EIR, we had to decertify our EIR as well, even though the court stated in some

dictum in the case that and all other respects our EIR was appropriate.

Then after we finished that process on remand, there was a request by the plaintiffs in the case to enjoin us from utilizing in any way the 41,000 acre-foot transfer contracts. And the court, Judge Yaffie, refused to enjoin our use of the 41,000 contracts, but reserved jurisdiction to determine whether or not in the future we were using the 41,000 acre-foot contracts for any improper purpose.

No action was ever filed in front of Judge Yaffie in that regard, but the plaintiffs filed an appeal of Judge Yaffie's order on remand, and it went up to the appellate court and, again, the appellate court refused to enjoin the use by the Agency of the 41,000 acre-foot transfer. And this was further confirmed recently in the Network Groundwater Storage Project because one of the ways we do use our 41,000 acre-foot contract is we get an allocation of water from the State Water Project, which if we don't need, we have the opportunity to store in outside basins outside the agency such as the semitropic.

That case was challenged by Network and

recently the Superior Court of Ventura County refused to enjoin that project and held that it was properly processed with a negative declaration.

So we are now in the process of completing our current EIR. It's being prepared in accordance with all the requirements of law and the court judgments.

I'll now turn it over to Lorraine -- or to Rob to talk about how we process this EIR.

MR. THOMSON: Good evening. This is just a very quick reminder of the CEQA process, where we've been and where we are and where we're going.

Starting up here in the upper left, we -- this agency, following the decertification order, developed a new project description following the directives of the court and developed a new project, published a notice of preparation and a new initial study, and did that in January of 2003, held the 30-day requisite comment period, received comments. Both the NOP and those comments are in Appendix A of the document in total.

Those provided us the scope of the document and provided us with some direction towards the approach. From that we prepared the technical analyses and the administrative drafts of this

document, very complex with multiple iterations and baselines and so on.

After extensive review and analysis, we have now in front of you the draft EIR, and that comment period opened on June 17th. Because of the complexity of this document, the agency determined that it should have a 60-day review period rather than the statutorily mandated 45 days. Comment period will close on August 16th.

From there we'll take the comments that are received and provide responses and develop a final, which then your board will consider, and should you find it to be adequate and certify it and move forward.

With that, I think we go to Lorraine to do a quick review of the EIR itself.

MS. WOODMAN: Good evening.

MR. KAVOUNAS: Good evening.

MS. WOODMAN: The purpose of the project evaluated in this EIR is to meet the existing water demand in the CLWA service area and a portion of future water demand from anticipated growth. This would be accomplished by transferring an existing 41,000 acre-feet of State Water Project Table A amount to CLWA.

The term Table A amount refers to the annual maximum amount of water the State Water Project contractor can request. The Table A amount would be transferred to CLWA from the Kern County Water Agency and its member unit, the Wheeler Ridge-Maricopa Water Storage District.

Project water would be delivered to CLWA through existing State Water Project facilities located between the southern delta and Castaic Lake. No new construction would be required as a result of this project.

This EIR is being prepared by CLWA, which as the lead agency will evaluate and, if appropriate, exercise its discretion to certify the EIR, make findings, and approve the project.

CLWA has assumed the role of lead agency for a number of reasons: The water would be used by CLWA in its service area; it is the major project proponent; it is leading State Water Project water supply contract amendment efforts; it has the expertise to implement the project; and the project impacts only involve a limited geographic area, not the entire state.

Three responsible agencies have been identified. These are agencies other than the lead

agency that have the responsibility for carrying out or approving a project.

The responsible agencies for this EIR are the Department of Water Resources, because State Water Project water and facilities are involved, and the Kern County Water Agency and the Wheeler Ridge-Maricopa Water Storage District, because their Table A amount would be transferred to CLWA.

In compliance with CEQA requirements, these agencies have been active participants in preparing the EIR, and they will use the EIR in making decisions on this project.

This EIR is related to several other EIRs. As Russ noted, this project previously was evaluated in the supplemental water project EIR, which was certified in 1999 and decertified in 2002.

The 1999 EIR tiered from the Monterey Amendment Program EIR which also was decertified. Because the Monterey Amendment is once more undergoing environmental review, the present EIR considers impacts both with and without the Monterey Amendment in place.

The project also is evaluated programmatically in CLWA's capital program and water plan EIR.

The description of the environmental setting is usually based on conditions that are present at the time that the notice of preparation is issued. This project, however, was the subject of an earlier EIR and the transfer already has been implemented.

In order to capture any changes that could have resulted from the transfer, this EIR considers both the conditions that were present at the time that the original notice of preparation was issued, around 1998, as well as current conditions.

Information is provided for all three geographic areas evaluated in this EIR, including those associated with State Water Project facilities and the Wheeler Ridge and CLWA service areas.

No significant direct impacts were identified in the EIR. It was determined that the project would remove an obstacle to growth and that significant, indirect, growth-related impacts on all resources could occur in the CLWA service area.

Most of these impacts would be mitigable to less than significant, although impacts to aesthetics, air quality, biology, transportation, and solid waste disposal may be unavoidable.

This EIR looks at the cumulative impacts of

this project when added to other closely related projects in all three geographic areas. No significant cumulative impacts were associated with the State Water Project or the Wheeler Ridge service area.

Cumulative impacts in the CLWA service area were the same as the growth-related impacts since they would result from the same types of land development.

This EIR considers a variety of alternatives to the project, including: No project, increasing groundwater extractions, exchanging desalinated water for State Water Project water, transferring a smaller Table A amount, and transferring a larger Table A amount.

With the exception of transferring a smaller Table A amount, all of the alternatives would have greater direct impact than the proposed project. Transferring a smaller Table A amount would lessen the project's growth-related impacts, but would not meet the project objective related to augmenting CLWA's water supply to meet existing demand and a portion of future demand.

Thus, the proposed project is identified as the environmentally superior alternative.

Several areas of controversy have been identified. As mentioned earlier, the Monterey Amendment EIR is being revised. Because of the uncertainty surrounding this action, the present EIR evaluates impacts both with and without the Monterey Amendment in place.

Additionally, the potential for growth inducement from increased water supply is an area of known controversy, as is the amount of groundwater available to the Santa Clarita Valley.

I'm going to turn to back to Marylou Cotton.

MS. COTTON: As Lorraine mentioned and Rob mentioned, this is a extremely complex EIR, and has a couple of special features that we don't commonly find in other EIRs.

There are two additional appendices in the EIR. Appendix C is a study that was done by Northwest Economic Associates on the agricultural resources in the Wheeler Ridge-Maricopa Water Storage District service area. It explains the economic rationale for why certain member units of the Kern County Water Agency wish to sell part of their SWP Table A amounts in the first place, the reasons they wanted to do that. It discusses how

they came to that conclusion and any impacts that might be caused by that.

Appendix D is something I'll just say that we are rather proud up of. It's a technical data for hydrologic analysis appendix. It was done by a person named Nancy Clemm, who is a professional engineer. Very well known in the State Water Project family. It is a very complex analysis, as Lorraine mentioned, with and without the terms of the Monterey Amendment of the reliability of CLWAs (inaudible) supplies, the project in general and Wheeler Ridge's -- impacts of Wheeler Ridge's supplies. That appendix is something that is the underpain for some of the conclusions that are present in the EIR.

MR. BEHRENS: As you know, the public comment period ends August 16th. It opened on June 17th. We're going to be receiving these comments tonight. We have a court reporter here that's taking all these comments down that we receive. And the staff will then consider the responses to those comments and report to the board at a later time after the comment period ends, so we can collect not only the comments we received tonight, but those in writing that we receive prior to August 16th.

That report will then be put together, the comments analyzed, and responses to the comments formulated, a matrix prepared for you to review with the staff in a presentation at a future board meeting. We anticipate that the process will be completed, according to the staff's schedule anyway, in November and then for final consideration for certification in December.

That concludes our presentation, Mr. Chairman. And it would be appropriate at this time now to open up the public hearing.

MR. KAVOUNAS: Very well, Mr. Behrens. Thank you. And thank you to all the staff that worked to to prepare this presentation.

I now open the public hearing. I have cards from three speakers that wish to address the agency and the board. If anybody else would like to address the agency, please feel free to fill out a public comment card that is located on the table by the door.

I'd like to call a Ms. Lynne Plambeck.

MS. PLAMBECK: Hi. I'm here speaking as an individual citizen tonight. I'd just like to express my concern that this EIR is proceeding without completion of the Monterey Agreement. I

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think the court was fairly concise about the need for the programmatic EIR in both legal decisions, and they were also very -- very concerned about the lead agency, and Castaic Lake Water Agency is not the right lead agency. It was my understanding prior to this that the two EIRs were moving forward in tandem and they would be completed simultaneously.

And I just think that -- that the folks up north that challenged the EIR will probably continue to challenge the EIR and that they're going to be very concerned that this is proceeding in a manner that's not consistent with an appellate court decision that they won, and that means that even though you know that's there and you're going ahead and doing this anyway, and it sort of seems like a waste of taxpayer's money since there's already a published appellate court decision on it.

And so I would just ask you to keep that in mind and that it might be the better part of valor to move the two EIRs forward in tandem as I understood had been originally planned. Thank you.

MR. KAVOUNAS: Thank you, Ms. Flambeck.

Mr. Vince Bertoni for the City of Santa Clarita.

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105

MR. BERTONI: Thank you. Vince Bertoni, interim director of planning and building services for the City of Santa Clarita here on behalf of the City of Santa Clarita.

First, I'd like to thank the board for providing us this opportunity to comment on the project, on the EIR. You have extended the public comment period beyond the normal 45 days to 60 days. You have also held the public hearing during your comment period, which is not required under CEQA, so you've gone above what's the minimum under CEQA and the City appreciates that and also appreciates being provided with all the documentation very quickly and promptly throughout the whole process. So first off, we'd like to thank you for that. 106

Second off, I noticed that by sharing on EIR for water transfer, it's not really the water transfer itself. In regards to the water transfer, I would just say that as we reviewed the EIR it appears that this EIR was prepared for water transfer that would allow to you a few things. One of them would be to provide more reliability in the existing water supply. The other would be to allow for growth that's already been anticipated under existing general plans for both of the City of Santa 107

Clarita and the County of Los Angeles.

So to that extent, the City is supportive of that. The City has always been supportive of additional water reliability and also to make sure that as we plan for our future growth, we will have water supplied for that.

This city has a couple very high-profile projects that it is very important to the City and the point being the City to have adequate water supply for that.

As you know, we're very -- a housing rich city. We are trying to balance that out to be as equally jobs rich and so things such as our employments such as the Center Point Business Park to the south of you or the Gate (inaudible) project in Newhall are very important for the City, very important for the City's goals.

So to the extent that this would provide water for that, that's an important City goal. Also, things such as the redevelopment of downtown Newhall and that revitalization would require some additional water. So the supply part of it, the City is supportive of that additional reliability of water supply.

We reviewed the EIR at the City and we

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reviewed it under the -- to see if it adequately addressed the potential environmental impact to the City of Santa Clarita, and our review indicated that it has. So at this time we have no comment on the EIR and would happy to answer any questions. Thank you. 108

MR. KAVOUNAS: Thank you, Mr. Bertoni. Thank you for taking the time.

Dana Wisehart, United Water Conservation District.

MS. WISEHART: Good evening. And as you've mentioned, I am Dana Wisehart, the general manager of the United Water Conservation District. I provided written comments, but if you don't mind, I'd just like to read some excerpts of the comments into the record.

MR. KAVOUNAS: Please.

MS. WISEHART: The United Water Conservation District has reviewed the draft EIR for the purpose -- for the proposed transfer of 41,000 acre-feet of state project water that will come from the Kern County Water Agency's member unit Wheeler Ridge-Maricopa Water Storage District to the Castaic Lake Water Agency. This proposed transfer of State Water Project water is beneficial to the Santa Clara 109

River Watershed and is fully endorsed by United Water. 109

The permanent transfer of 41,000 acre-feet of State Water Project water to the Castaic Lake Water Agency provides a valuable additional source of water for the Santa Clarita Valley. This additional water improves the potential for conjunctive use of water within the valley. This is especially important given the urbanization of this area. Increased surface water supplies should provide water managers throughout the basin more flexibility with respect to the magnitude of additional groundwater pumping needed to meet the escalating M&I demand for water within the basin. 110

As an ongoing general comment to all water purveyors within the Santa Clarita Valley, United Water has a very real interest in the continued health of the Santa Clarita groundwater basin and the flow of the Santa Clara River. United Water represents the collective interests of downstream residents that depend on the flow of the Santa Clara River for recharge to groundwater, surface water diversions, and environmental mandates.

United Water's goal is that the quantity and quality of water associated with the flow of the 111

Santa Clara River into Ventura County not be diminished. The development and implementation of the inter-agency regional monitoring program of groundwater levels, groundwater quality, surface water flows, and surface water quality -- and you know I am talking about the MOU agreement that we all signed with your upstream purveyors -- should provide ongoing data with respect to the relative health of the Santa Clarita and downstream basins as well as surface water.

In the event that surface water flow into Ventura County is diminished in either quantity or quality and can be reasonably linked to overpumping of the aquifer systems and/or surface water discharges to the river within the Santa Clarita Valley, United Water would seek to remedy the problem.

We appreciate the efforts of the Castaic Lake Water Agency to appropriately plan and augment the water supplies of our watershed as represented by this water transfer project.

As I said, my comments do have additional focus on the availability of the -- of the water, but that is covered in your EIR, so I'm not going to read it tonight. Thank you.

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MR. KAVOUNAS: Thank you.

MR. BEHRENS: May the record show that the letter dated the July 26th from United Water Conservation District signed by Dana Wisehart is made part of the record of the proceedings tonight.

MR. KAVOUNAS: Thank you, Mr. Behrens.

MR. BEHRENS: Thank you, Mr. Chairman.

MR. KAVOUNAS: Mr. Ed Dunn.

MR. DUNN: My name is Ed Dunn. For those that don't know me, I was former I was former director of the Newhall County Water District and former director of this agency, and I remember when I was on this agency there was urban water event or plan that was done, and since then there have been various EIRs and I listened to the lady speak on the EIR tonight and she made mention that these transfers would be transported to the Santa Clarita Valley by way of the state aqueduct.

When talking to DWR and asking how that happened, because this agency used to have originally a 23,000 acre-feet per year allocation from the state, that the state DWR would transfer and transport to Castaic Lake for Castaic Lake Water Agency, but DWR also had allocations from many farmers and other water users in the San Joaquin

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Valley. DWR said that those allocations the CLWA had been subsequently purchasing were designed to take turn-outs in the San Joaquin Valley, and those acre-feet were to get off in the San Joaquin Valley.

In other words, they were telling me that the Tehachapi pumping station and the aqueduct, that is I guess mostly owned for use by the Metropolitan Water District, was not designed to transport those farmers' allocations here.

So I have asked when I was on the agency and I have asked as a public comment when I'm not on the agency what contracts do you have with Metropolitan Water District or DWR that says you can transport that water that you are purchasing, those additional purchases here? Doesn't matter if you've banked them up there. Some day you will want to transport them here, and I am told there are no such contracts.

We know now that since the Arizona and those people are cutting off MWD's allocations by way of Colorado River, MWD now has to rely more heavily on the DWR and their allocation in this aqueduct and the capacity in the aqueduct. Many unaware, even in our community, that Castaic Lake Water Agency only has 5,000 acre-foot of storage in

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the Castaic Lake. Many think we've got a real good reservoir here, and we'll really high and dry.

And so with the demand that MWD is going to have on the aqueduct now more so demand 'cause you can't get it from the Colorado River, and with the drought situations, and this agency has no contracts that they can transfer those additional allocations here, and I heard nothing in the words tonight just like it was going to be transferred. Nothing was in the Urban Water management plan. It kind of scares me that we're going to sit here in the drought situation and MWD is going to need their full capacity of Castaic Lake and their full capacity of the state aqueduct, and all this water you purchased you can't bring here.

I would like to see that addressed in the EIRs. I would like to see that addressed in the urban water management plans that you can bring this water here. Thank you.

MR. KAVOUNAS: Thank you, Mr. Dunn.

Next is Mr. Larry Manikin.

MR. MANIKIN: I have bolded my comment, and I still have to put my glasses on.

Thank you for the opportunity to make public comment on tonight's issue concerning the

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transfer and ultimate storage of potentially 41,000 acre-feet of State Water Project water.

First, I am Larry Manikin, and president of the Santa Clarita Valley Chamber of Commerce. Our organization is the largest business association in the region with, as of last week, nearly 1,700 business members. There is no issue more important in the future of this community than the availability of water. Having available water impacts almost every segment of this community business and consumer marketplace. Having water, as all of you know, is about planning. It's about, again, as all of you know, it's about having local agency being aggressive in the way they find and bring new water into the valley, and most importantly, it's about the economic future of the Santa Clarita Valley. 114

My job as president of the Chamber achieved spokesman of the business community is twofold. First, I work with companies from outside of the this market and try to encourage them to locate their company or business here. I am heavily involved in business recruitment.

Second, and probably more importantly, I am actively involved with working with local companies

to assure that they have the right kind of political, economic, and physical infrastructure in place to make it possible for them to grow their respective businesses.

Regional economic analysts have predicted -- and I heard this at a meeting this spring -- they predicted that we will generate some 4,700 new jobs here in the valley this year alone. I suspect we're ahead of that pace already.

In looking at specific projects, one project, Center Point Business Park which is now under construction will generate an estimate -- estimated 8,000 new jobs over the next few years.

Many other such project are either now on the books or have actually started development. There is no issue more important to many of these companies than knowing that one, two or ten years from now they can turn on a water facet and actually have water flow out of it.

The issue you are discussing this evening will provide these companies with some sense of security that water, in fact, can and will be available to them during times of drought.

I highly encourage you to continue to make the necessary decisions that can and will make these

new water resources available to both our existing business community and to those businesses that will soon call us home in the future. Thank you. 114

MR. KAVOUNAS: Thank you, Mr. Manikin.

The last comment card I have is from Mr. Terra Donlon.

MS. DONLON: Good evening. My name is Terra Donlon. I'm the director of government affairs for the building industry association.

On behalf of approximately 400 companies and their representative employees who make up the Greater L.A./Ventura chapter the BIA, thank you for your opportunity to comment this evening.

BIA is pleased to see that CLWA has produced a new EIR for the litigation pending on the transaction which can be resolved. The CLWA transfer of 41,000 acre-feet of water from Kern County in 1999 represented wise water planning at the time for the Santa Clarita Valley. Such planning and water management programs on the part of CLWA ensures that its current users as well as future users will be assured safe and reliable drinking water. 115

BIA would like to commend CLWA and its agency and staff for taking these preemptive actions

and we urge you to support and certify this EIR. 116

MR. KAVOUNAS: Thank you very much, Ms. Donlon.

MR. BEHRENS: Mr. Chairman, we have a letter here dated July 28, 2004 to Mr. Dan Masnada from BIA signed by Terra Donlon and Ray Pearl. I'd like to make this part of the record.

MR. KAVOUNAS: Very good.

MR. BEHRENS: Thank you, Mr. Chairman.

MR. KAVOUNAS: I have no other requests from anyone to speak to the board to comment on this draft EIR. And I see no hands from the audience. At this time I will close the hearing. And I'd like to thank everybody for coming out and giving us their thoughts and opinions on the EIR.

(Hearing concluded at 7:44 p.m.)

ENDANGERED HABITATS LEAGUE
DEDICATED TO ECOSYSTEM PROTECTION AND SUSTAINABLE LAND USE

August 19, 2004

VIA FACSIMILE

Marylou Cotton
Castaic Lake Water Agency
27234 Bouquet Canyon Rd.
Saugus, Ca 91350
Fax 661 297-1611

Re: 41,000 AF Transfer of water from farmland to Santa Clarita (SCH#19908041127)

Dear Ms. Cotton:

Endangered Habitats League is concerned that your agency is the wrong lead agency for this project. Water transfers are a statewide issue that induce growth and reduce water for farming. They should be addressed by an agency that is qualified under state law to address statewide impacts and will notify all interested parties. In this case, this is the Department of Water Resources. 117

The impacts of this transfer are considerable and affect a wide variety of interest, yet sufficient notification has not occurred, for example to our group. 118

If such a major transfer is allowed to proceed under the lead agency status of a small regional water agency, it will set a precedent that will affect many major water decisions throughout the state of California. It is imperative that this major change in state policy receive full environmental review and comments from all affected parties. We therefore request that this project be re-noticed by the Dept. of Water Resources acting as lead agency as a project of statewide concern so that all impacts may be disclosed and properly addressed. 119

Sincerely,

Dan Silver, MD
Executive Director

8424-A SANTA MONICA BLVD., #592, LOS ANGELES, CA 90069-4267 ♦ WWW.EHLEAGUE.ORG ♦ PHONE 213.804.2750 ♦ FAX 323.654.1931

County of Los Angeles Public Library
7400 East Imperial Hwy., P.O. Box 7011, Downey, CA 90241-7011
(562) 940-8461, TELEFAX (562) 803-3032

Library

MARGARET DONNELLAN TODD
COUNTY LIBRARIAN

August 23, 2004

Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Rd
Santa Clarita, CA 91350

NOTICE OF COMPLETION FOR DRAFT ENVIRONMENTAL IMPACT REPORT CASTAIC LAKE WATER AGENCY SUPPLEMENTAL WATER PROJECT TRANSFER

Dear Ms Cotton:

This is in response to the Notice of Completion for the Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer. The County of Los Angeles Public Library has reviewed the document and determined that this project will not have an impact on library services. 120

If you have any questions, or need additional information, please feel free to call Malaisha Hughes at (562) 940-8455.

Sincerely,

Malou Rubio
Head, Staff Services

MR:MH
U:\STAFFSERVICES\DEVELOPER FEE\EIR\Castaic Lake Water Agency.doc

c: David Flint, Assistant Director, Finance and Planning

SOUTHERN CALIFORNIA
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Riverside County: Marion Ashley, Riverside County • Thomas Buckley, Lake Elsinore • Bonnie Flickinger, Moreno Valley • Ron Loveridge, Riverside • Greg Pettis, Cathedral City • Ron Roberts, Temecula

San Bernardino County: Paul Biane, San Bernardino County • Bill Alexander, Rancho Cucamonga • Edward Burgnon, Town of Apple Valley • Lawrence Dale, Barstow • Lee Ann Garcia, Grand Terrace • Susan Longville, San Bernardino • Gary Ovitt, Ontario • Deborah Robertson, Rialto

Ventura County: Judy Mikels, Ventura County • Glen Becerra, Simi Valley • Carl Morehouse, San Buenaventura • Toni Young, Port Hueneme

Orange County Transportation Authority: Charles Smith, Orange County

Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission: Bill Davis, Simi Valley

Printed on Recycled Paper 559.5/20/04

September 3, 2004

Ms. Mary Lou Cotton
Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

RE: **Comments on the Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer – SCAG No. I 20040379**

Dear Ms. Cotton:

Thank you for submitting the **Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

It is recognized that the proposed Project considers the transfer of 41,000 acre feet of State Water Project Table A amount from Kern County Water Agency, and its member district the Wheeler Ridge-Maricopa Water Storage District, to the Castaic Lake Water Agency.

SCAG staff has evaluated the **Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer** for consistency with the Regional Comprehensive Plan and Guide and Regional Transportation Plan. The Draft EIR includes a discussion on the proposed Projects' consistency with SCAG policies and applicable regional plans, which were outlined in our February 19, 2003 letter on the Notice of Preparation (NOP) for this Draft EIR..

The Draft EIR, in Section 5.0, Consistency with Adopted Plans and Policies, cited SCAG policies and addressed the manner in which the proposed Project is consistent with applicable core policies and supportive of applicable ancillary policies. This approach to discussing consistency or support of SCAG policies is commendable and we appreciate your efforts. 121

Based on the information provided in the Draft EIR, we have no further comments. A description of the proposed Project was published in the June 16-30, 2004 Intergovernmental Review Clearinghouse Report for public review and comment.

If you have any questions, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

Section 3 – Responses to Comments

3.0 RESPONSES TO COMMENTS

This section includes excerpted comments from the letters and public meeting transcript included in Section 2 and corresponding responses in tabular format. For ease of cross-referencing, the comments in the table have been numbered sequentially in the left-hand column. The acronyms used to define the commenters are as indicated in Section 2; comments provided during the public meeting on July 28, 2004 are indicated by "PM," and the name of the commenter is shown in parentheses. This section also includes a Master Response, which addresses similar issues raised by a number of commenters.

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Matrix of Comments on DEIR and Responses
CLWA - Supplemental SWP Table A Amount Transfer Project FEIR (41,000 AF)

No.	Commenter	Comment	Response
1	Caltrans	The Project would not involve construction or operational changes that could generate traffic or otherwise affect traffic conditions. Based on the information received, we have no comments at this time. Thank you for the opportunity to have reviewed this project. Any transportation of water which requires the use of oversize-transport vehicles on State highways will require a Caltrans transportation permit. We recommend that large size truck trips be limited to off-peak commute periods. Thank you for the opportunity to have reviewed this project.	This comment is noted; no text revisions are required. The Project does not involve the use of trucks to transport water.
2	DWR	The Department of Water Resources' (DWR) staff have reviewed the Draft Environmental Impact Report (DEIR) for the Castaic Lake Water Agency Supplemental Water Project Transfer of 41,000 Acre-Feet of Table A Amount (SCH No. 1998041127), and found that the document adequately and thoroughly discusses the proposed project and its impacts. The DEIR discusses the effects of the project on the environment and State Water Project (SWP) and uses baseline conditions consistent with those being considered for inclusion in the DEIR. DWR is currently preparing for the Monterey Amendment to the State Water Project Contracts (including Kern Water Bank Transfer and Other Contract Amendments and Associated Actions as Part of a Proposed Settlement Agreement in Planning and Conservation League v. Department of Water Resources (SCH No. 2003011118), referred to hereafter as "Monterey Plus."	This comment is noted; no text revisions are required. DWR, as a responsible agency for the DEIR and as lead agency for the new Monterey Amendment Program EIR, has reviewed the DEIR and has concluded that the DEIR adequately and thoroughly describes the Project and adequately analyzes all Project impacts on the environment and SWP system, using baseline conditions consistent with those DWR intends to use for its Monterey Amendment EIR. DWR's evidence refutes comments by members of the public which speculate that the DEIR will be inconsistent with the new Monterey Amendment Program EIR or that the DEIR fails to consider Project environmental effects which will be considered in the Monterey Amendment EIR.
3	DWR	The DEIR provides a good discussion of the relationship between the 41,000 acre-feet Table A transfer and the current Monterey Plus process. DWR will analyze the effects of all Table A transfers that were part of the Monterey Amendment to the SWP contracts in the Monterey Plus EIR. The proposed CLWA 41,000 acre-feet Table A transfer will be included in this analysis.	This comment is noted; no text revisions are required. DWR, as a responsible agency for the DEIR and as lead agency for the new Monterey Amendment Program EIR, has reviewed the DEIR and has concluded that the DEIR provides a good discussion of the relationship between the Project and the Monterey Amendment.

No.	Commenter	Comment	Response
4	DWR	One of the tools being used by DWR to assess potential impacts associated with these Table A transfers is the CALSIM II model. DWR acknowledges that CLWA used an earlier model, DWRSIM, to analyze the effect of the 41,000 acre-feet transfer; however, DWR will use the next generation model, CALSIM II, to assess potential impacts associated with all Table A transfers in its DEIR for Monterey Plus. The use of CALSIM II may cause slight changes in results, which may lead DWR to different conclusions than the conclusions made by Castaic Lake Water Agency in the current DEIR.	CLWA used DWRSIM model studies to assess potential future impacts of the Project because at the time the supply analyses were begun for the DEIR no CALSIM II studies were publicly available. At that time, the DWRSIM studies used in DEIR analyses were the most comprehensive studies that were publicly available. These studies were conducted by DWR for CALFED in 1998 and had received extensive public and technical review during the CALFED process. Additionally, these studies were consistent with the pre-Project baseline conditions in 1998 when CLWA approved the Project. (See DEIR Section 3.0 at p. 3.0-6, DEIR Section 3.15.2.2 at p. 3.15-31) CLWA's use of the DWRSIM model did not result in significantly different SWP delivery reliability results than would have been obtained using the CALSIM II model. Overall, the SWP delivery reliability results from DWRSIM studies prepared for CALFED were slightly higher than delivery reliability results from the CALSIM II studies that subsequently became available in the DWR SWP Delivery Reliability Report. Therefore, from an environmental impact assessment standpoint, the DEIR analyzed the worst-case scenario; i.e., the scenario that would result in greater direct and indirect impacts in both the CLWA and WRMWSD service areas. (See DEIR Appendix D, Section 2.2 and Figures 2-1 and 2-2 at pp. D-19 to D-21) A comparison of DWRSIM and CALSIM II results of total SWP deliveries shows a somewhat larger difference for the comparison at "existing" demand conditions than at 2020 demand conditions. (See DEIR Appendix D, Section 2.2 and Figures 2-1 and 2-2) The differences between the two model results at existing demand conditions are mainly attributable to the use of a different "existing" demand for each study. Both studies used DWR estimates of Contractor demands that were "existing" or current at the time the studies were conducted, i.e., 1998 for the DWRSIM study and 2001 for the CALSIM II study. The 2001 total SWP demand is higher than the 1998 total

No.	Commenter	Comment	Response
4 (cont)	DWR		SWP demand due to increased M&I Contractor demands. Because the models only make deliveries up to Contractor demands (as opposed to making deliveries up to the Contractors' maximum Table A Amounts), the deliveries shown in the wetter years, when adequate supply is usually available, are limited by demands. Therefore, for current conditions, the DWRSIM study shows lower deliveries than the CALSIM II study in the wetter years, not because supplies are not available, but because the lower Contractor demands used in the DWRSIM study limit deliveries. In addition, the lower demand can also result in more water being delivered in some dry years, if more water was left in storage at the end of the preceding year. The differences between the two model results at 2020 demand conditions are much smaller because both studies use the same demands. Differences in SWP deliveries between these two model studies result from other factors such as changes in assumptions for regulatory standards and operating criteria, and differences in certain algorithms used in the models. It should be noted that CLWA did use CALSIM II model results to estimate SWP water supplies for the current environmental setting. DWR's comment indicates that DWR will also use the CALSIM II model to assess potential impacts associated with Table A Amount transfers in its Monterey Amendment EIR. Thus, CLWA anticipates that the DEIR and the Monterey Amendment EIR will be consistent in their projections of impacts related to the Project. (See DEIR Section 3.15.2.2 at page 3.15-31 and DEIR Appendix D Section 6.1.2.2; See also DEIR Sections 6.3.1.5, 6.3.2.6 & 6.3.3.4)
5	DWR	As final comments, DWR notes that this DEIR adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations.	This comment is noted; no text revisions are required. DWR, as a responsible agency and as lead agency for the Monterey Amendments EIR, has reviewed the DEIR and has concluded that the DEIR adequately discusses SWP operations, SWP reliability, pre- and post-Monterey Amendment conditions, and future conditions as they relate to the Project. DWR's evidence refutes comments from other parties that speculate

No.	Commenter	Comment	Response
5 (cont)	DWR		that the DEIR fails to adequately discuss SWP operations, SWP reliability, pre- and post-Monterey Amendment conditions, and future conditions, and that speculate that such DEIR discussions are contrary to the discussions anticipated for the Monterey Amendment EIR.
6	DWR	Coordination between DWP and CLWA is essential to produce accurate environmental documentation that leads to informed decision-making and full public disclosure as the California Environmental Quality Act mandates. DWR appreciates inclusion and consultation in the early stages of preparation of this DEIR. Please ensure that DWR's Division of Environmental Services and SWP Analysis Office receive copies of the Final EIR.	DWR states that it was included and consulted in the early stages of preparation of the EIR in order to provide accurate environmental documentation leading to full public disclosure and informed decision-making. DWR's evidence refutes comments from other parties that speculate that, without DWR as the lead agency, the DEIR will not have the benefit of DWR statewide authority and expertise. As requested, CLWA will provide to DWR's Division of Environmental Services and to DWR's SWP Analysis Office copies of the FEIR for the Project.
7	CHP	In reviewing this project, our concern was what effect these projects will have on traffic. It is our opinion there should not have a significant impact.	This comment is noted and is consistent with the EIR analysis; no text revisions are required.
8	SWC	This letter provides comments on the Draft EIR entitled "Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount," on behalf of the State Water Contractors ("SWC"). As you know, the SWC represents nearly all contractors that receive water from the State Water Project ("SWP"). Thus, the SWC is vitally interested in the proper application of CEQA to water transfers under Articles 41 and 53 of the SWP water service contracts and, in general, with respect to operations of the SWP. The SWC commends Castaic Lake Water Agency ("Castaic") for going far beyond what is required by CEQA and the appellate court decision that invalidated Castaic's earlier EIR for the 41,000 acre foot water transfer. Both the trial court and the appellate court found that all of the environmental analyses contained in that first EIR complied with CEQA, except for reliance (through "tiering") on the original Monterey Amendment EIR which had later been found inadequate by the Third District Court of Appeal. Nevertheless, Castaic has taken	This comment is noted; no text revisions are required.

No.	Commenter	Comment	Response
8 (cont)	SWC	a comprehensive, fresh look at the transfer's potential impacts in a single document, when arguably a short supplement eliminating the references to the Monterey Amendment would have sufficed. By so doing, you have provided decision makers with a complete picture of the transfer and its impacts so they can make new informed decisions related to the project.	
9	SWC	During scoping, several parties made suggestions that this Supplemental EIR should not move forward until the new EIR for the Monterey Amendment has been completed. The SWC suggests that Castaic should respond more directly to these contentions. Those contentions overlook or intentionally mischaracterize a central element of the Monterey EIR litigation Settlement Agreement. The Settlement Agreement explicitly states that the SWP will operate under the Monterey Amendment while the new EIR is prepared. This includes operation under Article 53, pursuant to which the Kern County Water Agency consented to up to 130,000 acre feet of agriculture to urban transfers. Suggestions that consideration of such transfers must await completion of the new Monterey Plus EIR would render this element of the Settlement Agreement a nullity, contrary to the clear understanding of the signatories to that document.	CLWA concurs with these comments. Please refer to the Master Response, particularly Section V thereof.
10	SWC	Further, nothing in the Settlement Agreement affects the rights of contractors and DWR to agree to and proceed with implementing long-term transfers of Table A Amounts. In this respect, the draft Supplemental EIR contains a confusing statement to the effect that certain terms in the Settlement Agreement constitute a "specific exclusion" of the 41,000 acre foot transfer from "any prohibitions against transfers of Table A amounts by the Settlement Agreement." The Settlement Agreement does not contain any such prohibitory language. Thus, specific exclusions are not necessary. The final Supplemental EIR for the 41,000 acre foot transfer should point out that several other Table A transfers have been consummated since the Settlement Agreement was executed and that the Settlement Agreement contains no language that	The comment correctly points out that the Monterey Amendment Settlement Agreement, approved by the Sacramento County Superior Court, allows the Monterey Amendment to remain in effect until certification of a new Monterey Amendment Program EIR. Monterey Amendment provisions allowing long-term transfers of Table A Amounts remain valid. (See DEIR 1.2.2 and 1.4.2) Thus, the language contained at DEIR Page ES-4, lines 20-31, and at DEIR Page 1-4, lines 13-23, should be deleted and replaced with the following: "The Monterey Amendment Settlement Agreement does not require that the new Monterey Amendment Program EIR be certified before an EIR for this Project can be certified, nor does

No.	Commenter	Comment	Response
10 (cont)	SWC	could be interpreted as prohibiting such transactions or the 41,000 acre foot transfer.	it require that the EIR for this Project tier off the new Monterey Amendment Program EIR. Also, the Monterey Amendment Settlement Agreement does not require that the new Monterey Amendment Program EIR serve as the EIR for this Project. Section III(C)(4) of the Monterey Amendment Settlement Agreement only requires DWR to analyze the potential impacts resulting from this Project and other transfers as they relate to the potential environmental impacts of approving the Monterey Amendment. Section III(E) of the Monterey Amendment Settlement Agreement clarifies that the Section III(C)(4) analysis is limited by remedies or other actions of the Los Angeles County Superior Court in *Friends I*, stating: "With respect to Section III(C)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation in the Los Angeles County Superior Court following remand from the second District Court of Appeal (*See Friends of the Santa Clara River v. Castaic Lake Water Agency 95 Cal.App.4th 1373, 116 Cal.Rptr.2d 54 (2002); review denied, April 17, 2002*). The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." Several transfers have taken place since the Monterey Amendment Settlement Agreement. All of those transfers have been approved pursuant to Article 41 of the State Water Project Contract. Those transfers evidence that it was not the intent of the parties to the Monterey Amendment Settlement Agreement to require certification of the Monterey Amendment EIR before transfers not listed as final in Attachment E to the Settlement Agreement could take place. Among non- Attachment E transfers that have taken place

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10 (cont)	SWC		since the Monterey Amendment Settlement Agreement are the following: • June 2, 2003: Tulare Lake Basin Water Storage District to Alameda County Flood Control and Water Conservation District, Zone 7, 400 acre-feet, effective 2003 • October 24, 2003: Metropolitan Water District of Southern California to Coachella Valley Water District, 88,100 acre-feet, effective 2005 • October 24, 2003: Metropolitan Water District of Southern California to Desert Water Agency, 11,900 acre-feet, effective 2005 • October 31, 2003: Belridge Water Storage District (KCWA) to Alameda County Flood Control and Water Conservation District, Zone 7, 2,219 acre-feet, effective 2004 • December 5, 2003: Tulare Lake Basin Water Storage District to County of Kings, 5,000 acre-feet, effective 2004 • February 23, 2004: Tulare Lake Basin Water Storage District to Coachella Valley Water District, 9,900 acre-feet, effective 2004
11	SWC	The SWC suggests that the final Supplemental EIR reference the July 14, 2004 trial court opinion in *California Water Network v. Castaic Lake Water Agency*, which discusses the proper lead agency for projects similar to the 41,000 acre foot transfer. In that case, the Court held that Castaic was the proper lead agency for a water banking project, stating "Castaic is the agency most deeply involved in the planning, and execution of this project." The trial court rejected the argument that DWR was the only proper lead agency when actions concerning the	This information is included in the Master Response. The comment regarding the knowledge and role of local agencies regarding local land use planning and local water supply issues is noted; local land use plans and their relationship to the Project and local water supply are discussed in the DEIR in sections 4.1 and 4.2.

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11 (cont)	SWC	SWP are involved. As in the *California Network Case*, Castaic is the agency promoting, planning, and primarily carrying out the 41,000 acre foot transfer. It is also the agency with the greatest knowledge about growth inducement and similar local issues. State government, including DWR, has no role in local land use planning and the local water supply issues that arise from planning decisions. The plenary role of local agencies in the land use arena should be pointed out in the final Supplemental EIR.	
12	SWC	The SWC has reviewed the water supply analysis set forth in the draft Supplemental EIR and believes it will provide valuable information for decision makers in determining how the 41,000 acre foot transfer will affect Castaic's ability to meet the future water needs engendered by Los Angeles County's and local cities' land use decisions. The SWC suggests that the final Supplemental EIR re-emphasize that urban water suppliers do not make the land use and growth decisions but instead, try to provide needed water supplies in the most economical and environmentally sound manner. From this standpoint, the draft Supplemental EIR provides the best information reasonably available from recognized scientific sources. More than that can not be asked of lead agencies dealing with highly complex natural and man made water systems.	CLWA concurs with these comments. The DEIR (sections 1.1 and 4.2) notes that CLWA is not a land use agency and does not control where and when growth will occur in its service area.
13	City SC	Thank you for allowing the City of Santa Clarita to comment on the Draft Environmental Impact Report for the Supplemental Water Project Transfer. At this time, the City of Santa Clarita has no comments on the draft document regarding the project.	This comment is noted; no text revisions are required.
14	LA DPR	Page 3.0-10 of the Draft EIR states that the "DWR's operation of these lakes (Quail, Pyramid, and Castaic) generally would not change with the Project, although the project would result in additional water transported through these lakes in about the same months the water is delivered to CLWA." Page 3.15-41 also confirms that "the amount of water stored at Castaic Lake would not be expected to change as a result of the Project." The	This comment is noted; no text revisions are required. As indicated, the Project would not change the operation of Castaic Lake.

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14 (cont)	LA DPR	optimum operating level of Castaic Lake is 1515 above sea level. Scheduling of the release of the SWP water should be done so to maintain this level. Assuming that this operating criterion and the physical conditions of the lake do not change as a result of the project, adverse impacts to Department facilities are not anticipated. The Department requests that any future changes in the operating criteria of the lake be coordinated directly with Mr. Dana Robertson, Parks Superintendent. Contact information is provided below: Mr. Dana Robertson, Parks Superintendent Castaic Lake Recreation Area 32132 Castaic Lake Drive Castaic, CA 91384 Phone (661) 257-4050/Fax (661) 257-3759	
15	LA DPR	Section 3.12.3 of the Draft EIR states that the implementation of the project will have no direct or indirect impacts to recreation within the CLWA. However, the potential development (Page 4-2) for 106, 700 new residents and 35,600 new units to house them may impact future recreation opportunities for those within the CLWA, and in turn, to future Castaic Lake operations.	With respect to impacts to recreation within CLWA, Section 3.12.3.3 of the DEIR states: "No direct significant impacts to recreational resources would occur; therefore no mitigation measures are required. Mitigation measures for indirect impacts are addressed in Chapter 4, Growth-Inducing Effects and Growth-Related Impacts." (A direct impact is a direct physical change in the environment resulting from the Project; an indirect impact is a reasonably foreseeable physical change in the environment resulting from the Project. [See *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 876-877.]) Those mitigation measures are referenced in DEIR Section 4.2.12. DEIR Section 4.2.12 concludes that indirect significant impacts are avoidable with those mitigation measures. Sections 3.12.3.1 and 3.12.3.2 state that no direct or indirect impacts to recreational resources of the SWP or WRMWSD would occur as a result of the Project. Thus, DEIR Section 3.12.4 concludes that there are no unavoidable direct or indirect significant impacts to recreational resources resulting from the Project.

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16	LAFD	LAND DEVELOPMENT UNIT: The County of Los Angeles Fire Department, Land Development Unit appreciates the opportunity to comment on this project. However, this project does not propose structures or any other improvements that appear to have a significant impact that requires a comment from the Land Development Unit. Specific fire and life safety requirements for the construction phase will be addressed at the Building and Fire Safety plan check. There may be additional fire and life safety requirements during this time. Should any questions arise regarding subdivision, water systems or access, please contact Inspector Marvin Dorsey at (323) 890-4243.	This comment is noted; no text revisions are required.
17	LAFD	FORESTRY DIVISION: The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. The areas germane to the statutory responsibilities of the Los Angeles County Fire Department, Forestry Division have been addressed.	This comment is noted; no text revisions are required.
18a	VRMA	None	No comments were submitted.
18b	VPWA	None.	No comments were submitted.
19	SCERC	The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has no comments at this time.	No comments were submitted.
20	BIA	CLWA's transfer of 41,000 acre-feet of water from Kern County in 1999 represented wise water planning for the Santa Clarita Valley. The BIA is pleased to see that the CLWA has produced this new EIR so that the litigation pending on the 1999 transaction can finally be resolved.	This comment is noted; no text revisions are required. Indeed, by augmenting CLWA's supplies, the Project serves to mitigate anticipated water resource shortages for existing land uses and for land uses projected by local general and specific plans.

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20 (cont)	BIA	We are in the midst of a housing shortage in our State, especially in the Los Angeles and Ventura County regions. With housing supply in high demand it is critical for agencies such as CLWA to plan for future infrastructure needs. The continuance of such planning and water management programs is designed to enable the agency to meet its mission of providing water for anticipated growth in the Santa Clarita Valley. We support the Agency board and staffing in continuing that mission. CLWA has taken the proper steps to insure that its current users as well as future users will be assured safe and reliable water. The Building Industry Association would like to commend the CLWA for taking these preemptive actions.	
21	C-WIN	**CLWA is the Wrong Lead Agency and Must Wait for DWR to Complete the new Monterey Plus EIR.** Under the principles articulated by the 3rd District Court of Appeal in the PCLvDWR case (#CO24576), CLWA is not the proper lead agency in this transaction which has tremendous statewide significance as it necessarily must address the Monterey Amendments. DWR is the only proper lead agency.	Please refer to the Master Response.
22	C-WIN	This transfer is not consistent with the PCLvDWR settlement, reached in May of 2003, under which DWR has already commenced its own statewide review of the Monterey Amendments. Until the new EIR, known as "Monterey Plus" is finalized and the project is approved, the only transfers recognized as final are those listed in attachment E of the settlement. This is not one of those transfers and therefore would be illegal until completion and certification of the new "Monterey Plus" EIR. The CLWA proposed EIR is potentially on a collision course with DWR's "Monterey Plus" EIR and could produce a result that is at odds with the court mandated EIR on the Monterey Amendments currently being produced by DWR. C-WIN incorporates the January 10, 2002 letter from attorney Robert H. Clark to then General Manager of CLWA Robert C.	Please refer to the Master Response and to Comments 2, 3, 5, 6, 8, 9 and 10 and the Responses thereto. This Project is consistent with the Monterey Amendment Settlement Agreement. Section II of the Monterey Amendment Settlement Agreement provides that the Monterey Amendment will remain in place during preparation of the new EIR for the Monterey Amendment. Nothing in the Monterey Amendment Settlement Agreement prevents transfers from continuing to occur under the Monterey Amendment while the new Monterey Amendment Program EIR is being prepared. Section III(C)(4) of the Monterey Amendment Settlement Agreement only requires the Monterey Amendment EIR to analyze past, present and future transfers as they relate to the potential environmental effects of the Monterey Amendment. The Monterey Amendment Settlement Agreement's recognition of certain transfers as final and immune from challenge did not state nor imply that other

No.	Commenter	Comment	Response
22 (cont)	C-WIN	Sagehorn where he points out this problem and warns, "Alternatively, CLWA may choose to create an EIR that does not rely in any way on Monterey Amendment provisions, and then complete the 41,000 AF water entitlement transfer outside of Monterey. There are adverse financial implementations to this course of action, and any water transfer outside of Monterey—assuming it might be acceptable to Kern County Water Agency and Wheeler Ridge—*could be made subject to agricultural water deficiency provisions in the same manner that the Devil's Den water entitlement transfer was originally made subject to those agricultural water deficiency provisions" (emphasis added)* (See Attachment A). C-WIN also incorporates a letter from attorney Alyse M. Lazar to DWR Director Lester Snow dated May 18, 2004 and the response from Mr. Snow's office dated June 17, 2004. In the response letter, Mr. Snow says, "DWR's treatment of the transfer of Table A amounts from Kern County Water Agency to Castaic Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph III.C.4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as actions that relate to the potential environmental impacts approving the Monterey Amendments." Section 1(0) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 AF of water from Kern County Water Agency to the Castaic Lake Water Agency, approved by DWR on march 31, 1999." DWR has not completed any draft or final analysis regarding these transfers." (See Attachment B).	transfers are prevented from becoming final. In fact, Section II(E) of the Monterey Amendment Settlement Agreement recognized that this Project is not subject to the jurisdiction of the Sacramento Superior Court in the *PCL* case. Instead, the Monterey Amendment Settlement Agreement acknowledged that environmental review for this Project is subject to the jurisdiction of the Los Angeles Superior Court. Because the May 5, 2003 Monterey Amendment Settlement Agreement provides for the Monterey Amendment to remain in effect, the issue addressed in the prior January 10, 2002 letter of Robert Clark referenced in this comment about the transfer being subject to pre-Monterey Amendment agricultural deficiency provisions is moot. Please also refer to Comment 45 and to the Response thereto. As noted in the Response to Comment 45, CLWA would benefit from the Project under pre-Monterey Amendment agricultural water deficiency provisions. Regarding the letter from Alyse M. Lazar, the fact that the new Monterey Amendment Program EIR will analyze the Project and other past, present and future transfers as they relate to the potential environmental effects of the Monterey Amendment does not necessitate that CLWA await the Monterey Amendment EIR before it can approve the Project. Indeed, the new Monterey Amendment Program EIR could take months to complete, and CLWA is under mandate of the Los Angeles County Superior Court in *Friends of the Santa Clara River v. Castaic Lake Water Agency* ["*Friends I*"], Los Angeles Superior Court Case No. BS 056954, to certify an EIR that complies with CEQA and is consistent with the views expressed in the Court of Appeal opinion in *Friends I* contained at 95 Cal.App.4th 1373.

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23	C-WIN	**The Proposed Transfer is Currently the Subject of Litigation.** The CLWA EIR states that CLWA has 95,200 AF of Table A SWP water. This is not accurate as the 41,000 AF from the sale by KCWA to CLWA under the old Monterey Amendments is the subject of ongoing litigation. Allowing development of new homes based on this challenged and uncertain source of water is not prudent or reasonable. C-WIN is currently a plaintiff in several cases against CLWA opposing proposed transfers that depend on the 41,000 AF transfer mentioned above. Any transfer that is dependent on a water source that is not free and clear is not reliable. C-WIN hereby incorporates our ongoing case against CLWA, the Department of Water Resources (DWR) and Semitropic Water Storage District , Civ No. 215327. Castaic is proposing to transfer 24,000 AF of its 2002 allocation of it's State Water Project (SWP) water, heavily relying on and siting the 41,000 AF transfer as complete to help justify the 24,000 AF transfer, and store it in the Semitropic Water Bank. This case is currently going to appeal.	The DEIR correctly states that the current CLWA Table A Amount is 95,200 AF. The judgment of the trial court on remand from the Court of Appeal in *Friends I* did not invalidate the 41,000 AF Project that is the subject of this DEIR. The trial court in that case did not enjoin any part of this Project. According to the trial court, "Respondent will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper." In a subsequent appeal of the trial court's judgment on remand, in an unpublished opinion, the Court of Appeal affirmed that judgment. The comment states that the Project allows for the development of new homes. However, the Project does not constitute an approval for the development of new homes. As noted in DEIR Section 1.1, CLWA is not a land use agency that can approve new homes or other new development. That section appropriately cautions any land use agencies intending to rely on the Project for a water supply for development projects that "past water deliveries are not a guarantee of future water delivery rates." The delivery projections and reliability models mentioned in the DEIR are used to identify environmental impacts of this Project, not as environmental review for new development. The DEIR analyzes the indirect environmental effects of the Project—those impacts that could arise from future development using the water provided by the Project. The comment mentions the case of *California Water Network and Friends of the Santa Clara River v. Castaic Lake Water Agency* ["*Network*"], Ventura Superior Court No. 215327, wherein the Court refused to invalidate a water storage project. That 24,000 acre-foot storage project was a 10-year banking of water to firm up CLWA's water supply for existing uses, and was defined as not providing water to accommodate new development. (See DEIR Section 6.3.3.1) The trial court in *Network* upheld

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23 (cont)	C-WIN		CLWA's environmental review for the water banking project, and, as the comment indicates, the case is now on appeal. Nothing in the *Friends I* trial court judgment on remand or *Friends I* Court of Appeal opinion prevented the storage project addressed in *Network* from using a portion of the 41,000 acre-feet available in Year 2002.
24	C-WIN	As the EIR states, under current law, urban water suppliers must maintain updated water management plans (Urban Water Management Plans). CLWA's UWMP is currently being challenged in court for claiming to have more water than is actually available.	The Court of Appeal in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2004), 123 Cal.App.4th 1, ["*Friends II*"] ordered the trial court to vacate CLWA's approval of its UWMP based upon the Court's determination that the UWMP must address the timing for remediation of perchlorate contamination found in a limited portion of the groundwater basin. CLWA intends to adopt an amended or updated UWMP that fully discusses issues raised by the Court of Appeal. The invalidation of the UWMP does not constitute a new substantial environmental impact or an increase in the severity of an environmental impact for the Project. The DEIR does not tier off or rely on the UWMP for any information, including information regarding estimates of water supply, water use, water demand, or water supply reliability. As stated in DEIR Section 5.6, "Although information in the UWMP was considered in the analysis for the Project, an independent analysis and determination of environmental impacts was carried out for the Project." This Project is not a development project that would rely on the UWMP in the CEQA process. The "paper water" issue in *PCL* referred to misleading local land use planners as to how much water can be relied upon to serve the long-term needs of a development project. This DEIR does not use UWMP projections to determine the amount and reliability of this Project. DEIR Section 1.1 cautions any land use agencies intending to rely on the Project for a water supply for development projects that "past water deliveries are not a guarantee of future water delivery rates." The delivery

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24 (cont)	C-WIN		projections and reliability models mentioned in the DEIR are used to identify environmental impacts of this Project, not as environmental review for new development.
25	C-WIN	Public comments submitted on the recently finalized DWR "SWP Delivery Reliability Report" underscore the continuing problem that contractor estimates of reliability have frequently promised more water than is actually obtainable for building purposes. This EIR is representative of the "paper water" critically described in the 3rd District Appeal Court decision mentioned above. **Water Reliability as Stated in the Proposed EIR is Not Accurate.** This EIR, along with many other proposed developments in California, is dependent on the analysis by DWR and it's State Water Project Delivery Reliability Report, Final 2002, to give planners and the public accurate information on SWP water reliability. These numbers are critical because planners and the public count on them when considering water availability to meet future demand. This Reliability Report has been seriously criticized for overstating actual available supply, questionable modeling and simulations, and lack of proper peer review. C-WIN hereby incorporated this Final Report, including all of the published comment letters in Appendix B. Please make a special note of those letters submitted by Senator Michael Machado, Robert Wilkinson, Arve Sjovold, Joan Wells, Dr. Peter Gleick and myself. C-WIN also incorporates "A Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California" submitted by the California Bay Delta Authority Science Program Association of Bay Governments, December 4, 2003. This document raises significant questions about the accuracy of DWR's Delivery Reliability Report. In addition, C-WIN incorporates two letters, the first from Systems Analyst Arve R. Sjovold dated November 11, 2003, title, "Analysis of SWP Reliability of Delivery". (See	Please refer to Comments 4 and 5 and the Responses thereto. The "paper water" issue in *PCL* referred to misleading local land use planners as to how much water can be relied upon to serve the long-term needs of a development project. That issue might come up with reference to an EIR for a new development project or with reference to an urban water management plan upon which new development might rely. But it does not pertain to this DEIR that analyzes the environmental impacts of augmenting CLWA's existing water supply. Therefore, the reliability analysis for the DEIR helps determine the extent of environmental impacts (including indirect growth inducing impacts) to be analyzed, and nothing more. The delivery projections and reliability models mentioned in the DEIR are not used as environmental review for new development. DEIR Section 1.1 appropriately cautions any land use agencies intending to rely on the Project for a water supply for development projects that "past water deliveries are not a guarantee of future water delivery rates." The comment incorrectly states that the DEIR depends on DWR analysis from the 2002 Final State Water Project Delivery Reliability Report to give planners and the public accurate information on SWP water supply reliability. As set forth in DEIR Section 3.15.2.2 at pages 3.15-30 and 3.15-31, the DEIR assessed water supply reliability for this Project based instead on two independent model studies using the DWRSIM model conducted by DWR in 1998 for the 2000 CALFED Bay-Delta Program EIR. As set forth in the Response to Comment 4, the DWRSIM model studies provided the best estimates of SWP supply reliability that were available when DEIR supply analyses were conducted, and are consistent with the 1998 environmental setting used in this EIR.

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25 (cont)	C-WIN	Attachment C). The second is from PCL President Sage Sweetwood dated February 2, 2004 to Delores Brown of DWR raising grave concerns about the validity of the DWR model known as CALSIM II. (See Attachment D). C-WIN incorporates a table prepared by DWR dated 9/16/02 titled "Historical versus Modeled Table A Deliveries and Demands." This is a draft document released by DWR. The modeled deliveries are significantly above the actual historical deliveries...graphically showing what the Third District Court of Appeal was referred to when they sited the "paper water" in the system. (See Attachment E).	Since the DWRSIM studies were conducted, the modeling tool DWR uses to simulate operations has evolved (first to CALSIM I, and more recently to CALSIM II). However, while the modeling tool itself has changed, the criteria used in the models to simulate SWP operations have not significantly changed. While DWR has completed a more recent assessment of SWP reliability in its SWP Delivery Reliability Report using CALSIM II, the results of these new studies are comparable to the results of the DWRSIM studies (see DEIR Appendix D, Section 2.2 and Figures 2.1 and 2.2 for a comparison of these model study results). As set forth in the Response to Comment 4, the DWRSIM model SWP delivery reliability results were slightly higher than delivery reliability results from these CALSIM II studies. Therefore, from an environmental impact assessment standpoint, the DEIR analyzed the worst-case scenario, i.e., the scenario that would result in greater direct and indirect impacts in both the CLWA and WRMWSD service areas. DWRSIM, like CALSIM II, estimates the amount of water the SWP could deliver to Contractors in each month over the 73 years of operation, for a given set of facilities and operating constraints and for a given level of Contractor demand. The results are interpreted as the capability of the SWP to meet the assumed SWP demand, over a range of hydrologic conditions, for that assumed set of physical facilities and operating constraints. The DEIR uses results from the two DWRSIM studies to determine SWP water supplies for both the pre-Project environmental baseline and the Project environmental impact analysis. Results from the DWR SWP Delivery Reliability Report are only used in the DEIR to determine estimates of SWP water supplies for the current environmental setting. Because the DEIR only depends on the DWR SWP Delivery Reliability Report results to determine the current

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25 (cont)	C-WIN		environmental setting, criticisms of that Report referenced in the comment that are directed at assumed use of that Report and at use of the CALSIM II model for assessing water supply reliability are not valid. Nevertheless, CLWA has considered the letters referenced in the comment that refer to the DWR SWP Delivery Reliability Report, and the DWR responses thereto, and provides the following summary analysis of those comments. The DWR responses can be found at the same web site where the letters are located, www.swpdelivery.water.ca.gov. 10/21/02 Letter by Arve Sjovold of Citizens Planning Association and 3/24/03 DWR Response: The primary criticism of the 2003 DWR Report was that it did not calibrate results to historical delivery records. The DWR response provided information regarding why past deliveries cannot accurately be used to predict future deliveries and therefore, why calibrating CALSIM II to historical deliveries is not appropriate. 10/31/02 Letter by Robert Wilkinson and 4/2/03 DWR Response: The primary criticism of the 2003 DWR Report and CALSIM II model were that the model projects nearly a million acre-feet more than extracted from the Delta during the 1980s and 1990s. The Wilkinson letter asserts that the Report and model fail to take into account environmental and legal constraints. The DWR response refutes those contentions, explaining that current environmental regulations and Delta protection standards allow for more operational certainty of the SWP, giving an example of how CALSIM II accurately predicted the lower deliveries in the prior decades given prior legal and operational constraints. 08/29/02 Letter by Peter Gleick of Pacific Institute and 08/29/02 DWR Response: The Gleick letter raises concerns very similar to those raised by the Wilkinson letter.

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25 (cont)	C-WIN		10/30/02 Letter by Michael Machado of California State Senate and 3/11/03 DWR Response: The Machado letter attaches Nov. 1, 2002 comments by Dennis O'Connor of the California Research Bureau on the Report. The O'Connor comments describe five major concerns with the Report: 1) recent deliveries lower than the modeled 2001 conditions; (2) year 2021 studies do not seem to reflect growth in upstream use; (3) CALSIM II has not been calibrated or verified; (4) the results appear inconsistent with previous estimates and models; (5) CALSIM II is not being used as designed. In response, DWR explained the following: (1) the report used 2001 demand conditions that are higher than historical demand. Therefore, during wetter years when deliveries are limited by demand and not supply, the model will show higher deliveries than historically to meet that higher current demand. During dry periods when supplies are limited, the model's delivery results, when adjusted to reflect historic conditions, are quite comparable to historic deliveries; (2) the model does account for growth in upstream consumptive use; (3) DWR continually checks CALSIM II to determine if it reasonably simulates water operations in the system; (4) of two model examples cited, the first model used a daily and not a monthly time-step as used in CALSIM II. Regarding the second example, DWRSIM results in CLWA's UWMP, DWR stated: "DWR understands that the [UWMP] incorporates a more conservative interpretation of the results of the referenced DWRSIM study. DWR supports and encourages local water agencies to apply the level of SWP reliability they determine is appropriate for their areas, taking into account local supplies, other imported supplies, demand-management programs and

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25 (cont)	C-WIN		local planning criteria. The DWP Delivery Reliability report should serve as a reference document to help clarify decisions that are made at the local level"; (5) CALSIM studies are best used as comparative studies. 10/19/02 Letter by Carolee Krieger of Citizens Planning Association and DWR 3/24/03 Response: This letter raises issues similar to those in the Sjovold, Gleick and Wilkinson letters. In addition to the comment letters to the DWR SWP Delivery Reliability Report, CLWA has considered the information regarding the CALSIM II model referenced in this comment and has determined that CLWA's use of the CALSIM II model for the limited purpose set forth in the DEIR is appropriate. CLWA makes note of the following with regard to the documents referenced in the comment: December 4, 2003 "A Strategic Review of CALSIM II and its Use for Water Planning, Management and Operations in Central California." While the peer review panel did identify a number of areas for model improvement in this document, that was a primary purpose for commissioning their review. However, they did not characterize any of these areas as so flawed that the model's results could not be relied on. In fact, the peer review panel's conclusions regarding the CALSIM II model on page 2 of this document states: "We believe the use of an optimization engine for simulating the hydrology and for making allocation decisions is an appropriate approach and is in fact the approach many serious efforts of this kind are using. It is a substantial improvement of the previous modeling approaches and provides a basis for consensus among federal and state interests. The modeling approach addresses many of the complexities of the CVP-SWP system and its water management decisions." And on page 20, they go on to state: "Few, if any, modeling organizations in the country have consistently done as good a job on model development and

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25 (cont)	C-WIN		application for such a large, complex, and controversial system as the modeling group which developed CALSIM II." The August 2004 joint response of DWR and the Bureau of Reclamation to this document can be found at baydeltaoffice.water.ca.gov/modeling/index..cfm under "Peer Review Response." February 2, 2004 Sage Sweetwood Letter. This letter does not contain any independent evidence regarding CALSIM II. The letter merely restates the December 4, 2003 Report's suggestions for improvements to the model. The letter also acknowledges the 2003 Reports conclusions about the usefulness of the model. November 11, 2003 Analysis of SWP Reliability of Delivery. The Analysis reviews the DWR 2003 State Water Project Delivery Reliability Report. The Analysis is based on calculations using CALSIM II, and does not contain an independent analysis of the CALSIM II model. The Analysis uses CALSIM II model published results to question the reliability estimates for the SWP contained in the DWR 2002 Report. According to the Analysis, the 2002 Report 76% level of reliability for average years must take into account actual contractor practices and contractor specific situations. Thus, the Analysis contains information that is not germane to whether CALSIM II is an appropriate model. Draft September 16, 2002 Chart of Historical vs. Modeled Table A Deliveries. The Chart does not contain sufficient information about what model is used or what data set is used, or who prepared the chart. The Chart also indicates it is in draft, and not final form. Assuming the chart is prepared by DWR and refers to the DWR SWP Delivery Reliability Report, the chart shows that historic deliveries have been limited by historic contractor demand in most years, and that in many of those years there was adequate water available to meet the higher demand used in the model study.

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26	C-WIN	Significant Cumulative Impacts Not Recognized. CLWA is continuing to speculatively and irresponsibly approve proposed developments incrementally based on the hope that they will successfully acquire this 41,000 AF of SWP Table A allocation from the Kern County Water Agency. C-WIN hereby incorporates the following comment letters to show just how much is being proposed incrementally using this contended source as final. The cumulative impacts are not being considered. This is very significant when the true reliability numbers for the actual water supply are factored in as well. ▪ The C-WIN January 1, 2004 objection letter to the CLWA on the Negative Declaration for a proposed 35,000 AF transfer for a Groundwater Banking Project that depends on this same 41,000 AF transfer. ▪ The C-WIN February 3, 2004 objection letter to the LA County Regional Planning Department on the proposed West Creek Project #98-008 to build 2,545 residential units that depend on this same 41,000 AF transfer. ▪ The C-WIN February 26, 2004 objection letter to the County of Los Angeles Regional Planning Department regarding the proposed River Valley Project No. 00-196 to build 1,444 residential units, 1.5 million square feet of non-residential mixed-use space, along with a 7 acre elementary school and public recreational facilities; this project also relies on this 41,000 acre foot transfer. ▪ The C-WIN May 4, 2004 letter to the Planning and building Services Department of the City of Santa Clarita regarding the proposed River Park Project No. 02-175 to build 1,183 residential units, heavily relying on this same 41,000 AF transfer.	The cumulative impacts of the projects referenced in the comment are considered at Sections 6.3.3.1 (CLWA projects) and 6.3.3.2 (DMS projects) of the DEIR. CLWA does not approve new development, and the Project includes no approval of new development. As noted in DEIR Section 1.1, CLWA is not a land use agency that can approve new development. That section appropriately cautions any land use agencies intending to rely on the Project for a water supply for development projects that "past water deliveries are not a guarantee of future water delivery rates." The delivery projections and reliability models mentioned in the DEIR are used to identify environmental impacts of this Project, and are not intended or represented to constitute environmental review for new development. CLWA did not participate in any water supply assessment for either the West Creek or the River Village projects. The Riverpark project is listed in the Los Angeles County Development Monitoring System (DMS), as are the other two mentioned development projects. The River Village project did not rely on this Project for its water supply reliability analysis. The 35,000 acre-foot Groundwater Banking Project is now final and not subject to challenge, and is a one-time 10-year storage project that cannot, because it is short-term by its nature, cause or promote growth. (See DEIR Section 6.3.3.1).
27	C-WIN	This 41,000 AF water transfer should be rejected until the EIR for the new "Monterey Plus: has been finalized and adopted. When and if you do proceed, it is required that DWR be the lead agency.	Please refer to the Master Response and to Comments 9, 10, 11 and 22 and the Responses thereto.

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28	C-WIN	CWN hereby incorporates all other comments by reference opposing this transfer submitted on this CLWA EIR proposing to permanently transfer 41,000 AF of Table A allocation from the Kern County Water Agency to the Castaic Lake Water Agency.	This comment is noted; no text revisions are required.
29	FSCR I	As we noted in our response to the Notice of Preparation, the Castaic Lake Water Agency (CLWA) is not the proper Lead Agency to prepare an Environmental Impact Report (EIR) for this project under the California Environmental Quality Act.	Please refer to the Master Response.
30	FSCR I	The 1995 Monterey Agreement between the California Department of Water Resources (DWR) and water contractors of the State Water Project was put in place to control transfers of the type described in the subject document. There is at present no Monterey Agreement EIR because of the PCL decision of September 2000, which held that the Monterey Agreement EIR prepared by CCWA was inadequate. The court held that the DWR was the proper Lead Agency for this Agreement because only the DWR has the statewide perspective needed to evaluate the environmental impacts to the entire water distribution system.	Please refer to the Master Response and to Comments 9, 10 and 11 and the Responses thereto. The comment incorrectly states that the 1995 Monterey Amendment was necessary to control transfers of the type specified in this Project. The 1995 Monterey Amendment had as one of its purposes to help facilitate transfers between agricultural and urban contractors, but such transfers were not prohibited prior to execution of the Monterey Amendment. The Monterey Amendment Settlement Agreement explicitly states that the SWP will operate under the Monterey Amendment while the new Monterey Amendment Program EIR is prepared. This includes operation under Article 53, pursuant to which the Kern County Water Agency consented to up to 130,000 acre-feet of agriculture to urban transfers. Suggestions that consideration of such transfers must await completion of the new Monterey Amendment Program EIR would render this element of the Monterey Amendment Settlement Agreement a nullity, contrary to the clear understanding of the signatories to that document. As the comment notes, a new Monterey Amendment Program EIR has not yet been certified, but DWR is in the process of preparing that new EIR. This comment confuses this Project and the DEIR with the Monterey Amendment and its new Program EIR. As noted in the Response to Comment 10, several transfers have occurred since the September 2000 *PCL* decision.

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31	FSCR I	The EIR for the 41,000 acre-feet transfer must tier from a certified Monterey Agreement EIR, which does not currently exist. This was indeed suggested by the Second Appellate District Court decision of January 2002 in the case brought against CLWA by Friends of the Santa Clara River. Page 19 of this decision states that "Respondent may be able to cure the PCL problem by awaiting action by the state DWR complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or Addendum to EIR (Guidelines 15162, 15163, 15164) tiering on a new Monterey Agreement EIR.	Please refer to the Master Response and to Comment 10 and the Response thereto. The statement by the Court of Appeal in *Friends I* was a suggestion, not a requirement. The Court of Appeal could not have intended to require CLWA to tier off a programmatic EIR when CEQA allows a lead agency for a project to choose whether or not to tier off an available programmatic EIR. CEQA does not require a lead agency to delay a project and to wait for a programmatic EIR to become available, even where a programmatic EIR is contemplated. (See 14 Cal. Code Regs. §§ 15160 & 15168)
32	FSCR I	Since CLWA cannot legally be the Lead Agency for the subject transfer, the only legitimate way for CLWA to proceed with EIR preparation is to await DWR's preparation and certification of a Monterey Agreement EIR. The subject DEIR is thus invalid and not in compliance with court decisions involving this transfer of state water.	Please refer to the Master Response.
33	FSCR II	Please include the following correspondence between our attorney and the Department of Water Resources and their response regarding the timeline for the completion of the Monterey Agreement Environmental Impact Report. Because this EIR must be tiered on the State wide impacts addressed in the Monterey Agreement EIR and could not proceed without this Agreement, your Agency must wait until the state wide document has been certified before certifying the EIR for this project.	Please refer to the Master Response. With regard to the attached 5/18/04 letter from Alyse M. Lazar and the 6/17/04 Lester Snow DWR response thereto, please refer to the Comment 22 and the Response thereto. There is no legal requirement that this EIR be tiered off the new Monterey Amendment Program EIR. Please refer to Comment 31 and the Response thereto.
34	FSCR II	We continue to protest that you may not approve this document because you are not the correct lead agency for a project with state-wide impacts. Since the Dept. of Water Resources was found to be the legitimate lead agency for such a transfer in the decision PCL v. DWR, 2000, we protest your disregard for legal precedent on this matter. We note that your current general manager, Dan Masnada, is the same person that proceeded illegally in the above case when he was general Manager of Central Coast Water Agency. He is well aware that your agency is not proceeding according to law.	Please refer to the Master Response. The identity of the CLWA manager is irrelevant to the issue of which agency is the appropriate lead agency for the Project.

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35	FSCR II	Further, we wish to state that none of these documents, nor the current EIR before you address the effects of an earthquake or levee break (such as recently occurred in the Sacramento Delta, news article attached). These emergencies were also not addressed in the Urban Water Management Plan 2000. We ask that you address how your agency intends to manage such a water emergency under current water availability scenarios and how water supply would be affected under such an emergency with the additional buildout this transfer would permit.	The potential for earthquakes or levee breaks to temporarily affect water supply is noted. These issues are more appropriately addressed in the updated Urban Water Management Plan, which is scheduled for release in 2005 and requires such analysis. The EIR focuses on the environmental impacts of the transfer of Table A Amount and evaluates the water supply that would be available to CLWA using an established model developed by DWR. While emergencies could occur and temporarily disrupt water supplies, these are not impacts of the Project, and the EIR evaluates reasonable scenarios and uses the worst-case scenario in terms of growth-related impacts. SWP and CLWA facilities are designed to resist damage upon the occurrence of a seismic event. CLWA maintains substantial reservoir storage for use should SWP deliveries be temporarily interrupted from any catastrophe. The potential for seismic or other catastrophic damage significant enough to interrupt CLWA water deliveries is low, but the concern expressed in the comment is noted. Any such damage could disrupt CLWA water deliveries temporarily, but any such temporary interruption would have a less than significant impact on the DEIR projections for the long-term reliability of the Table A Amount proposed to be transferred by this Project. The Project is intended to provide an augmented water supply, over the long term, to CLWA and its purveyors. Short-term disruptions in delivering this water supply will cause inconvenience to all those reliant on CLWA's supplies. That inconvenience could occur equally today with CLWA's present sources of supply, should a catastrophic event occur. CLWA's purveyors have made provision for use of groundwater in the event CLWA deliveries are interrupted.
36	FSCR II	We ask that you respond to the recommendations made recently by the two experts, Kathy Kelly and Jonas Minton who gave testimony regarding State Water project availability before the City of Santa Clarita Planning Commission on June 29th, 2004. They both suggested that the planners should	The DEIR focuses on the environmental impacts of the transfer of Table A Amount and evaluates the water supply that would be available to CLWA using an established model developed by DWR. Three hydrologic scenarios are analyzed. The average year supply is the average amount of water available

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36 (cont)	FSCR II	analyze the effect of cutbacks that would be required under the worse case historical delivery rate, 13% of Title A amounts in 1991, on existing businesses and residents in the Santa Clarita Valley. Since ground water sources are in the Santa Clarita Valley are fully utilized, substantial cutbacks would be required. This significant impact should be addressed.	based on DWRSIM model results over its entire period of hydrologic record. The multiple dry year period supply is the average amount of water available over the four consecutive drought years of 1988 through 1991 based on DWRSIM model results. The single dry year supply is the supply available in the single year with the lowest total SWP deliveries based on DWRSIM model results, which occurred in 1977. In this single dry year, the supply was about 22% of Table A Amounts, and the increase in SWP supply due to the Project was estimated to be 9,200 acre-feet. If instead the supply in a single year were 13% of Table A Amounts, then the increase in supply due to the Project would be reduced to 5,300 acre-feet. Any environmental impacts based on this lower supply amount would be less than those described in the DEIR. Use of the 22% supply amount results in analysis of the worst-case environmental impact assessment scenario. The Project would have a beneficial impact to water supply, including groundwater, because it would increase the amount of water available to the CLWA service area, and would not result in a potentially significant impact. The comment implies that CLWA approves development projects. CLWA does not have the authority to approve development projects. The DEIR includes an analysis of indirect impacts of the Project, focusing on growth-related impacts, but CLWA defers to the local agencies with land use authority to conduct site-specific and project-specific CEQA review of proposed development projects. Please refer to the response to Comment 26. The comment states incorrectly and includes no evidence that groundwater sources in the Santa Clarita Valley are fully utilized. As Section 3.15.1.3 of the DEIR indicates, at Page 3.15-18, average annual production from the Alluvial Aquifer is approximately 30,000 acre-feet, within or below the 30,000-40,000 acre feet per annum operational yield. In addition, Page 3.15-19 indicates that average annual production from the

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36 (cont)	FSCR II		Saugus Formation is 6,800 acre-feet, well below a conservative estimate of the operational yield at 15,000 acre-feet per annum. Those yields factor in the increased groundwater pumping that occurs in dry years, given the amount of State Project water available under the Project as calculated using DWR reliability studies. (See DEIR Table 3.15-7) The projected average water demand will be less than the projected water supply available for the foreseeable future. (See Table A-1 in Attachment A to Volume II of the FEIR) Thus, the DEIR indicates that groundwater use will not increase above average operational yield even with increased dependence on State Project water. As DEIR Section 3.15.1.3 notes, the prior importation of State Project water has increased the yield of the Alluvial Aquifer as a result of return flows. Thus, increased importation under the Project potentially could increase groundwater yields. The comment provides no evidence of a significant environmental impact on groundwater resources as a result of the Project.
37	PCL/CPA	This letter provides comments on the Draft EIR entitled *Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount*, on behalf of the Planning and Conservation League (PCL) and the Citizens Planning Association of Santa Barbara County (CPA). If finalized, that transfer would be the largest permanent agriculture-to-urban transfer under article 53 of the Monterey Amendments, with major implications for water resources and land use planning in Southern California. The environmental impacts of these amendments, including the instant transfer, remain to be addressed in DWR's pending "Monterey Plus" EIR review. The scoping comments submitted for that review (attached as Exhibit 1), including those of PCL, should be studied in connection with the present EIR review.	This comment is noted. Please refer to the Master Response. The commenter correctly identifies the Project as a large permanent transfer of SWP Table A Amount. However, the comment incorrectly implies that the new Monterey Amendment Program EIR will evaluate the specific environmental impacts of this Project. The Monterey Amendment Settlement Agreement provides that this Project is subject to the jurisdiction of the *Friends I* trial court, which court has ordered that CLWA certify a new EIR for this Project. The Monterey Amendment Settlement Agreement provides that the new Monterey Amendment Program EIR must analyze the environmental impacts of this Project and other transfers as they relate to the environmental impacts of approving the Monterey Amendment. The upcoming Monterey Amendment EIR will not analyze the local Project-related growth-inducing impacts in the same degree of detail for the CLWA service area, although the Monterey Amendment EIR will include the 41,000

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37 (cont)	PCL/CPA		acre-feet transfer in its analysis together with all other transfers of Table A Amounts. The DEIR analyzes the potential indirect environmental impacts of the Project, arising out of growth that may be served by this water supply, taking into account pre-Monterey Amendment baseline conditions, including those for agricultural State Project water. (See DEIR 3.0) The DEIR analyzes the Project impacts both with and without the Monterey Amendment. (See DEIR 3.15.2.2 & Table 3.15-5) As set forth in the Master Response, the choice of lead agency is not dictated by the size of the project, but by which agency has principal responsibility to approve and carry out the Project. Also, as described in the Master Response, CLWA, as the local agency principally approving and implementing the Project, not DWR, has more expertise and perspective to explore the implications for water resources and land use planning within CLWA's jurisdiction.
38	PCL/CPA	PCL and CPA were among the plaintiffs whose successful CEQA challenge set aside the Central Coast Water Authority's original 1995 Monterey Program EIR. That ruling led to decertification of the predecessor EIR for Castaic's transfer, which unlawfully relied upon that defective analysis. The instant Draft EIR, prepared by the same firm (SAIC) as the decertified Monterey EIR, provides a case of history repeating itself. It is legally insufficient in process and substance, failing Castaic's duty under CEQA to properly inform decision-makers and the public of the project's environmental consequences. The Draft EIR cannot be reconciled with the Monterey Amendments court decision (*Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892) and the settlement agreement later reached in that case. (The full Settlement Agreement appears on DWR's website at http://www.montereyamendments.water.ca.gov/.)	Please refer to the Master Response. The decertified Monterey Amendment EIR analyzed the potential environmental impacts of major amendments to the SWP contracts, with statewide implications. The "project" to be analyzed in the new Monterey Amendment Program EIR will differ significantly from the Project in this DEIR. This DEIR analyzes the potential environmental impacts of a local project. The lead agency and water supply reliability issues identified in *PCL* as not having been adequately analyzed in the decertified Monterey Amendment EIR, have been addressed in this DEIR to the extent those issues are relevant to the Project. In any event, the identity of the firm preparing the EIR is not relevant in establishing the issue of the adequacy of an EIR. The comment points to no substantive evidence of the inadequacy of the DEIR in support of its statement that the DEIR is insufficient in process and substance and fails CLWA's duty under CEQA.

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39	PCL/CPA	PCL and CPA submitted a comment letter on August 22, 2004. This letter, attached as exhibit 1, addressed both the instant transfer and a related proposal to transfer 16,000 acre-feet of Table A amounts from another of the Kern County Water Agency's member districts. PCL urged Castaic that it should "refrain from moving forward with these separate project reviews, which are premature and likely to operate at cross-purposes with DWR's statewide review" of the project referenced in the Monterey Amendments case settlement. PCL and CPA advised Castaic that if it prematurely attempted to proceed with separate EIRs on these permanent transfers, it would "lack the institutional authority and statewide accountability" to serve as CEQA lead agency. The DEIR simply ignores PCL's comments, and sidesteps similar ones made by other organizations.	Please refer to the Master Response and to Comments 2, 3, 5, 6 and 22 and the Responses thereto. The DEIR does not include an analysis of a 16,000 acre-foot transfer of Table A Amount as part of the Project because any such future transfer is speculative and is not linked to the Project. However, the DEIR does discuss the cumulative impacts of the 16,000 acre foot transfer in DEIR Section 6.3.3.1. CLWA issued an NOP for the 16,000 acre-foot transfer, but because the option agreement for the 16,000 acre-foot acquisition expired, CLWA has conducted no further environmental review. DWR's new Monterey Amendment Program EIR will not constitute an EIR for this Project. The Monterey Amendment Program EIR will analyze the potential impacts resulting from this Project and other transfers as they relate to potential environmental impacts of approving the Monterey Amendment. CEQA does not require that a lead agency delay a project to await a program EIR that will discuss the project as part of a broader analysis of similar projects. CEQA gives agencies the choice to prepare a project EIR in lieu of tiering off a program EIR. As the parties to the Monterey Amendment Settlement Agreement recognized, a transfer between two State Contractors is not a project for which DWR should be the lead agency. The EIR for this Project is being prepared by CLWA under the supervision and at the direction of the Los Angeles Superior Court. DWR does not have principal responsibility to approve or carry out the Project, and is acting as a responsible agency. The physical environmental impacts of a two party transfer are generally confined to the respective service areas of the two agencies involved (CLWA and WRMWSD, as a member agency of KCWA), although the DEIR analyzes potential impacts upon SWP facilities as well.

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40	PCL/CPA	PCL filed similar comment letters on several local projects contesting Castaic's improper and premature reliance on the 41,000 acre-feet transfer as an integral part of its reliable water supply. These comments (addressing, respectively, the West Creek Project, the River Village Project, and the Riverpark project) are attached as exhibits 2-4. They raise important questions affecting the adequacy of this EIS, as well as the prospect of possible cumulative impacts not addressed in Castaic's draft.	Please refer to the Response to Comment 26.
41	PCL/CPA	Castaic's so-called "stand-alone" Draft EIR is fraught with potential for inconsistency with DWR's upcoming environmental review and decision on the "Monterey Plus" project. That review will address the identical transfer from a statewide perspective, with an integrated analysis of that project in its entirety. Castaic lacks the expertise and authority to proceed based upon its isolated assessment of project impacts, alternatives, and mitigation, each of which may well be undermined by DWR's subsequent analysis and decision.	Please refer to the Master Response and to Comments 2 through 6 and the Responses thereto. The comment incorrectly suggests that the new Monterey Amendment Program EIR will address this Project in its entirety with an integrated analysis. The Los Angeles Superior Court in *Friends I* ordered CLWA, not DWR, to prepare the EIR for this Project. The Monterey Amendment Settlement Agreement requires DWR to prepare a new program EIR for the Monterey Amendment, not for this Project. The Monterey Amendment Settlement Agreement excludes the possibility that the new Monterey Amendment Program EIR could constitute an EIR for this Project because it states that the Los Angeles Superior Court retains jurisdiction over the environmental document for this Project. The Monterey Amendment Settlement Agreement only requires that DWR analyze the potential impacts resulting from this Project and other transfers as they relate to the potential environmental impacts of approving the Monterey Amendment. Attachment D of the Monterey Amendment Settlement Agreement recognizes that non-final individual transfer projects will be reviewed by DWR only as the responsible agency. There is no evidence that this DEIR will be undermined by DWR's new Monterey Amendment Program EIR. Both this DEIR and the Monterey Amendment DEIR use the same DWR model (CALSIM II) to evaluate potential impacts, and CLWA

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41 (cont)	PCL/CPA		has coordinated with DWR, acting as a responsible agency, to ensure that the DEIR will not undermine DWR's efforts in preparing the new EIR for the Monterey Amendment.
42	PCL/CPA	Two recent Second District Court of Appeals cases reinforce the point that Castaic Lake Water Agency (CLWA) should not pursue its own independent EIR on the 41,000 acre foot transfer in advance of the completion of DWR's tier-one "Monterey Plus" EIR. In *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, the Second District court of appeal ordered the decertification of the previous EIR Castaic prepared to support the instant transfer. The Friends group and other environmental organizations opposed the project decision on that Kern/Castaic transfer, citing environmental consequences in the Santa Clara River area and association with numerous sprawl development projects. In its CEQA assessment, the court recognized that the proposed 41,000 acre-feet transfer "is part of an overall larger scheme, analyzed on a programmatic basis in the Monterey Agreement EIR." (*Id.* at 1384.)	Please refer to the Master Response and to Comments 37, 39 and 41 and the Responses thereto. The possibility that the Project can be considered part of an overall larger scheme for purposes of tiering off a program EIR, instead of preparing a stand alone project EIR, does not mandate that the agency tier off a program EIR.
43	PCL/CPA	Another recent Second District appellate decision, *Santa Clarita Organization for Planning and the Environment (SCOPE) v, County of Los Angeles* (2003) 106 Cal.App.4th715, critically addressed Castaic's characterization of the 41,000 acre-feet transfer. In that case, the County of Los Angeles violated CEQA in its review of the West Creek development project that erroneously assumed that 100 per cent of Castaic's purported 41,000 acre-feet would be available in wet years and 50 per cent in drought years. Drawing on *Planning and Conservation League's* assessment of the historic disparity between Table A amounts and deliverable water, the court concluded that the EIR failed to undertake a "serious and detailed analysis" of State Water Project supplies, and observed that "[t]he dream of water entitlements for the incomplete State Water Project is no substitute for the reality of actual water the SWP can deliver." (*Id.* at pp. 723, 717.)	This comment is noted, but it is inapplicable to the DEIR. It is not a comment on the Supplemental Water Project EIR. The project that was the subject of the *SCOPE* litigation and EIR is distinguishable from this Project. In *SCOPE*, the EIR for a development project[1] was invalidated because its cumulative impacts analysis of past, present and future developments on the amount of water available relied heavily on SWP Table A Amounts in calculating the total available water supply. The EIR in *SCOPE* made no attempt to calculate or even discuss the differences between Table A Amounts and actual supply. The EIR in *SCOPE* did not contain estimates or past delivery history from DWR, the agency that manages the SWP, in projecting how much water the SWP can deliver in different types of years.

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43 (cont)	PCL/CPA		In contrast, this DEIR does not analyze a development project, but a transfer of SWP Table A Amount. CLWA's acquisition of an additional 41,000 acre-feet Table A Amount serves to firm up CLWA's SWP deliveries to meet CLWA's current demand and to help meet future demand projected in local land use agency planning documents. The DEIR for this Project contains a detailed calculation of the total available water supply and discusses in detail the differences between Table A Amounts and actual supply. The DEIR for this Project contains DWR reliability estimates using DWR models as to how much water DWR can deliver in different types of years. The DEIR in Section 1.1 also cautions any land use agencies intending to rely on the Project for a water supply for new development that "past water deliveries are not a guarantee of future water delivery rates." [1] *The EIR in SCOPE was not prepared by Castaic as suggested in the comment—CLWA does not approve development projects.*
44	PCL/CPA	The Courts have also emphasized that DWR must act as lead agency in performing Tier 1 environmental studies. If Castaic continues with its separate environmental reviews without awaiting DWR's assessment in the "Monterey Plus" EIR, it would violate CEQA's lead agency requirement based upon the well-established standards set forth in *Planning and Conservation League v. Department of Water Resources*. The court in that case could hardly have been clearer that *DWR* is the "state agency charged with the statewide responsibility to build, maintain, and operate" the State Water Project. (*Id.* at p. 906.; see also Wat. Code, §12930, *et seq.*) Finding that DWR was the only entity with the requisite statewide perspective and expertise to serve as lead agency, the court found it "incongruous to assert that any of the regional contractors" could "assume DWR's principal responsibility for managing the SWP." (*Id.*) The court-approved settlement agreement in *Planning and Conservation League* recognizes DWR's duty as "the	Please refer to the Master Response and to Comments 2, 3, 4, 5, 6, 8, 9, 10, 22 and 72 and the Responses thereto. The DEIR is not a Tier 1 environmental study. The Project does not encompass administering, building, maintaining, managing and operating the SWP. DWR's role in the Project is as a responsible agency, charged with responsibility of approval of a point of delivery agreement to facilitate the transfer. The Monterey Amendment Settlement Agreement recognizes the role of State Water Project contractors as lead agencies for two party transfers between contractors. The Monterey Amendment Settlement Agreement provides that the Monterey Amendment will remain in place during preparation of the new Monterey Amendment Program EIR, thus permitting contractor transfers of the 130,000 acre-feet identified in Section 53 the Monterey Amendment. CLWA, not DWR, has local expertise regarding anticipated future projects within CLWA for indirect and cumulative impacts analysis. DWR's statewide authority and experience has been utilized, to the extent appropriate, in evaluating the Project's potential environmental

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44 (cont)	PCL/CPA	State agency responsible for administration and operation of the SWP," as well as its continuing obligation to comply with applicable requirements of CEQA and the Water Code. (Settlement Agreement, Section X.B.) The transfer guidelines disclosed to contractors under the settlement agreement also recognize the continuing need to comply with all existing legal requirements, including CEQA, and to honor the lead agency principles identified in the Third District's decision in the Monterey Amendments case (see http://ceres.ca.gov/ceqa/cases/2000/PCLvDWR-2000.html). These principles apply clearly to the proposed permanent transfers of the Table A amounts referenced in the state project contracts, which require DWR's approval and presuppose the application of Monterey. They also concededly require changes in the amount of supplies available to several water agencies, the location and timing of project deliveries, and changed utilization of the project's conveyance and storage facilities. The transfers, which may require the fallowing of farmland in agricultural areas outside the jurisdiction of CLWA and are associated with proposed annexations linked to some of the more controversial development projects in California, demand the statewide authority and experience that only DWR can provide.	impacts, in that DWR has been consulted as a responsible agency. DWR's new Monterey Amendment Program EIR will not analyze the Project in its entirety. According to the Monterey Amendment Settlement Agreement, DWR will only analyze the potential environmental impacts resulting from this Project and other transfers as they relate to the potential environmental impacts of approving the Monterey Amendment. Oversight of the CEQA analysis for the Project falls within the jurisdiction of the Los Angeles Superior Court, as stated in the decision in the *Friends I* case and as acknowledged by the Monterey Amendment Settlement Agreement, Section III(E). There is no evidence that this DEIR will violate DWR's lead agency status in the preparation of the new Monterey Amendment Program EIR. The Monterey Amendment project description is substantially different from the description for the Project. The two environmental analyses share one common feature--both this DEIR and the Monterey Amendment EIR use the same DWR model (CALSIM II) to evaluate potential impacts. The Project does not require the fallowing of farmland and is not linked to any development project. Please refer to the Response to Comment 72 for a thorough discussion regarding the lack of need for fallowing resulting from the Project. Please also refer to the Responses to Comments 23 and 26.
45	PCL/CPA	Lastly, Castaic's hypothetical "non-Monterey" analysis of the transfers in the Draft EIR cannot substitute for DWR's new assessment of the Monterey changes. In *Friends*, Castaic unsuccessfully attempted to portray its transfer EIR as capable of standing alone, outside the Monterey Amendments program. Although transfers were available under Article 41 of the pre-Monterey State Water Project contracts subject to express DWR approval, DWR has neither reviewed nor conferred approval on the present transfer under Article 41.	Please refer to the Master Response and to Comments 3, 5 and 10 and the Responses thereto. As those comments from DWR note, DWR has approved of the DEIR's "non-Monterey" analysis. The *Friends I* court rejected CLWA's claim that the prior Project EIR stood alone because the prior Project EIR did not analyze the environmental impacts on the seller's lands under pre-Monterey Amendment conditions. However, the DEIR does analyze those impacts, as set forth in DEIR Section 3.2 and Appendix C. Therefore, the "straw man" problem of

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45 (cont)	PCL/CPA	Moreover, it is highly speculative whether agriculture-to-urban transfers such as the 41,000 acre foot transfer would even have taken place without the Monterey Amendments, since those Table A amounts would have been subject to "agriculture first" cutbacks under pre-Monterey article 18(a). Read in context, such maneuvers would amount to little more than the "straw man" argument considered and rejected in the *Friends* appeal. (95 Cal.App. 4th at p. 1387.)	referencing the Belridge EIR that did not address the impacts to the seller's lands, discussed in *Friends I*, has been resolved in the DEIR. To clarify, the Project could occur either pre- or post-Monterey Amendment and has been analyzed accordingly in this "stand alone" DEIR. The commenter fails to acknowledge that the Monterey Amendment Settlement Agreement provides that the Monterey Amendment remains in full force and effect, and that permanent Table A Amount transfers may occur under the Monterey Amendment, while DWR prepares the new Monterey Amendment EIR. As noted in DEIR Section 1.4.2, CLWA has 12,700 acre-feet of SWP agricultural contractor water previously purchased under the pre-Monterey Amendment condition. DEIR Table 3.15-17 illustrates that CLWA would obtain more of an advantage from the Project under imposition of pre-Monterey Amendment Article 18(b) in average and multiple dry years than it would under the Monterey Amendment. Therefore, the Project is potentially advantageous to CLWA even without the Monterey Amendment. That is because the remaining 41,500 of CLWA's 54,200 Table A Amount pre-existing the Project is designated as M&I contractor water and would benefit in years when agricultural contractor cutbacks would occur under pre-Monterey Article 18(b).
46	PCL/CPA	The instant Draft EIR, includes glaring errors. A piecemeal and startlingly inaccurate description of the Monterey case Settlement Agreement (ES 2-4) fails even to inform the reader that DWR's statewide review of the "Monterey Plus" project could affect the future of this transfer or of the Monterey Amendments themselves.	The description of the Settlement Agreement is accurate and contains the specific information relevant to the EIR analysis. Because the new Monterey Amendment EIR is still in preparation, the Supplemental Water Project EIR contains an analysis of environmental impacts that would occur both with and without the Monterey Amendments in place, consistent with CEQA Guidelines section 15144, which indicates that "while foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all it can." Trying to forecast what future changes to SWP Contracts might occur as a result of the new Monterey Amendment EIR, and

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46 (cont)	PCL/CPA		what the environmental impacts of such changes would be, is speculative and not required by CEQA (CEQA Guidelines section 15145). Because the Monterey Amendment Settlement Agreement provides that the Monterey Amendment will remain in full force and effect while DWR prepares a new EIR, it is appropriate that the environmental analysis for this Project include both the "with and without Monterey Amendment" conditions. The September 24, 2002 trial court judgment on remand in *Friends I* provided as follows with respect to the water transfer under this Project pending certification of an EIR that complies with CEQA and the Court of Appeal opinion: "Respondent will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper." The Court of Appeal affirmed that judgment in a subsequent unpublished opinion. Please refer to the Master Response and to Comments 2-6 and the Responses thereto. The DEIR is not tiered off the new Monterey Amendment Program EIR. The new Monterey Amendment Program EIR is still pending and could take many months to complete. As noted by DWR, the approach to environmental analysis in the DEIR is not inconsistent with the approach that DWR is taking in preparing the new Monterey Amendment Program EIR. DWR is a responsible agency that must approve or disapprove the Project and will rely upon CLWA's certified EIR to perform that function.
47	PCL/CPA	The "Settlement Agreement underscores the non-finality of the 41,000 acre-feet transfer and the need for DWR's statewide review. For example: • Section III.D refers to a list of transfers listed in attachment E to the agreement, which the settling parties, without specifically endorsing or opposing them, recognize as	Please refer to the Master Response and to Comments 9, 10 and 22 and the Responses thereto. The Monterey Amendment Settlement Agreement does not state or imply that the new Monterey Amendment Program EIR must serve as the EIR or as a Tier 1 EIR for this Project. Section (III)(C)(4) of the Monterey Amendment Settlement Agreement only requires that the new Monterey Amendment Program EIR analyze the

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47 (cont)	PCL/CPA	"final" and agree not to challenge. This transfer is *not* included in that list. • Further evidence of the non-finality of the Castaic transfer is that section III.E singles out this transfer for a special acknowledgment recognizing that it is the subject of pending litigation in this Court.[fn.1] • Section III.C.4 recognizes DWR's commitment to provide in its forthcoming statewide programmatic EIR an "[a]nalysis of the potential environmental effects" relating to "the Kern-Castaic Transfer," identifying it as one of the actions "that relate to the potential environmental impacts of approving the Monterey Amendments." [Fn. 1 from letter:] The Draft EIR erroneously attempts to recast this provision as a "specific exclusion" of this transfer from "any prohibitions against transfers of Table A amounts by the Settlement Agreement." That is simply wrong. Section III.E recognizes that this transfer is "subject to pending litigation in the Los Angeles Superior Court following remand from the Second District Court of Appeal." It reflects a recognition that "jurisdiction with respect to that litigation should remain in the [Los Angeles] court," and the settling parties' concurrence that "nothing in this settlement agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."	potential environmental impact of Monterey Amendment Settlement Agreement Attachment E transfers and this Project as actions that relate to the potential environmental impacts of approving the Monterey Amendments. Section III(E) of the Monterey Amendment Settlement Agreement, which recognizes that the Los Angeles County Superior Court in *Friends I* has jurisdiction over this Project, serves to limit the analysis required by Section III(C)(4). The Los Angeles County Superior Court in *Friends I* stated in its judgment on remand with respect to this Project: "Respondent will not be prohibited from using the water to which it is entitled, but petitioner may renew its application for such prohibition based upon evidence of the actual use of such additional water for purposes it considers improper." With respect to DEIR reference to a "specific exclusion," see the Response to Comment 10.
48	PCL/CPA	DWR has recently confirmed that this transfer remains subject to the Settlement Agreement and its future "Monterey Plus" EIR. As DWR Director Lester Snow wrote on June 17, 2004 to *Friends* case lead counsel Alyse Lazar, "DWR's treatment of the transfer of Table A amounts from Kern County Water Agency to Castaic Lake Water Agency will be governed by the Settlement Agreement. As provided in Paragraph IIIC4 of the Settlement Agreement, the EIR will include an "analysis of the potential environmental impacts relating to (a) the Attachment E transfers, and (b) the Kern-Castaic Transfer, in each case as	Please refer to the Master Response and to Comments 22, 33 and 47. The Snow letter does not state that the Project will be reviewed by DWR as a new project. In fact, the Snow letter reaffirms what the Settlement Agreement provides, i.e., that the Project and the Settlement Agreement Attachment E transfers will be reviewed only "as actions that relate to the potential environmental impacts of approving the Monterey Amendments."

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48 (cont)	PCL/CPA	actions that relate to the potential environmental impacts approving the Monterey Amendments." Section 1(0) of the Settlement Agreement defines the "Kern-Castaic Transfer" as "the transfer of 41,000 AF of water from Kern County Water Agency to the Castaic Lake Water Agency, approved by DWR on March 31, 1999." DWR has not completed any draft or final analysis regarding these transfers." Given both the required state leadership on an ongoing Tier 1 environmental study and the pending litigation, the future of the Castaic transfer and, indeed, the broader Monterey Amendments, cannot be assumed.	
49	PCL/CPA	The Draft EIR's assertion that the Settlement Agreement "did not change the substance of the Monterey Amendments" is also misleading. Although those amendments are part of the "Monterey Plus" project, the agreement also eliminates misleading references to "entitlements" from the state contracts and adds a new provision to the contracts imposing water reporting requirements. The agreement also imposes a host of other substantive changes in State Water Project operation that should be described in the Final EIR.	Section II of the Monterey Amendment Settlement Agreement authorizes the continued administration and operation of the SWP and Kern Water Bank in accordance with the Monterey Amendment and the amendment attached as Exhibit A to the Settlement Agreement. As the recitals and Section 8 of the Exhibit A amendment explains, the intent of most of the Exhibit A changes was "solely for clarification purposes" and to "not in any way change the rights, obligations or limitations on liability of the State or the District." The only other provision in the Exhibit A amendment was the addition of Article 58, which provides for biennial reporting by DWR of the delivery capability. Article 58 is a procedural, and not a substantive change. None of the Exhibit A changes or other provisions of the Settlement Agreement appear to alter the environmental impacts of the Monterey Amendment. In any event, the Monterey Amendment is an entirely different project from that analyzed in the DEIR for the Project. Under the Monterey Amendment Settlement Agreement, the Monterey Amendment remains in place, including Article 53 that provides for permanent agricultural to urban contractor transfers of 130,000 acre-feet of Table A Amounts from Kern County. This Project was a transfer that fell within that 130,000 acre-feet Table A Amount, but the Project could equally occur under Article 41 of the State Water Project contract without the Monterey Amendment in place. Section III(E) of the Settlement

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49 (cont)	PCL/CPA		Agreement confirms that the environmental analysis for this Project is subject to the jurisdiction of the Los Angeles County Superior Court, the venue for the *Friends I* case, and is not subject to the jurisdiction of the Sacramento County Superior Court, the venue for the challenge to the prior Monterey Amendment Program EIR.
50	PCL/CPA	Castaic's refusal to await DWR's "Monterey Plus" EIR would fatally compromise its ability to identify alternatives to the proposed transfer that might maximize its benefits and minimize its environmental impacts statewide prior to rendering the transfer a *fait accompli*. DWR's EIR will programmatically address Castaic's transfer in the context of statewide contract amendments. A major issue requiring assessment in that document will be the possible *alternative* dispositions of the 41,000 acre feet of Table A amounts to serve other uses. To list several possible examples, the alternative uses subject to statewide analysis might include ecological restoration, urban infill development in Los Angeles or San Diego, and relief from cutbacks of Colorado River deliveries in excess of the California's 4.4 million acre-feet in annual entitlement. (See *Arizona v. California* (1964) 376 U.S. 340 (Colorado River); fn. 7, *supra* p. 16).) In short, legally adequate assessment of these issues under CEQA will require DWR's "statewide perspective" rather than the provincial experience of a local water agency, and demands recognition that this transfer is an overall part of the Monterey program. (*Friends I*, 95 Cal.App.4th at p. 1384.)	Please refer to the Master Response. The comment misconstrues what the Monterey Amendment Settlement Agreement states regarding analysis of the Project in DWR's new Monterey Amendment Program DEIR. Section III(C)(4) of the Monterey Amendment Settlement Agreement states that DWR will analyze the potential environmental impacts of the Project as they relate to the potential environmental impacts of approving the Monterey Amendment. Thus, DWR's analysis of the Project in the new Monterey Amendment Program DEIR will be included as part of a broader analysis of past and future permanent transfers of Table A Amounts. But DWR's analysis of the Project impacts will not constitute the EIR for the Project and is not required to serve as a Tier 1 EIR for the Project. Section III(E) of the Monterey Amendment Settlement Agreement, which recognizes that the Los Angeles County Superior Court in *Friends* I has jurisdiction over this Project, serves to limit the analysis required by Section III(C)(4). The comment appears to confuse the appropriate environmental analysis of the Monterey Amendment with the appropriate analysis of the Project that is the subject of the DEIR. An EIR need only consider alternatives to the project described and analyzed in that EIR. The Court of Appeal in *Friends I* ordered the environmental review for the Project to be conducted by CLWA under the jurisdiction of the Los Angeles Superior Court. The Monterey Amendment Settlement Agreement acknowledges the jurisdiction of that court over the EIR for this Project. The alternatives suggested for analysis by this commenter are more appropriate suggestions for consideration in DWR's preparation of the DEIR for the Monterey Amendment, to the extent that the alternatives are

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50 (cont)	PCL/CPA		feasible or acceptable. None of the alternatives suggested by the commenter fit within the criteria for alternatives to the Project. None of the suggested alternatives would feasibly attain most of the basic objectives of the Project as required by CEQA. The objectives of the Project are to augment CLWA's Table A Amount to meet the water demands of existing users and anticipated future growth and to provide a means of delivery for the augmented water supplies. The DEIR includes analysis of a "No Project" alternative and a reasonable range of alternatives that will foster informed decision-making and public participation, including those alternatives that would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project. As noted elsewhere in these responses to comments, DWR has provided its statewide perspective to the DEIR in DWR's role as a responsible agency. DWR is charged with analyzing the potential environmental impacts of the Project and other transfers as they relate to the potential environmental impacts of approving the Monterey Amendment because DWR has agreed to prepare its new Monterey Amendment Program EIR in accordance with the provisions of the Monterey Amendment Settlement Agreement.
51a	PCL/CPA	The Draft EIR's water supply assessment (especially in sections 3.15 and Appendix D) make highly problematic assumptions about state water reliability,	Please refer to response to comment 25.
51b	PCL/CPA	as well as the availability of "surplus" water under Article 21 of the state project contracts.	SWP surplus water is SWP water that can be made available to Contractors when water and capacity are available in excess of SWP storage needs and Table A supplies. The different types of surplus water, and surplus water terminology, both with and without the Monterey Amendment are described in Table A-2 of Attachment A to Volume II of the FEIR. This table is a sub-set of Table 3.15-3 on page 3.15-8 of the DEIR. The uses of surplus water in the DEIR's water supply assessment are described below for each category of surplus water. As described below, the assumptions for surplus water

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51b (cont)	PCL/CPA		made in the water supply assessment are consistent with the SWP Contracts, SWP operations and the availability of surplus water, and both WRMWSD's and CLWA's ability to take delivery of surplus waters. **Scheduled Surplus Water** Scheduled surplus water was included only in the With Article 18(b) Implemented allocation scenario. It was included in this scenario because with the reduction in Table A Amounts under that scenario, scheduled surplus water would have been available on a scheduled or more dependable basis similar to Table A supplies (i.e., Contractors could schedule deliveries of scheduled surplus water in advance, in a manner similar to their annual Table A requests). Because the overall availability of SWP supply is independent of the way water is allocated among Contractors, it was assumed that the SWP supply would remain the same under this scenario. However, because total Table A Amounts would be proportionally reduced to the "minimum project yield," there would be frequent occasions when water above this minimum project yield amount would be available as part of allocated supplies. For example, if DWR anticipates the available SWP supply to be 3.0 MAF in a particular year, and if all Contractors' Table A Amounts were reduced to a hypothetical new minimum project yield of 2.0 MAF, then the 1.0 MAF of available SWP supply above that minimum project yield could be scheduled, in advance, for delivery to Contractors similar to Table A supplies. This is consistent with the SWP Contracts, SWP operations and the availability of surplus water, and both WRMWSD's and CLWA's ability to take delivery of this water. Scheduled surplus water is assumed to be unavailable under the Without Monterey Amendment and With Monterey Amendment allocation scenarios because (1) for the Without Monterey Amendment allocation scenario, scheduled surplus water was generally available only during the early years of the

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51b (cont)	PCL/CPA		SWP, when total Contractor demands were low, and has not been available since the mid-1980s due primarily to increasing Contractor demands for Table A supplies, and (2) for the With Monterey Amendment allocation scenario, the category of scheduled surplus water was eliminated as part of the Monterey Amendment. This is consistent with the SWP Contracts, SWP operations and the availability of surplus water, and both WRMWSD's and CLWA's operations and facilities. **Unscheduled Surplus Water and Article 21 Water** As described on page 3.15-36 lines 33-40, unscheduled surplus water/Article 21 water was not included in the water supply analysis for any of the three water allocation scenarios. This was because unscheduled surplus water/Article 21 water is not available on a routine or predictable basis, and is generally only available for short periods of time during low demand months when most Contractors have a limited ability to use it. While unscheduled surplus water/Article 21 water is available under the SWP Contracts and SWP operations, it is only periodically and temporarily available and is not a reliable supply. Not including this water is consistent with WRMWSD's and CLWA's operations and facilities because both agencies have limited capacity to take delivery of this water when it is available (as compared to a few other SWP Contractors that have large surface and/or groundwater storage facilities and can take delivery of large amounts of unscheduled surplus water/Article 21 water when it is available and store the water for future use).
51c	PCL/CPA	DWR's record of deliveries to contractors under the SWP figured centrally in the Third District's conclusion that the 1995 EIR must be set aside. (See *PCL v. DWR*, 83 Cal. App. 4th at 908 (noting the "huge gap between what is promised and what can be delivered" and that "actual, reliable water supply" is "in the vicinity of 2 to 2.5 MAF of water annually" rather than the 4.23 MAF of Table A "entitlements"); 83 Cal. App. 4th at 913	CLWA has obtained and included in the DEIR a frank assessment of DWR's record of deliveries. In the DEIR, CLWA shows a record of historic SWP deliveries for 1990 through at least 2001, showing total SWP deliveries, SWP deliveries to WRMWSD, and SWP deliveries to CLWA (see Tables 3.15-2, 3.15-5, and 3.15-8, respectively). In addition to showing actual acre-feet of deliveries, these tables show the SWP allocation

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51c (cont)	PCL/CPA	(average actual deliveries under the SWP from 1980-1993 "were around 2.0 MAF"). A frank assessment of DWR's record of deliveries is essential to a wide variety of issues addressed in the EIR, including the no project alternative as well as the assessment of hydrologic impacts, land use and planning impacts, growth-inducing impacts, and cumulative impacts. Anticipating the importance of this issue, the Monterey Settlement Agreement required periodic SWP reporting on the reliability of SWP deliveries.	percentage for each year. These allocation percentages show the percentage of Contractors' requested Table A Amounts the SWP was able to meet. For example, while total SWP deliveries appear low in 1998, the allocation of 100 percent indicates that Contractors' SWP requests were completely met. Low deliveries that year were due to 1998 being a very wet year, which reduced Contractor demands for SWP water. Therefore, the low deliveries in 1998 were limited by demand, not by supply. In 2001, total SWP deliveries were only slightly less than in 1998. However, the allocation percentage that year was only 39 percent, indicating that SWP supplies were only able to meet 39 percent of Contractors' requested Table A Amounts. Clearly, the low SWP deliveries in 2001 were constrained by the amount of available supply. The *PCL* and *SCOPE* cases (*Planning & Conservation League v. Department of Water Resources* [2000] 83 Cal.App.4th 892 and *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* [2003] 106 Cal.App.4th 715) do not require CLWA to prepare a study or model independent of DWR studies and models. Several commenters on the SWP Delivery Reliability Report questioned the reliability estimates in the report, based in part on the argument that historic deliveries were much lower than the report's estimates. However, at least one of these commenters (Dennis O'Connor) acknowledges in his comments that "while many try to compare the modeled 2001 reliability against historic SWP operations, it is not really appropriate for much of the period" (O'Connor 2002). This is because Contractors' contractual Table A Amounts and requests for SWP water were in a build-up phase during much of this period. Table A Amounts, which limit how much SWP water a Contractor may request, reached a maximum in 1990 for most Contractors; and delivery requests for most Contractors have only recently increased up to their Table A Amounts. In addition, the regulatory rules governing the Delta and SWP

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51c (cont)	PCL/CPA		operations have become more stringent over the years, with most of the current rules issued in 1995. Therefore, as O'Connor notes in his comments, "comparing modeled 2001 reliability against actual deliveries is somewhat misleading much beyond the last few years" (O'Connor 2002). DWR has responded to the comments of O'Connor and others on this issue (see letter from DWR to Senator Michael Machado dated March 11, 2003; DWR 2003c). In addition to providing information on historic SWP deliveries, the DEIR includes a detailed analysis of indirect and growth-related impacts of the Project (see Chapter 5). The DEIR also provides a summary of the effects of the Project with regard to local and regional Plans and Policies (see DEIR Chapter 4).
51d	PCL/CPA	The Draft EIR uses dubious modeling assumptions to claim an average of annual deliveries exceeding the historical record by approximately a million acre-feet. (See DEIR, 3.15-7.)	Please refer to Responses to Comments 25 and 51c.
51e	PCL/CPA	In part, Castaic's EIR relies upon dated studies employing an outmoded model (DWRSIM).	The differences between DWRSIM and CALSIM II model study results were considered and found to be so minimal as to not result in changes to the environmental impact determinations in this DEIR. Moreover, use of the slightly higher SWP supplies associated with the use of DWRSIM resulted in DEIR consideration of the worst-case scenario; i.e., the scenario that would result in greater direct and indirect impacts in both the CLWA and WRMWSD service areas. Direct impacts would remain less than significant regardless of the modeling tool used, and indirect impacts from growth-related development would remain significant regardless of the modeling tool used. No new environmental impacts would result from the use of CALSIM II instead of DWRSIM. As described on page 3.0-5 line 10 through page 3.0-6 line 27, page 3.15-31 line 15 through page 3.15-32 line 2, in Appendix D section 2, and in Responses to Comments 4 and 25, the environmental impact analysis was conducted using DWRSIM because these studies were consistent with the 1998 "pre-

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51e (cont)	PCL/CPA		Project" environmental setting used in the DEIR. Additionally, at the time the analysis was conducted for the DEIR, the DWRSIM studies from the CALFED Bay-Delta Program EIS/EIR provided the best available estimates of SWP deliveries, and were the most comprehensive, well-established, publicly available model studies available. The two DWRSIM studies used received extensive public and technical review as part of the CALFED process and formed the basis for the SWP and CVP water supply analysis for the CALFED Bay-Delta Program EIS/EIR. Once DWR released the CALSIM II studies conducted for DWR's SWP Delivery Reliability Report, the SWP deliveries from these studies were compared with the results from the DWRSIM studies used for this DEIR. While the modeling tool itself has changed, the criteria used in the models to simulate SWP operations have not significantly changed. The delivery results of DWR's more recent assessment of SWP reliability in its SWP Delivery Reliability Report using CALSIM II are comparable to the results of the DWRSIM studies (see Table A-3 of Attachment A to Volume II of the FEIR and Appendix D of the DEIR, Section 2.2 for a comparison of these model study results). As shown in Table 3, the results of the two modeling studies are similar; however, in general, the estimates of SWP supplies associated with the 41,000 AF of Table A Amount based on the SWP Delivery Reliability Report and CALSIM II are somewhat lower than the amounts under the DWRSIM studies for the comparable allocation scenario. Therefore, from an environmental impact assessment standpoint, the DEIR analyzed the worst-case scenario; i.e., the scenario that would result in greater direct and indirect impacts in both the CLWA and WRMWSD service areas. The reasons for these differences were discussed in the DEIR on page 3.15-31 line 29 through page 3.15-32 line 2 and are briefly summarized below: • The results in this EIR account for the variable demand used by DWR in its model studies (consistent with the way DWR actually has allocated water), while the results

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51e (cont)	PCL/CPA		as presented in DWR's delivery reliability report do not (i.e., in DWR's report, deliveries are presented as a percentage of Table A, regardless of the lower demands used in some years of the study); and, • The "existing" case in this EIR is based on 1998 SWP demand conditions, while the "existing" case in DWR's report is based on higher 2001 SWP demand conditions. The 2001 total SWP demand is higher than the 1998 demand due to increased M&I Contractor demands. A higher total demand can result in some years in less water being allocated to the same Table A Amount, so the higher 2001 demand results in a slightly lower quantity of water associated with the 41,000 AF of Table A Amount.
51f	PCL/CPA	To move beyond DWRSIM's obvious deficiencies, the Draft EIR also makes unwarranted extrapolations from DWR's 2003 reliability report.	The commenter refers to "unwarranted extrapolations from DWR's 2003 reliability report," but provides no further information regarding any specific "extrapolations" or what is "unwarranted." As discussed in more detail in Response to Comment 25, the SWP Delivery Reliability Report was used in the DEIR only to estimate SWP supplies for the current environmental setting. The pre-project 1998 environmental baseline and the project environmental impact analyses were based on separate model studies (DWRSIM model studies conducted by DWR for the CALFED Bay-Delta Program EIS/EIR), and not on model studies from the SWP Delivery Reliability Report. While the derivation of supply estimates in the DEIR for the current environmental setting is based on data from the SWP Delivery Reliability Report, the derivation method used is straightforward and was performed just as suggested by DWR in that report. In that report, DWR presents the probability of being able to meet total SWP deliveries as a percent of full Table A Amounts. DWR suggests that this information can be directly applied to individual Contractors by multiplying the total delivery percentages by an individual Contractor's Table A Amount. In the DEIR, supply estimates were derived for

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51f (cont)	PCL/CPA		three hydrologic conditions. Estimates of total SWP supplies under each of these hydrologic conditions were taken directly from Table B-3 of DWR's SWP Delivery Reliability Report. The delivery percentage under these conditions were determined by dividing these total SWP deliveries by total Table A Amounts of 4.133 million AF, and CLWA's share of that supply was determined by multiplying this percentage by CLWA's Table A Amount of 95,200 AF. For example, the average supply available to CLWA was estimated by starting with the average total SWP supply from DWR's Table B-3, which is 2.962 million AF. Dividing this supply by the total Table A Amounts of 4.133 million AF results in a delivery percentage of 71.7 percent. Multiplying this percentage by CLWA's Table A Amount of 95,200 AF results in an estimated average supply to CLWA of 68,300 AF. Supply estimates for the hydrologic conditions based on specific hydrologic years were derived in the same manner, starting with total SWP deliveries from DWR's Table B-3 for those specific years. These limited extrapolations, which were conducted just as suggested by DWR, are not "unwarranted." None of the environmental impact analyses performed for the DEIR were based on the particular data that were derived from the SWP Delivery Reliability Report.
51g	PCL/CPA	That report has faced significant controversy regarding its overall conclusions and the computer modeling that underpins its reliability projections. For instance, the reliability report constructs delivery probability charts for the SWP for two years, 2001 and 2021. As noted by several commenters, the median delivery identified in the report (3.297 MAF) is on the order of 50% greater than the actual record of historic deliveries to the SWP as reported by DWR. A detailed analysis by Dennis O'Connor for the California Research Bureau, referenced in the comment letter of Senator Machado [fn2], indicates that the draft reliability report provides no credible explanation for this disparity. O'Connor's analysis concludes that among other problems, the results are inconsistent with previous estimates	Please refer to Response to Comment 25.

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51g (cont)	PCL/CPA	and models, recent deliveries were lower than the modeled 2001 conditions, and 2021 does not reflect any growth in upstream consumptive use. His assessment also observes that CALSIM II is not calibrated or otherwise verified, and that the draft reliability report does not use the CALSIM II model as designed. Because the draft reliability report appears to overstate the supply reliability of the SWP, O'Connor's analysis warns that DWR's assessments of reliability should not replace the "paper water" problem with a new, simulation-based "cyber water" problem. Other comment letters, notably those of Robert C. Wilkinson, Peter Gleick, and Arve Sjovold, reach similar conclusions. (Please see http://swpdelivery.water.ca.gov/ and comments submitted regarding the instant EIR by Arve Sjovold.) [2][Fn 2 from letter]: See Appendix E page E-94 at http://swpdelivery.water.ca.gov/SWP%20Delivery%20Reliability.final.2002.pdf.	
51h	PCL/CPA	Controversy over the reliability report, on which this EIR relies, led to review of CALSIM II modeling by an External Review Panel including some of the world's leading experts on water resource systems. Their report, "Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California" was released on December 4, 2003. The Panel raised serious concerns regarding the application of the model to predicting reliable deliveries, especially as those deliveries related to particular contractors. Many of the Panel findings agree with concerns we have articulated throughout the Monterey EIR process. Notably, the Panel found that: • "Examination of the report "CALSIM II Simulation of Historical SWP/CVP Operations,' DWR (2003) indicates that the current formulation of CALSIM II: Overestimates water deliveries to SWP and CVP contractors..." (p. 11) • "Most successful applications of optimization [CALSIM's type of computer model] ...have calibrated	Please refer to Response to Comment 25.

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51h (cont)	PCL/CPA	• their objective functions…so that the model results correspond to what actually happens or would happen under a particular hydrologic and demand scenario…It does not appear that such a calibration of the objective function weights in CALSIM has yet been completed." (p. 4) • "…currently many users are not sure of the accuracy of the results. A sensitivity and uncertainty prediction capability and analysis is needed" (p. 8) • "In our opinion, CALSIM II has not yet been calibrated or validated for making absolute predictions values." (p. 9) • Regardless of how possible it is to match the model closely with observed behavior, statistics on the accuracy of the calibration run should be supplied to users to enable them to gauge the likely errors involved with using the model output. (page 9) • In CALSIM II, "Groundwater resources are assumed infinite, i.e., there is no upper limit to groundwater pumping." (p. 8) • "Realistic upper bounds to pumping from any of the aquifers represented in the model need to be developed and implemented." (p. 27) • "In general, the level of representation of groundwater in CALSIM II is not reasonable from the point of view of the reviewers." (p. 27) • "In many cases, it appears that water use and other hydrologic data inputs to CALSIM II are based on data collection and analyses that took place during the 1960's when DWRSIM and PROSIM were being constructed. It is important to ensure that data used for CALSIM II are up-to-date and consistent with the best current information." (p. 20). • In general, it appears that the developers of CALSIM II do not have a clear idea of how to define the scope of CALSIM II use and many of its applications are evolving in a reactionary manner. Model developers	

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51h (cont)	PCL/CPA	should identify clearly the desired uses for CALSIM II and then determine acceptable approaches for satisfying those desires. Developers should seek to improve data accuracy and overcome unrealistic assumptions to improve the confidence in model results. (page 25)	
52	PCL/CPA	Furthermore, as numerous CEQA cases have consistently held, local agencies such as CLWA have an independent responsibility to adequately assess reliability. Castaic therefore, and cannot rest its analysis solely on its old DWRSIM studies and the DWR Reliability Report.	The *PCL* and *SCOPE* cases (*Planning & Conservation League v. Department of Water Resources* [2000] 83 Cal.App.4th 892 and *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* [2003] 106 Cal.App.4th 715) do not require CLWA to formulate an independent model to assess SWP supply reliability. DWR is the state agency that manages and operates the SWP. It is also the state agency responsible for development and periodic updates of the statewide water plan. As such, DWR is in the best situation to have the SWP-specific knowledge and operational experience necessary to estimate SWP supply reliability, as well as knowledge of the broader statewide water user information affecting future SWP reliability. The modeling tools that DWR has developed are based on this extensive experience and knowledge. CLWA and other SWP Contractors have participated in extensive discussions with DWR regarding the development, use and adequacy of the DWRSIM and CALSIM II models. While recognizing that no model is perfect, DWRSIM, the DWRSIM studies conducted for the CALFED Bay-Delta Program EIS/EIR, CALSIM II, and the CALSIM II studies contained the SWP Delivery Reliability Report provide the most comprehensive and accurate assessment of SWP reliability available. Additionally, in their comment letter on the DEIR, DWR stated that the DEIR "adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations." (See Response to Comment 5) The SWP is a very complex water system. Its operations are governed by river flow requirements, Delta regulatory and

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52 (cont)	PCL/CPA		water quality requirements, and facility constraints; its operations must be coordinated with the U.S. Bureau of Reclamation's (USBR) operation of the comparably complex Central Valley Project system; and all of these operations are affected by numerous other water users upstream of the Delta. Added to this system complexity is the more typical water supply uncertainty due to hydrologic variability. SWP supplies to an individual SWP Contractor are further affected by the demands of the other Contractors. Given the complexity of this entire system, CLWA relies on DWR to provide the best estimate of SWP supply reliability. Also, as directed by DWR, the SWP Contractors must factor their other available water supplies into their assessments of SWP supply reliability.
53	PCL/CPA	Without adequate review, the transfer would place available water in one of the places in California most likely to promote urban sprawl and destroy environmental habitat The Draft EIR's growth inducement section (Chapter 4) fails to appreciate the significance of this transfer as a linchpin of sprawl development. Following the *PCL* decision and through the Monterey EIR, the state has a responsibility and, as noted above is the only entity with the requisite resources and purview, to determine the environmental impacts, particularly including induced growth impacts, of transfers such as the 41,000 acre-foot transfer. Local agency analysis of these impacts prior to the Tier I Monterey EIR impermissibly and imprudently ignore the state's role in considering alternatives to that transfer which would, for example, meet existing shortfalls in developed Southern California dependent on diminishing Colorado River supplies, while avoiding "dumb growth" in the undeveloped frontier at the Los Angeles-Kern County border.	Please refer to the Master Response and to Comments 37 and 50 and the Responses thereto. CLWA has no jurisdiction over land use planning. Nonetheless, Chapter 4 of the DEIR analyzes the potential indirect (growth related) impacts of the Project. CEQA does not require CLWA to speculate that land use plans might lead to urban sprawl or destroy habitat. CEQA does not require CLWA to analyze growth inducing impacts that are not reasonably foreseeable. City and county land use plans are an appropriate benchmark for what constitutes a reasonably foreseeable impact. Any new project that proposes to rely upon the transferred Table A Amount will have to satisfy CEQA requirements to describe its environmental impacts, provide public notice and information, and mitigate its impacts. The Project, by its nature, does not create the kinds of impacts described in this comment, and it will be the job of appropriate planning agencies to ensure that future land use decisions do not promote urban sprawl or destroy environmental habitat. The DEIR analyzes the indirect environmental impacts of the Project, acknowledging that firming up and augmenting local water supplies will remove one obstacle to growth. CLWA has a responsibility to provide water for future

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53 (cont)	PCL/CPA		population and housing needs projected in local general and area plans to the extent feasible and consistent with law. The cities and counties have been charged by the California Legislature to govern issues of urban growth while addressing the environmental concerns resulting from growth. To that end, local agencies with land use authority have adopted general plan documents to appropriately plan for and mitigate the environmental impacts of future development within their respective jurisdictions. Each of the local general plans has a final environmental document that analyzes potential environmental impacts of the growth described in the document, and proposes mitigation measures for those impacts. The *PCL* decision concluded that DWR was the proper lead agency for a project that impacted SWP facilities, contracts and operations statewide. The *PCL* decision did not hold that if a project's environmental impacts relate to statewide issues that a state agency should be the lead agency. The key reason for DWR being designated by the *PCL* court as the appropriate lead agency was that the Monterey Amendments involved changes in the operation of statewide infrastructure, substantive changes in SWP contracts statewide and disposition of state-owned land. If *PCL* stands for the proposition that state agencies must be the lead agency where an environmental issue is a statewide issue, such as urban sprawl, then it would require state agency review of virtually every major local development project and would eviscerate CEQA statutory and regulatory provisions that require local lead agency environmental review. The new Monterey Agreement Program EIR will not analyze in detail growth inducing impacts on the Southern California region, and on the CLWA service area in particular, as suggested by the commenter. A programmatic EIR by its nature will focus on wider programmatic impacts of the Monterey Amendment, which impacts may include growth

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53 (cont)	PCL/CPA		inducing impacts in the urban areas of Southern California that receive permanent Table A transfers. Further, with respect to the suggestion that the DEIR should consider alternatives to the 41,000 acre-foot transfer, those are alternatives more appropriately suggested to DWR for consideration as it prepares its new Monterey Amendment Program DEIR, to the extent that the alternatives are feasible or acceptable. Those alternatives are not appropriate in the analysis of impacts of the Project.
54	PCL/CPA	Rather than squarely confronting the scope and mitigation of growth inducement, the Draft EIR improperly defers the issue to subsequent decisions of local agencies on individual projects. A "chicken and egg" problem emerges here. As reflected in PCL's comment letters on specific projects, local agencies are relying upon *Castaic* to inform them of the reliable water available to support specific proposed projects ranging in scope from small developments to Newhall Ranch. The Draft EIR is entirely speculative in its assumption that project-related growth can be mitigated to insignificance. This issue cannot be credibly reviewed in isolation from the statewide Monterey EIR.	Please refer to the Master Response and to Comments 12, 22, 23, and 53 and the Responses thereto. Please note that CLWA has worked closely with DWR (see Comments 2 through 6 and the Responses thereto) to ensure that the approach to analyzing impacts of the Project will be consistent with the approach taken by DWR in preparing its Monterey Amendment DEIR. CLWA's analysis of the indirect impacts of the Project, associated with growth, acknowledges that environmental impacts will occur and relies upon the local land use agencies to perform their analysis and mitigation of future projects consistent with CEQA. CLWA's reliance on local land use agencies is consistent with requirements by the California Legislature that the local land use agencies include a water supply assessment as part of its environmental impact analysis and mitigation for development projects. (See Water Code §§ 10910, 10911.) Contrary to the suggestion in the comment, CLWA does not assume that project-related growth can be mitigated to insignificance. CLWA has no land use regulatory authority and must rely upon local agencies to exercise their authority in a manner consistent with all applicable laws, including CEQA. CEQA does not require CLWA to implement mitigation measures that are outside CLWA's jurisdiction and that fall within the jurisdiction of local land use agencies. Each of the general and area plans adopted by land use agencies within CLWA's service area underwent CEQA review prior to adoption. Those environmental documents are final and not subject to challenge. This DEIR has relied upon those plans and their mitigation measures approved under

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54 (cont)	PCL/CPA		CEQA in projecting and addressing indirect growth inducing impacts of the Project.
55	Public Citizen	Public Citizen, a consumer rights organization that has been working to strengthen public oversight over water, urges Castaic Lake Water Agency to refrain from conducting the environmental review of permanent transfers of State Water Project Table Amounts. We believe that is unlawful for CLWA to be the lead agency under CEQA for this project because the Department of Water Resources is currently conducting its statewide review of the "Monterey Plus" Project. Please refer to the Sierra Club's August 15 letter for further reasoning why the DWR must be the lead agency.	Please refer to the Master Response.
56	Public Citizen	We request that this document be withdrawn and that the document not be re-submitted for circulation until the Monterey Agreement EIR is completed and certified.	Please refer to the Master Response.
57	SCOPE	As we stated in our NOP comments, we believe that Dept. of Water Resources must be the lead agency for the following reasons: ▪ The published appellate decision in PCL v. DWR, 2000 found that the Dept. of Water Resources should be the lead agency for this review. ▪ DWR is best suited to ensure that widespread notification of interested parties occur. ▪ DWR is best suited to recognize environmental impacts that might be incurred to a wide spread area of the state as a result of this water transfer and to properly assess such impacts. DWR, in its capacity as operations manager of the SWP, will be acquainted with other state projects that would affect or be affected by this transfer.	Please refer to the Master Response. The published decision in the *PCL* case did not concern this Project and made no finding with respect to the environmental review for this Project. The *PCL* case involved a programmatic EIR affecting the entire SWP system and all of its contractors. This Project involves a project EIR for a transfer between two SWP contractors. DWR and WRMWSD participated in helping CLWA identify parties to whom notice was given. The areas affected by the Project are the receiving and sending areas associated with this 41,000 acre-feet transfer. DWR is not the agency best suited to provide notice to those areas or to analyze potential site-specific impacts in those locales. A local agency has more knowledge of those parties who should receive notice and more information regarding potential localized impacts. As to those areas, CLWA has provided notice as required by CEQA, and CLWA can properly analyze the potential Project impacts in those areas. Notice to other areas under the jurisdiction of DWR is not necessary or required by CEQA. CLWA made a concerted effect to identify and notify potentially interested parties regarding this DEIR,

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57 (cont)	SCOPE		including parties who are outside CLWA's and WRMWSD's service areas, but who might have an interest in the DEIR and the Project. With respect to DWR knowledge of State projects that may have an effect on the Project, DWR's knowledge has been shared with CLWA in DWR's capacity as a responsible agency. See Comment 6 and the response thereto. With regard to WRMWSD knowledge of WRMWSD projects and localized impacts, WRMWSD's knowledge has been shared with CLWA in WRMWSD's capacity as a responsible agency.
58	SCOPE	Changes to water quality including increased chlorides, nitrates or other constituents of SWP project water, and how these constituents will affect the new TMDL requirements approved by Regional Water Quality Control Board approved subsequently to the previous EIR, should be discussed and mitigated. Increased pollution from Trihalomenthanes in public water supply due to higher percentage of reliance on SWP project water as main source should be disclosed. Trihalomenthanes now exceed the new MCL standards after filtration by CLWA due to the filtration method currently used.	The Project does not contemplate or cause a change in regulatory water quality compliance levels. The Project does not include or cause an increase in contaminant levels of Castaic's SWP water deliveries. New TMDL requirements approved by the Regional Water Quality Control Board are not part of or caused by the Project. As shown by DEIR Table 3.15-4 and as discussed on pages 3.15-8 through 3.15-9 and 3.15-25, the average water quality for SWP deliveries to CLWA is well below MCL (Maximum Contaminant Level) standards for chlorides, nitrates and other constituents. As shown by DEIR Table 3.15-10 water quality test results for drinking water within CLWA, including both SWP water and groundwater supplies, show typical values well below MCL standards for identified constituents, including chloride, nitrate and trihalomenthanes (THMs). The issue of chloride concentration deals with indirect impacts to local surface water from water discharges after use. As set forth on DEIR pages 3.15-24 and 3.15-25, the primary cause for high chloride concentration is water softeners. As DEIR page 3.15-25 notes, Sanitation Districts of Los Angeles County has adopted an ordinance that prohibits the installation and use of self-regenerating water softeners in the Santa Clarita Valley.

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58 (cont)	SCOPE		As DEIR Section 4.2.15 states, because all new development will be regulated by that ordinance, indirect chloride loading impacts to local surface water will be mitigated to a less than significant level. With respect to THMs, which can be produced under certain conditions by water treatment processes using chlorine, CLWA's Rio Vista Water Treatment Plant uses a treatment process that utilizes both chlorine and ozonation, and is in compliance with THM MCL standards. As noted in DEIR Section 6.3.3.1, CLWA is upgrading the Earl Schmidt Filtration Plant to comply with current and proposed water quality regulations. The Earl Schmidt Filtration Plant and the Rio Vista Water Treatment Plant will be in compliance with water quality standards by June 2005.
59	SCOPE	This document relies on transfers to the Semi-Tropic Water Banking project for supply reliability, but does not address potential water quality issues that could preclude groundwater from being pumped back into the aqueduct. This is an issue that would be addressed if DWR were the lead agency. We incorporate by reference all contracts between, DWR, CLWA, and Semitropic, particularly the pumpback agreements and sections of the EIR indicating high arsenic and radon levels in the Semi-tropic groundwater basin. There is no up to date water quality data from the groundwater in the Semi-Tropic area included in this report. If the Semi-tropic Water Storage program is going to be relied upon to increase water supply reliability, then water quality data should be made available for review.	The DEIR does not rely on either the 2002 or the 2003 CLWA Water Banking projects in its water supply reliability analysis. DEIR Sections 3.0 and 3.15 make clear that the DEIR relies on two 1998 studies using the DWRSIM model to assess water supply reliability. Those studies took place prior to the water banking projects. The 2002 and 2003 water banking projects are short term and are separate and independent from the Project. They are not intended to, and do not, provide long-term water supply upon which new development can rely. Those water banking projects are not transfers as suggested in the comment; each constitutes a temporary one-time storage of prior SWP deliveries to CLWA, as described in DEIR Section 6.3.3.1. This comment seeks to improperly apply to the Project the issue of potential water quality impacts of pump-back provisions for the water banking projects despite the finality of the environmental review for those two water banking projects. The 2003 water banking project negative declaration became final without any challenge having been filed within the statute of limitations period. The 2002 water banking project has already been litigated and the Ventura County Superior Court judgment in favor of CLWA is now on appeal.

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59 (cont)	SCOPE		The issue of groundwater quality impacts resulting from pump-back provisions was raised in the *Network* case; the trial court concluded that the negative declaration adequately analyzed the issue. As the July 14, 2004 Ventura Superior Court decision in *Network* explained, "Petitioners contend that the initial study was inadequate, particularly in its water quality component. The delivery agreement between DWR, Castaic and the Kern County Water Agency requires that ground water re-introduced into the aqueduct must meet the terms of the Semitropic Turn-in Agreement (AR 13:2573), the net effect of which is that water must meet DWR's then current water quality criteria (AR 12:2248). As such, there is no potential for an outdated water quality standard to be applied." The *Network* case is presently on appeal. The Administrative Record in the *Network* case, which can be found at the CLWA Administrative Office, showed that the Semitropic groundwater does not contain levels in excess of drinking water primary MCLs or in excess of imported (secondary) SWP water quality standards. (See *Network* Administrative Record 1:138, 139, 140; Tables 5-11 & 5-12; 8:1542-43, 1542-43.) That Administrative Record showed that water pumped by Semitropic under its Groundwater Banking Program has met DWR water quality standards. (See *Network* Administrative Record 47:2501.) In addition, the 1994 Semitropic Groundwater Banking Project EIR, which also can be found at the CLWA Administrative Office, included information showing that the groundwater sub-basin used for water banking creates a barrier against and prevents poor groundwater quality migration. (See *Network* Administrative Record 400)
60	SCOPE	In conclusion, we request that this document be withdrawn, that the document not be resubmitted for circulation until the Monterey Agreement EIR is completed and certified, and that all parties whose groundwater may be impacted are properly notified when re-circulation occurs.	Please refer to the Master Response.

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61	Sierra Club	In the notice of preparation for this project, the Castaic Lake Water Agency announced its intention to move forward within its own separate environmental review of permanent transfers of State Water Project Table A Amounts. The Sierra Club and others commented at that time that such a procedure would violate state law, several court decisions and the Monterey Agreement Settlement to which CLWA is a signatory. As you are aware, in the Monterey settlement agreement, which Castaic signed, the court-identified lead agency, the Department of Water Resources. DWR is already conducting a statewide environmental review of a new "Monterey Plus" project. We strongly urge Castaic to refrain from moving forward with this separate project review, which is premature and likely to operate at cross-purpose with DWR's statewide review.	Please refer to the Master Response. Please see Responses to Comments 10 and 44.
62	Sierra Club	Moreover, even if Castaic continues to proceed now with its own separate EIR on this transfer, it lacks the institutional authority and statewide accountability to serve as CEQA lead agency under the Planning and Conservation League decision.	Please refer to the Master Response. The reference in *PCL* to institutional authority and statewide accountability refers to facilities and territory of DWR, both of which were issues pertaining to the Monterey Amendment EIR, not to this Project-specific DEIR.
63	Sierra Club	The Sierra Club re-iterates the following legal issues put forward in January 2004 comment letter by the Planning and Conservation League. These issues were either ignored or inadequately addressed in the Environmental Impact Report now under review: The "Monterey Amendments" Problem. Under Planning and Conservation League and two sequel decisions addressing Castaic's transfer of Table A amounts, "tiering" or otherwise relying on that EIR would render the approval decision vulnerable to CEQA challenge. However, any attempts by Castaic to conduct a separate Monterey review in advance of DWR's, or to rely on its own hypothetical non-Monterey analysis, would shift rather than solve this fundamental CEQA problem. In *Planning and Conservation League*, the Third District Court of Appeal found that Central Coast Water Agency's 1995 EIR	Please refer to the Master Response and to Comment 43 and the Response thereto. This DEIR does not undertake to conduct a separate Monterey Amendment review in advance of DWR's new Monterey Amendment EIR. Contrary to the assertion in the comment, the *SCOPE* decision did not address CLWA's characterization of the transfer. The *SCOPE* case addressed the assumption made in the environmental analysis of the development project, conducted by the County of Los Angeles as lead agency, that 100% of CLWA's Table A Amount would be available for delivery in all years, without discussing DWR models, historic SWP deliveries, or valid projections for future SWP delivery reliability. The court rejected this assumption, finding that it

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63 (cont)	Sierra Club	"failed to meet the most important purpose of CEQA, to fully inform the decision makers and the public of the environmental impacts of the choices before them." (83 Cal.App.4th at 920.) CCWA improperly served as lead agency in place of DWR and prejudicially failed to analyze the enforcement of the pre-Monterey permanent shortage provision, article 18(b), prior to its elimination from the State Water Project contracts. The appellate court found it unnecessary to adjudicate the other CEQA deficiencies identified by the Monterey plaintiffs after analyzing the defects in the lead agency selection and no project assessment, observing that "DWR, with its expertise on the statewide impacts of water transfers, may choose to address those issues in a completely different and more comprehensive manner." (*Id.*) The court also noted that the deficiencies in the 1995 EIR might be related to the "provincial experience" of CCWA. (*Id.*) In *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, the Second District Court of Appeal ordered the decertification of an EIR prepared by Castaic, supporting its Monterey Amendments-based attempt to permanently acquire 41,000 acre-feet of State Water Project entitlements (now "Table A" amounts) from the Kern County Water Agency and its Wheeler Ridge member district. The appellate court found that Castaic's EIR violated CEQA by "tiering" from the invalidated Monterey EIR. This ruling involved precisely the same transfer that Castaic now attempts to address in its separate 41,000 NOP. That piecemeal approach, however, is in apparent defiance of the expectation of the court of the appeal in the Friends case that Castaic would await "action by the DWR complying with the PCL decision." (95 Cal.App.4th at p. 1388.) Another recent Second District appellate decision, *Santa Clarita Organization for Planning and the Environment (SCOPE) v. County of Los Angeles* (2003) 106 Cal.App.4th 715, critically addressed	was not based upon adequate evidence in the administrative record, and thus concluded that the environmental analysis was inadequate. In contrast, this DEIR uses DWR modeling to project reliability of the Table A Amount transferred for this Project. With regard to the cases addressing interim use of the water from the Project, none of those cases are relevant to the present environmental review of the Project. Therefore, they do not constitute evidence of a significant environmental impact resulting from the Project. Please also refer to Responses to Comments 23, 39, 46, and 47.

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63 (cont)	Sierra Club	Castaic's characterization of the 41,000 acre-feet transfer. In that case, the County of Los Angeles violated CEQA in its review of the West Creek development project that erroneously assumed that 100 percent of Castaic's purported 41,000 acre-feet would be available in wet years and 50 percent in drought years. Drawing on Planning and Conservation League's assessment of the historic disparity between Table A amounts and deliverable water, the court concluded that the EIR failed to undertake a "serious and detailed analysis' of State Water Project supplies, and observed that "[t]he dream of water entitlements for the incomplete State Water Project is no substitute for the reality of actual water the SWP can deliver." (*Id.* at pp. 723, 717.) The EIR appears to confuse the legitimacy of Castaic's separate review with the distinct issue of the interim operation of the 41,000 acre-feet transfer pending further environmental review. (See Public Resources Code section 21168.9; 41,000 NOP p.1) The trial court did not enjoin interim operation, but left the issue open to further demonstrations that could lead to interim prohibition. Various cases addressing the interim use of this water for new projects prior to the completion of CEQA review are now working their way through the Court system. The 41,000 acre-feet transfer is not on the list of Table A amount transfers recognized as "final" in the Monterey Amendments settlement agreement (Attachment E.). Such transfers cannot proceed without new environmental analysis satisfying CEQA. (Monterey Settlement Agreement, section VII.A.) That settlement agreement, while recognizing that the remedial issue remains before the Second District, also requires DWR's "Monterey Plus" EIR to analyze the 41,000 acre-feet transfer, as well as other transfers facilitated by Monterey Amendments provisions, such as other agriculture-to-urban transfers referenced in Article 53 of those amendments. (Section II.C.4.) If Castaic rushes to finality by continuing its separate	

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63 (cont)	Sierra Club	environmental reviews at this stage, without the benefit of DWR's statewide "Monterey Plus" EIR, its perspective would mirror the "provincial experience" criticized in the *Planning and Conservation League* decision. (83 Cal. App. 3d at 918.) Such an attempt would also create a substantial risk of final decisions based on local analysis that may well prove inconsistent with DWR's "Monterey Plus" EIR.	
64	Sierra Club	If Castaic continues with this separate environmental review without awaiting DWR's assessment in the "Monterey Plus" EIR, it would violate CEQA's lead agency requirement based upon the well-established standards set forth in Planning and Conservation League v. Department of Water Resources. The court in that case could hardly have been clearer that DWR is the "state agency charged with the statewide responsibility to build, maintain, and operate" the State Water Project. (Id. At p. 906.; see also Wat. Code, section 12930, et seq.) Finding that DWR was the only entity with the requisite statewide perspective and expertise to serve as lead agency, the court found it "incongruous to assert that any of the regional contractors" could "assume DWR's principal responsibility for managing the SWP." (Id.) Similarly, the court-approved settlement agreement in Planning and Conservation League expressly recognizes DWR's duty as "the State agency responsible for administration and operation of the SWP," as well as its continuing obligation to comply with applicable requirements of CEQA and the Water Code. (Agreement, Section X.B.) The transfer guidelines disclosed to contractors under the settlement agreement also recognize the continuing need to comply with all existing legal requirements, including CEQA, and to honor the lead agency principles identified in the Third District's decision in the Monterey Amendments case. (Agreement, Attachment C.) These principles apply clearly to the proposed permanent transfers of the Table A amounts referenced in the state project contracts, which require DWR's approval and presuppose the	Please refer to the Master Response. The transfer guidelines referenced by the commenter are included in the Monterey Amendment Settlement Agreement and state that the State Water Project contractor, and not DWR, shall be the lead agency for a two party transfer such as this Project. (The two parties are CLWA, the transferee, and WRMWSD, a KCWA member agency.) Because the Project could occur as a pre- or post-Monterey Amendment transfer, the non-Monterey Amendments analysis contained in the DEIR is precisely what the Court called for in the *PCL* case. The analysis addresses what supplies would have been available based on the "agriculture first" cutbacks under pre-Monterey article 18(a). (See DEIR section 3.15.2, including Table 3.15-15.) As DWR notes in its Comment 5, DWR would have provided this same analysis if it had been preparing the DEIR. The quote from the *PCL* case about the necessity for DWR lead agency expertise on statewide impacts of water transfers refers to a statewide program affecting all water transfers, not to an isolated contractor to contractor transfer as in this Project. With respect to the issues of transferring water from agriculture to urban use raised by this comment, please refer to Responses to Comments 44 and 45. The identity of the CLWA manager is not relevant to the adequacy of environmental review in this DEIR.

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64 (cont)		application of Monterey. They also concededly require changes in the amount of supplies available to several water agencies, the "location and timing" of project deliveries, and changed utilization of the project's "conveyance and storage facilities." The transfers, which may require the fallowing of farmland in agricultural areas and are associated with proposed annexations linked to some of the more controversial development projects in California, demand the statewide authority and experience that only DWR can provide. Neither the summary references to other project EIRs nor a hypothetical "non-Monterey" analysis of the transfers can substitute for DWR's new assessment of the Monterey changes based on its statewide expertise and authority. For example, although transfers with DWR approval were available under Article 41 of the pre-Monterey State Water Project contracts, it is highly speculative whether agriculture-to-urban transfers such as this proposal would even have taken place without the Monterey Amendments, since those Table A amounts would have been subject to "agriculture first" cutbacks under pre-Monterey article 18(a). Read in context, such maneuvers would amount to little more than "straw man" argument considered and rejected in the Friends appeal. (95 Cal.App.4th at p. 1387.) Lastly, we note that the same General Manager of Central Coast Water Agency, Dan Masnada, under whose guidance, CCWA proceeded in violation of CEQA as the wrong lead agency, is now the general manager of Castaic Lake Water Agency. In that capacity, he is once again directing his agency with full knowledge of the consequences, to proceed as lead agency in violation of the law.	

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65	Sierra Club	Communities, local organizations and agencies that would have the most knowledge of impacts surrounding these statewide issues, the accuracy of the environmental disclosure and the viability of proposed mitigation, were not notified. Failure to notice and receive input from interested parties deprives the decision-makers of a full disclosure of all impacts and deprives the affected community or public agency of its right to provide information during the public process. The DWR would be better equipped to ensure that all parties are properly noticed and involved in the project review.	Please refer to the Master Response. This comment provides no specifics and therefore no evidence that proper notice was not given. Please also refer to the responses to Comment 57 and to Attachment B of Volume II of the FEIR.
66	Sierra Club	This EIR purports to analysis statewide issues, including but not limited to, impacts to agricultural lands, sensitive species, the accuracy of the DWR CalSim model, air quality, etc., but since the EIR was not circulated on a statewide basis, the public and agencies from other areas may not have been informed of the release of the document, and thus did not have the opportunity to review its accuracy.	Please refer to the Master Response. CEQA does not require that an EIR that considers statewide issues have a state agency as its lead agency or give notice to all agencies that may have some interest in those issues. Please refer to the responses to Comments 53 and 57 and to Attachment B of Volume II of the FEIR.
67	Sierra Club	Impacts to DWR facilities – Castaic Lake Water Agency cannot presume to be the lead agency for State Water Project facilities.	Please refer to the Master Response. This Project does not impact all or even a majority of SWP facilities. The Project's potential impacts are primarily locale-specific, occurring primarily in Kern County (the sending site) and CLWA's service area (the receiving site), with a minor impact to a small portion of SWP facilities (from KCWA to CLWA)..
68	Sierra Club	Nor does it discuss the ability of the State Water Project facilities to accommodate this huge transfer now that the Metropolitan Water District will be requiring delivery of a greater amount, if not all of its Title A amount. Adequacy of facilities such as the Banks pumping station, effects of the ESA and CalFED Record of Decision, capacity in the San Luis Reservoir in light of recent sharing agreements are not discussed.	The vast majority of MWD deliveries proceed through the East Branch of the California Aqueduct, not the West Branch, through which CLWA receives its deliveries. (See DWR Bulletin 132-02, page 272-275 and 288. The tables on those pages show the large amount of MWD deliveries through the East Branch and show that West Branch deliveries are only at approximately one-half capacity) Amendment 18 to the CLWA SWP contract with DWR provides that DWR will modify the instantaneous rate of flow to CLWA through the West Branch from 99 to 150 cfs. That increase in instantaneous capacity will be more than sufficient to provide for the annualized increase in capacity shown as needed by CLWA for the Project on Exhibit A to Amendment 18.

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68 (cont)	Sierra Club		Increased deliveries by MWD through the West Branch combined with increased deliveries to CLWA under the Project will not overtax the delivery system because the Castaic Lake reservoir has sufficient capacity to handle those deliveries. As the DEIR explains at pages 3.15-41 and 3.15-42: "The amount of water stored at Castaic Lake would not be expected to change as a result of the Project. As discussed in section 3.15.1.2, Castaic Lake is the terminal reservoir on the West Branch of the California Aqueduct and is operated to help meet peak deliveries during the summer months for those SWP Contractors that receive deliveries from Castaic Lake and to provide an emergency water supply in case of a major supply system outage. Castaic Lake is also used for year-round recreational purposes. Under normal operations, the amount of storage that is withdrawn from Castaic Lake to make deliveries to Contractors over the summer (the amount withdrawn that exceed the amount delivered to the lake) is typically about 30,000 AF (or about 10 percent of the lake's volume). The amount of this storage withdrawal is small relative to total deliveries from the West Branch, which averaged about 403,000 AF from 1990 through 2000. In other words, most deliveries from the West Branch are conveyed through the California Aqueduct and Castaic Lake in about the same month the water is delivered to Contractors from the lake. In the future, DWR is expected to maintain this same general operation at Castaic Lake regardless of whether deliveries from the West Branch increase, and regardless of whether increased deliveries are due to Table A Amount transfers such as the Project."
69	Sierra Club	Impacts to Agricultural Resources – In a letter dates 5-19-98 from the Planning Department of Kern County to the original Notice of Preparation for this project, a request was made to ensure that the transfer of 130,000 acre feet from the Monterey Agreement was not exceeded. This Agency requested that acknowledgment of previous actions be made in the DEIR and that cumulative impacts of SWP capacity rights be analyzed.	Please find attached as Table A-4 in Attachment A of Volume II of the DEIR, a compilation of total transfers to date under the 130,000 acre-foot amount referenced in Article 53(a) of the Monterey Amendment. As Table A-4 demonstrates, this Project will not cause the amount of total transfers under that provision to exceed the 130,000 acre-foot amount. As noted in the Response to Comment 10, since the 1998 letter referenced

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69 (cont)	Sierra Club	We would like to re-state that request for this document and include that letter which you have in your possession by reference into these comments.	by the comment, there have been other transfers outside of the 130,000 acre-foot provision of Article 53(a) pursuant to the Monterey Amendment. As noted in the Response to Comment 49, the present Project was intended by CLWA and KCWA to be included in the 130,000 acre feet of Table A Amount to be made available for transfer from agricultural to urban SWP contractors, but the Project could equally occur under Article 41 of the State Water Project contract without the Monterey Amendment in place. Any agricultural to urban transfers from areas listed in Article 53(a) in excess of 130,000 acre-feet will be processed pursuant to other provisions of the State Water Project contract. Please refer to Comments 68 and 72 and the Responses thereto regarding SWP capacity.
70	Sierra Club	They also requested an analysis of the impacts on the land within the WRMWSD in Kern County including Agricultural Preserve Map 204, 220 and 220No. 4-12-19. Additionally, they requested a table showing "the ultimate potential amount of capacity that could be transferred how many acre feet would be converted to M&I allotment for urban users and as a condition of transfer, if any land in WRMWSD would be permanently fallowed, retired or detached from the District." This information is important because it allows the decision-makers to access the impacts that might be caused to agricultural land or the increase in pumping of groundwater that might be caused by this project.	The May 19, 1998 Kern County letter requests an analysis of Project impacts on the lands within the WRMWSD, including Williamson Act lands. DEIR Section 3.2.2.2.2 explains that because no new construction will occur, the Project will cause no direct losses of Important Farmland or conflicts with existing zoning or Williamson Act contracts. DEIR Section 3.2.2.2.2 also explains that the Project will not cause indirect impacts to agricultural resources within WRMWSD's service area. In years of average or greater than average SWP deliveries, water associated with the 41,000 AF Table A Amount would be in excess of WRMWSD's demands. In years of less than average SWP deliveries, WRMWSD water management actions, including participation in groundwater banking projects, will allow WRMWSD to provide other water resources within the district when SWP deliveries alone are not sufficient to meet demands. Table 3.2-3, which summarizes the change in acreage impacts on the WRMWSD land from 1998 to 2000, provides support for the Section 3.2.2.2.2 analysis. DEIR Section 3.2.1.2 also provides support for that analysis, by stating that there have been no agricultural zoning changes to WRMWSD lands that are part of the Project since 1998. As noted in DEIR Table 3.2-4 and Section 3.2.1.2, lands under

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70 (cont)	Sierra Club		Williamson Act contracts in Kern County have increased since 1998. The May 19, 1998 Kern County letter additionally requests analysis of the feasibility of the use of groundwater supplies and of the potential economic losses. DEIR Section 3.2.1.2 provides that analysis, noting that by the year 2001, WRMWSD had developed more than 88,000 acre feet of new annual supply, including groundwater and supplemental water from groundwater banking projects. As evidenced by the discussion in that section, the 1991 financial loss caused by the 1991 drought was reversed and/or offset by the subsequent acquisition of the new groundwater supplies and by the income generated from groundwater banking projects. Also, as noted in DEIR Section 3.2.2.2.2, the reduction in WRMWSD Table A Amount caused by this Project will help reduce financial costs and/or offset financial losses by reducing WRMWSD's share of fixed SWP costs. Alternative sources of water are available to the agricultural operations within WRMWSD's service area at lower overall costs than they would incur by retaining this Table A Amount. Thus agriculture is made more viable by reducing the overall cost of water and by transferring for value Table A Amounts no longer used by WRMWSD. Finally, the May 19, 1998 Kern County letter requests disclosure of the ultimate potential amount of WRMWSD capacity that could be converted to urban use and the amount of fallowing required by WRMWSD for that to happen. DEIR Section 3.2.2.2 demonstrates that the Project will not cause fallowing or conversion or agricultural land to urban uses within WRMWSD. Fallowing will not occur in average or above-average water years, and prior WRMWSD diversification of water sources provides sufficient alternative water supply in the absence of the 41,000 Table A Amount so as to not require fallowing. DEIR Section 3.15.1.2 estimates that under favorable economic conditions, demands within the contract lands are

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70 (cont)	Sierra Club		approximately 180,000 to 190,000 AF, and that demands will not increase because the suitable agricultural lands within the district are already in agricultural production. With regard to fallowing, DEIR Section 3.2.1.2 notes that fallowing of an annual average of 27,300 acres occurs regardless of the Project for economic reasons related to crop markets and prices and for agronomic reasons related to pests and disease. Under CEQA, the DEIR does not analyze fallowing or conversion of agricultural land to urban use because these are not foreseeable results of the Project.
71	Sierra Club	The EIR includes a report entitlement "Effects on Agricultural Production...etc." found in Appendix C. We note that this report, included for circulation in the DEIR is labeled as *DRAFT* report. We wonder why the Final Report was not included for circulation and request that CLWA state how they can base their assumptions on a draft report.	The final report has been substituted in place of the draft report. The final report is entirely consistent with the draft report.
72	Sierra Club	A chart found on page 15 of this report is apparently presented in response to the Kern Agency request. It appears to show water need already in excess of WRMWSD Title A amount even using 100% of the water entitlement, a situation that the Court has already found not to be tenable (see foot note 7, PCL v DWR, 2000). This chart is footnoted with the statement that it "Assumes supplies available regardless of source." There is no analysis as to whether this transfer will cause fallowing in future drought years, only the statement that it hasn't in the past. There is also no analysis as to whether overdraft is occurring or will occur in the next drought cycle, only a statement that the chart assumes supplies are available without any explanation of the impacts of over-pumping to make them available. There is no chart that shows how much water was used from what sources before the transfer in question and how much water will be needed and how it will be supplied *after the transfer*.	Please refer to Comment 70 and the Response thereto. The Table 4 chart found at page 15 of the DEIR Appendix C, referred to in the comment, does not show WRMWSD demand for SWP water in excess of WRMWSD's Table A Amount. Table 4 estimates the amount of water applied to various crops from various water sources, only one of which is SWP water. However, Table 4 overstates the amount of water applied to crops during limited SWP water supply years such as 1991. (See DEIR Appendix C, Page 14.) Table 4 reflects only actual SWP delivery amounts, not the WRMWSD Table A Amount. Therefore, Table 4 does not show WRMWSD demand in excess of WRMWSD's Table A Amount. The DEIR provides adequate information to determine that fallowing will not result from the Project. (See DEIR Section 3.2.) As indicated by DEIR Section 3.15.1.2, WRMWSD has several sources of water supply available, including but not limited to groundwater, groundwater banking, and surplus water. DEIR Table 3.15-5 shows the total available supply, and that amount significantly exceeds in recent years the peak demand of 180,000 to 190,000 AFA as set forth in DEIR Section

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72 (cont)	Sierra Club		3.15.1.2. As explained in Section 3.15.1.2, demands within the district are not anticipated to materially increase in the future because the suitable agricultural lands within the district's service area already are in agricultural production. As to overdraft, according to personal communication with W.Taube (WRMWSD General Manager), WRMWSD groundwater data and hydrographs indicate that since WRMWSD ceased use of the subject Table A Amount, groundwater levels have increased through time due to return flows from the importation of the current level of supplemental water deliveries, and there is no evidence of overdraft occurring in that portion of the Kern County Groundwater Basin in which WRMWSD is located. As to the use of various water supply sources caused by the Project, DEIR Section 3.2.2.2.2 explains that prior WRMWSD diversification will allow WRMWSD to continue to provide surface water within the district when SWP deliveries alone are not sufficient to meet demands. Also, as DEIR Section 3.15.2.2 explains, at page 3.15-46, economic decisions made by farmers whether to use local groundwater in-lieu of using imported water are not dictated by the Project. As explained in DEIR Section 3.15.1.2, even if transferred water were needed, and groundwater pumping were the sole source of replacement, the potential environmental impact to WRMWSD would be less than significant, given the significant volume of water in storage and the trend of increasing groundwater levels.
73	Sierra Club	The original purpose of the state water project was to provide a supplementary water source so that groundwater would not be pumped in excess of sustainable levels. Now it appears that this water transfer will bring about the very situation one sought to avoid. We believe it is imperative that CLWA notify all interested parties in surrounding areas of their intention to make this transfer, and of the possible increased need for groundwater pumping if this transfer occurs. Because pumping of groundwater sources to replace state water	Please refer to Comments 70 and 72 and to the Responses thereto. The Project will not require increased groundwater pumping in WRMWSD or KCWA because there are sufficient alternative available water sources, as explained in DEIR Section 3.2.2.2.2. Assuming that the amount transferred were needed by WRMWSD and that groundwater were the only source, Section 3.15.1.2 notes that groundwater production of that amount would have a less than significant impact because there is a vast amount of groundwater in storage, which

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73 (cont)	Sierra Club	transferred to other areas will have significant impacts on the Public Trust and the vitality of farming operations, we reiterate, the DWR should be the lead agency for this document.	amount has been increasing since the transfer began, as indicated by groundwater levels. The Project will not result in increased groundwater pumping in CLWA's service areas because the Project provides supplemental water to augment and firm up existing CLWA supplies. Please also refer to Comment 36 and the Response thereto. The public trust doctrine does not apply to the State Water Project, to transfers of SWP water, or to groundwater.
74	Sierra Club	The closing paragraphs of this report include a rather chilling understatement; ***"In a series of consecutive 'dry years', the unavailability of a proportional share of the SWP contract amount may contribute to a mismatch between water supply and demand."*** Have farmers been notified of this "mismatch"? How much fallowing will this cause, what will be the economic impacts to farmers, laborers and communities? Isn't this exactly the question that everyone has requested that the EIR address? Where is the answer? Given the substantial move away from annual row crops into permanent orchards of fruits, nuts and vineyards that require multiple years of investment (see Table 2 on pg. 6), dry years with insufficient state water will substantially damage these crops. *One should also note the increase in groundwater pumping indicated by this table.*	The comment takes out of context the sentence contained at page 22 of DEIR Appendix C. The remainder of that paragraph explains: "However, the effect depends on the annual reliable supply and costs of the water from district wells and other supplemental sources. If the supplies from the supplemental sources offset the reduced SWP entitlement, there should be a limited effect on water availability. Overall, the water supplies from the supplemental sources more than offset the reduced SWP Entitlement and, when the carrying cost of holding excess SWP Entitlement is considered, at a lower cost." This language has been slightly reworded in the final NEA Report, without changing the substance. (See FEIR Volume II, Section 4.) As set forth in the Response to Comment 72, WRMWSD has several different water supply options in a period of multiple dry years. Please also refer to the Response to Comment 70. Also, as set forth in the Response to Comment 72, personal communication with W. Taube indicates that groundwater levels are increasing and there is no evidence of overdraft.

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75	Sierra Club	Flooding and water quality changes – In a letter dated May 21st 1998 also from the previous EIR review, the Ventura County Flood Control Department notes that the NOP correctly identifies downstream flooding from increased effluent flows as a potential significant impact. There should be a discussion of the potential for this impact in the DEIR for the project before you.	The referenced letter states: "The initial study correctly identifies flooding as an unknown potentially significant impact. Potential development in eastern Ventura County with additional water allotments could increase the need for additional flood control facilities." The potential for growth-related development to increase flooding is addressed in section 4.2.15 of the DEIR. Also note that the letter from the Ventura County Flood Control Department on the current EIR (included in Appendix A) states that "the District has no comments with respect to flood control and NPDES issues."
76	Sierra Club	Changes to water quality including increased chlorides, nitrates or other constituents of SWP project water, and how those constituents will affect the new TMDL requirements approved by Regional Water Quality Control Board approved subsequently to the previous EIR, should be discussed and mitigated. Increased pollution from Trihalomenthanes in public water supply due to higher percentage of reliance on SWP project water as main source should be disclosed. (See attached news article.)	Please refer to the Response to Comment 58.
77	Sierra Club	This document purports to address statewide issues, but fails to discuss the impacts of the Bay-Delta water quality standards on this project. Again, this is but another example of why DWR must be the lead agency.	These standards are included as part of DWRSIM, the model that was used to identify Project impacts. Please refer to section 1.1 of Appendix D, which includes a description of water quality criteria applicable to the SWP Delta pumping. As discussed in section 3.15.2.2, the Project would have an imperceptible or minor impact on the water quality of the Delta, and all changes would be within applicable quality standards and agreements.
78	Sierra Club	This document relies on transfers to the Semi-Topic Water Banking project for supply reliability, but does not address potential water quality issues that could preclude groundwater from being pumped back into the aqueduct. This transfer project is currently being litigated.	Please refer to the Response to Comment 59.
79	Sierra Club	Growth Impacts – In a letter dated May 12th, 1998 from the City of Santa Clarita, the City states that "the DEIR should define current and anticipated water availability for the CLWA service area as compared to the ultimate buildout of the City of Santa Clarita General Plan, and the Santa Clarita Valley Areawide	Information regarding the existing versus new population that could be served by the Project is summarized in DEIR Section 3-0. As noted, this is dependent upon the availability of SWP water, which can vary from year to year. The population that could be served by the Project is compared to relevant growth

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79 (cont)	Sierra Club	Plan. This information was requested to clearly identify the need for the project, and should be included for the current project. The City's requests for disclosure in the areas of geology, growth inducement and impacts to Kern County groundwater and development monitoring system analysis should also be addressed for the current project.	projections in Section 5.3. The referenced letter from the City of Santa Clarita does not address impacts to Kern County. These issues were addressed in the DEIR, however, for both the CLWA and WRMWSD service areas. (The development monitoring system (DMS) is a list of proposed and approved projects that is maintained by the County of Los Angeles, and the analysis of cumulative impacts based on DMS projects is specific to the CLWA service area.)
80	Sierra Club	In response to this question, the CLWA relies, but pretends not to rely, in the Urban Water Management Plan that is being litigated. The issue under litigation is over-statement of water supply, particularly the reliance on the availability of polluted water from wells that are now closed because they exceed the MCL for ammonium perchlorate. The Sierra Club requests than an analysis of the impact of growth in a multiyear drought scenario in the Santa Clarita Valley be conducted as part of this EIR. Santa Clarita is now relying on state water as its primary source of supply (since the groundwater is either fully committed or polluted –see attachment). We believe it would be particularly important for decision makers to understand the impacts of the recurrence of the historical SWP worst-case scenario when only 13% of the contractors' Title A amounts were available. (See notes attached from presentation to Santa Clarita City Council, June 29, 2004. Transcript to be provided before Final EIR is released.)	Please refer to Response to Comment 24. The DEIR does not tier off nor rely on the UWMP for any information, including information regarding estimates of water supply, water use, water demand, or water supply reliability. DEIR Section 3.15.1.3 provides a discussion of the studies that were relied upon for its information. As a review of pages 3.15-19, 3.15-20 and 3.15-26, 3.15-27 and 3.15-28, the DEIR's analysis of the perchlorate issue is based on recent studies and reports, not the UWMP. As stated in DEIR Section 5.6, "Although information in the UWMP was considered in the analysis for the Project, an independent analysis and determination of environmental impacts was carried out for the Project." The analysis requested in the comment was performed in the DEIR (refer to section 3-0, "Population and Housing Impacts, Allocation of Project Water to Existing and Future Users;" section 3.10.2.2.3; and section 4.2). Three scenarios were identified, including a multiple dry year period (this supply is the average amount of water available over the four consecutive drought years of 1988 through 1991 based on DWRSIM model results). The single dry year supply is the supply available in the single year with the lowest total SWP deliveries based on DWRSIM model results, which occurred in 1977. In this single dry year, the supply was about 22% of Table A Amounts, and the increase in SWP supply due to the Project was estimated to be 9,200 acre-feet. If instead the supply in a single year were 13% of Table A Amounts, then the increase in supply due to the Project would be reduced to 5,300 acre-feet. Any environmental impacts based on this lower

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80 (cont)	Sierra Club		supply amount would be less than those described in the DEIR. Use of the 22% supply amount results in analysis of the worst-case environmental impact assessment scenario.
81	Sierra Club	Sensitive species – The current project is based on an EIR that does not address impacts to endangered species as a result of the entitlement transfer. Draw down of groundwater will result in reduction or elimination of surface water and may occur in both the transferring and receiving agencies (during drought periods when state water is unavailable) as a result of this project. Since species issues were not addressed in the Warm Springs/Maricopa/Belridge EIR, they should be addressed for the proposed project, as its implementation would cause significant impacts. These include impacts to endangered species impacted in both areas including but not limited to the San Joaquin Kit Fox in the WRMWSD and the Unarmored Three-Spine Stickleback in the Castaic Lake Water Agency. The Kit fox could be impacted by draw down of groundwater that impacts surface flows or diversion of surface flows required by lack of state water project supplies. The Stickleback could be affected by increased effluent flows that cause a change in surface water quality (this problem has already been identified as an area of concern by the Regional Water Quality Board) or increased pumping of groundwater required to make up for delivery cutbacks during a drought. Impacts and proposed mitigations should be discussed. We note that a section 4d consultation may be required if endangered species will be affected and request that the US Army Corps of Engineers be sent notification of this project since it appears that they have not been so notified.	The comment that the current project is based on an EIR that does not address impacts to endangered species as a result of the entitlement transfer analysis is not correct. The Supplemental Water Project EIR is a stand-alone document and is not based on any other EIR. Impacts to special status species are addressed in section 3.4, Biological Resources. No mitigation measures are identified, because no significant impacts would occur. Section 4d of the Endangered Species Act is not applicable to this project, because no impacts to threatened species would occur. A copy of the DEIR was sent to the Ventura Office of the U.S. Army Corps of Engineers (refer to Attachment B of Volume II of the FEIR), but no comments were received from that agency.
82	Sierra Club	The EIR includes a list of sensitive species in Appendix B, but does not discuss how these species will be affected when substantial over-draft occurs, either due to over-reliance on this SWP water in the Santa Clarita Valley without sufficient back up sources or over-draft in the farming areas due to transferring away to much of their supplemental SWP water supply.	Please refer to the Responses to Comments 36 and 72 for a discussion about groundwater supply. This Project is not a groundwater project. The Project augments CLWA's groundwater supply and will not result in groundwater draw down in the WRMWSD service area. Please refer to the Response to Comment 58 regarding the quality of water provided by CLWA to its purveyors. The comment presents no evidence of a groundwater drawdown that could significantly

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82 (cont)	Sierra Club		impact sensitive species. The DEIR analyzes impacts to groundwater and concludes that impacts to the CLWA service area would be beneficial and that impacts to WRMWSD would be less than significant (refer to section 3.15.2). The comment fails to provide factual evidence to support the presumption that overdraft or significant drawdown will occur in either the CLWA or WRMWSD service areas as a result of the Project. Consequently, these comments cannot constitute sufficient evidence of a significant effect upon the environment under Public Resources Code section 21082.2(c). (See Citizen Action To Serve All Students v. Thornley (1990) 222 Cal.App.3d 748 [speculation and generalizations about traffic, parking, economic effects, and earthquake safety did not constitute substantial evidence].)
83	Sierra Club	Further, it has recently come to our attention that Berrenda Mesa has published a draft EIR to withdraw/divert approximately 70,000 AF from local streams and groundwater sources. Since the transfer of SWP surface water will affect ground water pumping sources, this EIR and its impacts must be included and addressed during the water transfer review process. We therefore believe this document must be included in the review process and incorporate it by reference.	Any withdrawal of water proposed by Berrenda Mesa would be a separate project not connected to this EIR or any other CLWA program, nor would it affect the same environmental resources as the Project evaluated in the present EIR. The service areas of Berrenda Mesa and WRMWSD are approximately 50 miles apart, and the service areas of Berrenda Mesa and CLWA are approximately 150 miles apart.
84	Sierra Club	Air Quality – The effect of the project on increasing particulate matter from increased or overdraft use of groundwater in a PM10 non-attainment zone for this air pollution problem should also be addressed. THE EIR only addressed project specific impacts such as pumping facilities and grading for new pipes. It did not address fugitive dust created by dried up landscapes. CLWA is well aware of the problems created by dust due to draw down of Owens Lake and its impact on surrounding communities because one of its Directors helped negotiate the settlement on behalf of LADWP. This is an example of an impact that must be anticipated in both the transferring farmlands and the receiving Santa Clarita area. Santa Clarita is already in a non-attainment zone for PM10s as is the Central Valley. Clean Air Act compliance will be	The potential for fugitive dust emissions to occur due to changes in agricultural practices is considered in section 3.3.2.2.2. Since no changes in agricultural practices would occur, fugitive dust emissions would not increase. A reduction in water supply causing air quality concerns would not occur. Direct air quality impacts in the CLWA service area are addressed in section 3.3.3.3.4. Indirect impacts resulting from induced growth are addressed in section 4.2.3, and it is concluded that impacts may not be mitigable to less than significant. As addressed in the Responses to Comments 70 and 72 and in portions of the DEIR cited therein, the Project will not directly or indirectly cause drawdown or overdraft that might increase fugitive dust.

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84 (cont)	Sierra Club	necessary. A cut-back in water supply caused by air quality concerns as already occurred for the LA Dept. of Water and Power in the Owens Valley, would be much more appropriately dealt with in the planning process than after new building is already approved based on that water.	
85	Sierra Club	State Water Reliability – One of the most apparent reasons that the review must await completion of the Monterey "Plus" environmental review is that a new hydrological model "CalSim II" is being proposed for use in evaluating the reliability of water deliveries of the sate project supply. This information is obviously critical to all the above stated issues. There has been substantial criticism of the model (peer review attached). Among other circumstances, the model does not address climate change or levee breaks such as the substantial recent failure in the Jones tract (news article attached). The DWR must complete its environmental review of this issue and resolve discrepancies before reliability factors on which the Castaic EIR is based, can be assumed to be accepted. Again, tiering is based on a DWR document that has not been circulated for review, has not been through the public comment process and has not been certified.	Please refer to the Response to Comment 25 for a discussion of the use of models in the DEIR. Refer to the Master Response for further discussion regarding the comments that the Supplemental Water Project EIR must await completion of the Monterey Plus EIR. Also, please note that this EIR does not tier from the Monterey Plus or any other EIR. It is a stand-alone, project EIR.
86	Sierra Club	We believe that DWR must be the lead agency for the following reasons: ▪ The published appellate decision in PCL v. DWR, 2000 stated: *"We agree with the trial court that DWR, not CCWA, has the statutory duty of assessing environmental consequences of projects involving the SWP* [State Water Project]." (Pg. 1 of Decision). We incorporate this decision by reference into the administrative record. ▪ DWR is best suited to ensure that widespread notification of interested parties occur. ▪ DWR is best suited to recognize environmental impacts that might be incurred to a wide spread area of the state as a result of this water transfer and to properly asses such impacts. ▪ DWR, in its capacity as operations manager of the SWP, will be acquainted with other state projects that would	Please refer to the Master Response and to Comments 2, 3, 4, 5, 6, 53 and 57 and the Responses thereto. The *PCL* case cited in this comment involves a program EIR analyzing the impacts of a major amendment to the SWP contracts statewide, alterations to the operation of the State Water Project, and the state's transfer of the Kern Fan Element property. For all of those reasons, the court in *PCL* held that DWR must be the lead agency for the Monterey Amendments Program EIR. This Project is a transfer of Table A Amount from WRMWSD, through KCWA, to CLWA. The Project does not encompass all or even a major part of the various provisions of the Monterey Amendment, does not impact a substantial part of the SWP facilities, and does not interfere with or preempt the Monterey Amendment DEIR process. CLWA has consulted DWR, as a responsible agency, in the preparation of the Project DEIR.

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86 (cont)	Sierra Club	affect or be affected by this transfer. ▪ CLWA failed to address many issues of statewide concern in this document.	
87	Sierra Club	We therefore request that this document be withdrawn, that the document not be re-submitted for circulation until the Monterey Agreement EIR is completed and certified, and that all parties whose groundwater may be impacted are properly notified when re-circulation occurs.	Please refer to the Master Response.
88	TCW	It is our understanding that this environmental document is being re-circulated by Court Order because the program EIR on which it was based was set aside in the decision PCL v. DWR, 2000. In that decision the Court found that an individual contractor (Central Coast Water Agency) could not be the lead agency for a state wide project that had impacts to a wide geographical and social group of people. The decision found that the Department of Water Resources should be the correct lead agency. We would like to express our dismay that your agency is now proceeding once again in a manner contrary to law by circulating this document as the lead agency and before the Monterey Agreement EIR has been completed. We note that the same General Manager of Central Coast Water Agency, Dan Masnada, that was found to be in violation of CEQA for proceeding as the wrong lead agency, is now the general manager of Castaic Lake Water Agency. In that capacity, he is once again directing his agency to proceed as lead agency in violation of the law. We believe that the Department of Water Resources must be the lead agency for the discussion of the statewide impacts of water transfers for the following reasons: 1. The published appellate decision in PCL v. DWR, 2000 stated "We agree with the trial court that DWR, not CCWA, has the statutory duty of assessing environmental consequences of projects involving the SWP [State Water Project]." (Pg. 1 of decision). We incorporate this decision by reference into the administrative record. 2. DWR is best suited to ensure that widespread	Please refer to the Master Response and to Comments 57 and 86 and the Responses thereto. The comment incorrectly states that this DEIR is a re-circulation of the prior EIR for this Project. The trial court in *Friends I* set aside the certification of that prior EIR and ordered that CLWA certify a new EIR that complies with CEQA and is consistent with the view expressed by the Court of Appeal in *Friends I*. This DEIR is the environmental document prepared in response to the trial court's order. The identity of the lead agency's manager is irrelevant to the adequacy of the DEIR.

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88 (cont)	TCW	notification of interested parties occur. 3. DWR is best suited to recognize environmental impacts that might be incurred to a wide spread area of the state as a result of this water transfer and to properly asses such impacts. 4. DWR, in its capacity as operations manager of the SWP, will be acquainted with other state projects that would affect or be affected by this transfer.	
89	TCW	Many anomalies in the CEQA process have already occurred because the general Manager of Castaic Lake Water Agency has chosen to proceed contrary to law and to the published appellate court decision in a case to which he was a party. This includes the fact that they were not notified of the circulation of this draft EIR, nor were others in water districts including Berenda Mesa and in other areas statewide.	Please refer to the Master Response and to Attachment B of Volume II of the FEIR and to Comment 57 and the Response thereto. The Project's potential environmental impacts primarily occur in Kern County and CLWA's service area. The DEIR also analyzes potential impacts to SWP facilities. The Project effects will occur in limited areas, not statewide. CEQA does not require notice to unaffected areas..
90	TCW	Further, it has recently come to our attention that Berenda Mesa has published a draft EIR to withdraw/divert approximately 70,000 AF from local streams and groundwater sources. Since the transfer of SWP surface water will affect groundwater pumping sources, this EIR and its impacts must be included and addressed during the water transfer review process. We therefore believe this document must be included in the review process and incorporate it by reference.	Please refer to the Response to Comment 83.
91	TCW	The original purpose of the state water project was to provide a supplementary water source so that groundwater would not be pumped in excess of sustainable levels. Now it appears that this water transfer will bring about the very situation one sought to avoid. We believe it is imperative that CLWA notify all interested parties in Berenda Mesa and other areas proposing increased groundwater pumping, of their intention to make this transfer, because pumping of groundwater sources to replace state water transferred to other areas will have significant impacts on the Public Trust and the viability of farming operations.	Please refer to the Response to Comment 73.

No.	Commenter	Comment	Response
92	TCW	Such impacts to groundwater that affect both public trust surface flows and water for farming, should be addressed in the program EIR. It is therefore improper for CLWA to proceed before the completion of the Monterey Agreement EIR.	Impacts to groundwater, surface water, and agricultural resources are addressed in the DEIR (sections 3.2 and 3.15). Please refer to the Master Response and to Comments 2, 72 and 73 and the Responses thereto.
93	TCW	In conclusion we request that this document be withdrawn, that the document not be re-submitted for circulation until the Monterey agreement EIR is completed and certified and that all parties whose groundwater may be impacted are properly notified when re-circulation occurs.	Please refer to the Master Response and to Comments 73, 91 and 92 and the Responses thereto.
94	UWCD	United Water Conservation District has reviewed the Draft EIR for the proposed transfer of 41,000 acre-feet of State Water Project Table A Amount water from the Kern County Water Agency's member unit Wheeler Ridge-Maricopa Water Storage District to Castaic Lake Water Agency. This proposed transfer of SWP water is beneficial to the Santa Clara River Watershed and is fully endorsed by United Water.	This comment is noted; no text revisions are required.
95	UWCD	The permanent transfer of 41,000 acre-feet of SWP water to the Castaic Lake Water Agency provides a valuable additional source of water for the Santa Clarita Valley. This additional water improves the potential for conjunctive-use of water within the valley. This is especially important given the urbanization of this area. Increased surface water supplies should provide water managers throughout the basin more flexibility with respect to the magnitude of additional groundwater pumping needed to meet the escalating M&I demand for water within the basin.	This comment is noted; no text revisions are required.
96	UWCD	Although discussed in various sections within the Draft EIR it should be reemphasized here that 41,000 acre-feet of SWP Table A Amount water doesn't guarantee this amount can be delivered every year. Hydrologic conditions and storage carryover in any particular year primarily dictate the annual allocation of water to the S WP Contractors. Historic deliveries to M&I Contractors should not be used to project future deliveries. The adoption of the Monterey Amendment (following the principles of the Monterey Agreement) will require that M&I Contractors and Agricultural Contractors more equitably share the pain of future water shortages.	This comment is noted; no text revisions are required.

No.	Commenter	Comment	Response
96 (cont)	UWCD	During the previous drought, allocations, as a percentage of table A Amount (Entitlement), to Agriculture contractors were significantly less than allocations to the M&I Contractors.	
97	UWCD	As an ongoing general comment to all water purveyors within the Santa Clarita Valley, United Water has a very real interest in the continued health of the Santa Clarita Groundwater Basin and the flow of the Santa Clara River. United Water represents the collective interests of downstream residents that depend on the flow of the Santa Clara River for recharge to groundwater, surface water diversions and environmental mandates. United Water's goal is that the quantity and water quality associated with the flow of the Santa Clara River into Ventura County not be diminished. The development and implementation of the inter-Agency regional monitoring program of groundwater levels, groundwater quality, surface water flows, and surface water quality should provide ongoing data with respect to the relative health of the Santa Clarita and downstream basins as well as surface water. In the event that surface water flow into Ventura County is diminished in either quantity or quality, and can be reasonably linked to over pumping of the aquifer systems and/or surface water discharges to the river within Santa Clarita Valley, United Water would seek to remedy the problem.	This comment is noted; no text revisions are required.
98	Sjovold	Please accept these comments with the attachments in opposition to the proposed transfer. Besides being an arrogation of power by CLWA unto itself, it flies in the face of the present process at the State level to properly assess the environmental impacts of the Monterey Amendments as mandated by the Court of Appeals. What is particularly troubling is the adoption of material developed by DWR on SWP reliability which is demonstrably in-correct. As a member of the plaintiff committee presently engaged with DWR to fashion a new Monterey EIR, I am quite aware of the issues involved with the CALSIM II model, which is the model used to generate the incorrect information on SWP reliability. The attached analysis shows why the reliability information is incorrect and argues that until the CALSIM II model can	Please refer to the Master Response and to Comments 2 through 6 and 25 and the Responses thereto. The Project does not encompass the Monterey Amendment and does not interfere with or preempt the Monterey Amendment DEIR process. CLWA has consulted DWR, as a responsible agency, in the preparation of the Project DEIR. The analysis attached to the comment refers to the CALSIM II model, with the principal criticism that it overstates deliveries if applied to the last several years. The DEIR used CALSIM II results only in estimating SWP supplies for the current environmental setting. All other SWP supply analyses in the DEIR (i.e., for both the 1998 environmental setting and the environmental impact analyses) used DWRSIM model studies.

No.	Commenter	Comment	Response
98 (cont)	Sjovold	correct its fundamental deficiencies it cannot be relied upon. Without this model's results the CLWA EIR is without any foundation for the claims made concerning the reliability of supplies that CLWA attaches to the SWP. In fact, one can make the argument on the same basis that present CLWA SWP supplies are already overtaxed.	The analysis attached to the comment fails to identify any defect in these DWRSIM model studies used in this DEIR. As set forth in the Responses to Comments 4 and 25, the DWRSIM model studies provided the best estimates of SWP supply reliability that were available when the DEIR supply analyses were conducted, and are consistent with the 1998 environmental setting used in this EIR. Also, as set forth in the Response to Comment 4, the DWRSIM model SWP delivery reliability results were slightly higher than delivery reliability results from the CALSIM II studies that subsequently became available in the DWR SWP Delivery Reliability Report. Therefore, from an environmental impact assessment standpoint, the DEIR analyzed the worst-case scenario, i.e., the scenario that would result in greater direct and indirect impacts in both the CLWA and WRMWSD service areas.
99	Swans	It has come to our attention the Castaic Lake Water Agency is possible planning to affect a position on the above captioned matter which, in our opinion, will gravely impact the Monterey Agreement EIR process. We also wish to comment that we see a direct conflict of interest and possible injustice to the public and interference with the CEQA process by your agency's spearheading any effort to circumvent, delay, interfere, or otherwise impede the more appropriate participation of the Department of Water Resources, the agency we believe entitled to administrate on behalf of the general public of the State of California in this matter. We, the below listed voters and community members raise our voices in writing in complete objection to any and all interference by the Castaic Lake Water Agency and formally request the immediate withdrawal of any and all past, present or future water transfer documents until the EIR is complete. Furthermore, we wish to be added to the list of mailings for any matters regarding this subject.	Please refer to the Master Response and to Comments 2 through 6 and the Responses thereto. Beyond those responses, CLWA is unable to respond to the comment because the comment fails to note in what manner the commenter believes that the DEIR will "gravely impact" the Monterey Amendment DEIR preparation process and fails to explain in what manner the DEIR or CLWA actions "circumvent, delay, interfere or otherwise impede" DWR participation. The commenter has been added to the mailing list for this EIR.

No.	Commenter	Comment	Response
100	Churchill	Water transfers are a statewide issue that induce growth and reduce water for farming. Therefore I believe that your agency is the wrong lead agency for this project; I believe the correct lead agency is the Department of Water Resources, which is both indicated and qualified under state law to address statewide impacts. DWR will also notify all interested parties to the extent of their knowledge. If such a major transfer is allowed to proceed under the lead agency status of a small regional water agency, it will set a precedent that will affect many major water decisions throughout the state of California. I believe it is imperative that such a major change in state policy receive full environmental review and comments from all affected parties. I therefore request that this project be re-noticed by the Dept. of Water Resources acting as lead agency as a project of statewide concern so that all impacts may be disclosed and properly addressed.	Please refer the Master Response and to Comments 53, 54, 70 and 72 and the Responses thereto. The *PCL* decision concluded that DWR was the proper lead agency for a project that impacted SWP facilities and operations statewide, amendment of the SWP contracts statewide, and disposition of state-owned land. The commenter fails to explain how the Project will "set a precedent that will affect many major water decisions throughout the state of California." As explained in more detail in the Responses to Comments 70 and 72 and in the DEIR sections cited therein, the Project will not reduce water available for farming. As noted in the Responses to Comments 10 and 69, this Project is only one of the many recent permanent transfers of Table A Amounts. This Project sets no precedent. The commenter also suggests that the Project represents a major change in state policy. In so doing, the commenter appears to confuse the Monterey Amendment, which does represent a major change in state policy, with the Project, which is a simple transfer of Table A Amount that could occur with or without the Monterey Amendment.
101	Volker	On behalf of California Water Impact Network and Friends of the Santa Clara River, we wish to incorporate by reference the comments submitted on the above DEIR by the Sierra Club. We wish to emphasize, in particular, that Castaic Lake Water Agency is not the correct "lead agency" for this project under the California Environmental Quality Act. As the Third District Court of Appeal made clear in *Planning and Conservation League v. Department of Water Resources*, 83 Cal.App.4th 892, 920 (2000), "DWR, with its expertise on the statewide impacts of water transfers, " is the proper lead agency under CEQA for decisions regarding transfers of State Water Project water between SWP water contractors. We also wish to incorporate by reference our Opening Trial Memorandum (filed August 21, 2003) and Reply Trial Brief (filed May 3, 204) in the matter *California Water Network and Friends of the Santa Clara River v. Castaic Lake Water Agency*, Ventura Superior Court No. 215327. These memoranda point out the importance of recognizing DWR's lead agency status	Please refer to the Master Response. The *PCL* case cited in this comment involves a program EIR analyzing the impacts of a major amendment to the SWP contracts statewide, alterations to the operation of the State Water Project, and the state's transfer of the Kern Fan Element property. For all of those reasons, the court in *PCL* held that DWR must be the lead agency for the Monterey Amendments Program EIR. This Project is a transfer of Table A Amount from one State Water Project contractor to another. DWR and the petitioners in the *PCL* case all acknowledged in the Monterey Amendment Settlement Agreement, Attachment D, Paragraph 4, that a single contractor-to-contractor transfer is not the same as a program that facilitates transfers statewide. The language regarding transfers quoted from the *PCL* case is taken out of context and is inapplicable to a transfer between two contractors as contemplated by this Project. With respect to the unspecified arguments contained in the trial

No.	Commenter	Comment	Response
101 (cont)	Volker	regarding transfers of State Water Project water.	briefs in the case of *California Water Network and Friends of the Santa Clara River v. Castaic Lake Water Agency* [*Network*] Ventura Superior Court No. 215327, the ruling of the Superior Court in that case held: "Petitioners argue that the Department of Water Resources should be the lead agency and cite the court to *Planning and Conservation League v. Dept. of Water Resources*, 83 Cal.App.4th 892. The fact present here are sufficiently different from those present in *PCL* to make the finding in that case that the DWR was the lead agency inapplicable here. *PCL* involved the Monterey Agreement and the resolution of conflict between urban and agricultural allocations of water during times of shortage. The agreement was statewide in its scope and involved 29 agencies. The present circumstance is local in its character and involves the DWR in a much more passive and secondary role. The present project does not involve either a substantial restructuring of the distribution of water, [n]or does it involve water throughout the state. It does involve a diversion of Castaic's water to a water bank, and the subsequent withdrawal of that water. Castaic is the agency most deeply involved in the planning, and execution of this project. It is the appropriate lead agency as described in *PCL*, Public Resources Code section 21067, and 14 CCR 15051(a). DWR is involved, and is a responsible agency, but it is not the lead agency for the project." (Ruling, page 2, line 28 through page 3, line 18.).
102	PM (Plambeck)	I'd just like to express my concern that this EIR is proceeding without completion of the Monterey Agreement. I think the court was fairly concise about the need for the programmatic EIR in both legal decision....	Please refer to the Master Response.
103	PM (Plambeck)	...very concerned about the lead agency, and Castaic Lake Water Agency is not the right lead agency.	Please refer to the Master Response and to Comments 53 and 54 and the Responses thereto.
104	PM (Plambeck)	It was my understanding prior to this that the two EIRs were moving forward in tandem and they would be completed simultaneously.	Please refer to the Master Response.

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105	PM (Plambeck)	And I just think that – that the folks up north that challenged the EIR will probably continue to challenge the EIR and that they're going to be very concerned that this is proceeding in a manner that's not consistent with an appellate court decision that they won, and that means that even though you know that's there and you're going ahead and doing this anyway, and it sort of seems like a waste of taxpayer's money since there's already a published appellate court decision on it. And so I would just ask you to keep that in mind and that it might be the better part of valor to move the two EIRs forward in tandem as I understood had been originally planned.	Please refer to the Master Response. Please also refer to the responses to Comments 31, 46 through 48.
106	PM (Bertoni)	First, I'd like to thank the board for providing us this opportunity to comment on the project, on the EIR. You have extended the public comment period beyond the normal 45 days to 60 days. You have also held the public hearing during your comment period, which is not required under CEQA, so you've gone above what's the minimum under CEQA and the City appreciates that and also appreciates being provided with all the documentation very quickly and promptly throughout the whole process. So first off, we'd like to thank you for that.	This comment is noted; no text revisions are required.
107	PM (Bertoni)	Second off, I noticed that by sharing on EIR for water transfer, it's not really the water transfer itself. In regards to the water transfer, I would just say that as we reviewed the EIR it appears that this EIR was prepared for water transfer that would allow to you a few things. One of them would be to provide more reliability in the existing water supply. The other would be to allow for growth that's already been anticipated under existing general plans for both of the City of Santa Clarita and the County of Los Angeles. So to that extent, the City is supportive of that. The City has always been supportive of additional water reliability and also to make sure that as well plan for our future growth, we will have water supplied for that. This city has a couple very high-profile projects that it is very important to the City and the point being the City to have adequate water supply for that. As you know, we're very – a housing rich city. We are trying to	This comment is noted; no text revisions are required.

No.	Commenter	Comment	Response
107 (cont)	PM (Bertoni)	balance that out to be as equally jobs rich and so things such as our employments such as the Center Point Business Park to the south of you or the Gate (inaudible) project in Newhall are very important for the City, very important for the City's goals. So to the extent that this would provide water for that, that's an important City goal. Also, things such as the redevelopment of downtown Newhall and that revitalization would require some additional water. So the supply part of it, the City is supportive of that additional reliability of water supply.	
108	PM (Bertoni)	We reviewed the EIR at the City and we reviewed it under the – to see if it adequately addressed the potential environmental impact to the City of Santa Clarita, and our review indicated that it has. So at this time we have no comment on the EIR and would happy to answer any questions. Thank you.	This comment is noted; no text revisions are required.
109	PM (Wisehart)	The United Water Conservation District has reviewed the draft EIR for the purpose – for the proposed transfer of 41,000 acre-feet of state project water that will come from the Kern County Water Agency's member unit Wheeler Ridge-0Maricopy Water Storage District to the Castaic Lake Water Agency. This proposed transfer of State Water Project water is beneficial to the Santa Clara River Watershed and is fully endorsed by United Water.	This comment is noted; no text revisions are required.
110	PM (Wisehart)	The permanent transfer of 41,000 acre-feet of State Water Project water to the Castaic Lake Water Agency provides a valuable additional source of water for the Santa Clarita Valley. This additional water improves the potential for conjunctive use of water within the valley. This is especially important given the urbanization of this area. Increased surface water supplies should provide water managers throughout the basin more flexibility with respect to the magnitude of additional groundwater pumping needed to meet the escalating M&I demand for water within the basin. As an ongoing general comment to all water purveyors within the Santa Clarita Valley, United Water has a very real interest in the continued health of the Santa Clarita groundwater basin and the flow of the Santa Clara River. United Water represents the collective interests of downstream residents that depend on	This comment is noted; no text revisions are required.

No.	Commenter	Comment	Response
110 (cont)	PM (Wisehart)	the flow of the Santa Clara River for recharge to groundwater, surface water diversions, and environmental mandates.	
111	PM (Wisehart)	United Water's goal is that the quantity and quality of water associated with the flow of the Santa Clara River into Ventura County not be diminished. The development and implementation of the inter-agency regional monitoring program of groundwater levels, groundwater quality, surface water flows, and surface water quality – and you know I am talking about the MOU agreement that we all signed with your upstream purveyors – should provide ongoing data with respect to the relative health of the Santa Clarita and downstream basins as well as surface water. In the event that surface water flow into Ventura County is diminished in either quantity or quality and can be reasonably linked to over pumping of the aquifer system and/or surface water discharges to the river within the Santa Clarita Valley, United Water would seek to remedy the problem.	This comment is noted; no text revisions are required.
112	PM (Wisehart)	We appreciate the efforts of the Castaic Lake Water Agency to appropriately plan and augment the water supplies of our watershed as represented by this water transfer project.	This comment is noted; no text revisions are required.
113	PM (Dunn)	When talking to DWR and asking how that happened, because this agency used to have originally a 23,000 acre-feet per year allocation from the state, that the state DWR would transfer and transport to Castaic Lake for Castaic Lake Water Agency, but DWR also had allocations from many farmers and other water users in the San Joaquin Valley. DWR said that those allocations the CLWA had been subsequently purchasing were designed to take turn-outs in the San Joaquin Valley, and those acre-feet were to get off in the San Joaquin Valley. In other words, they were telling me that the Tehachapi pumping station and the aqueduct, that is I guess mostly owned for use by the Metropolitan Water District, was not designed to transport those farmers' allocations here. So I have asked when I was on the agency and I have asked as a public comment when I'm not on the agency what contracts	Please refer to Response to Comment 68. The vast majority of MWD deliveries proceed through the East Branch of the California Aqueduct, not the West Branch, through which Castaic receives its deliveries. Amendment 18 to the CLWA SWP contract with DWR provides that DWR will modify the instantaneous rate of flow to CLWA through the West Branch from 99 to 150 cfs. That increase in instantaneous capacity will be more than sufficient to provide for the annualized increase in capacity shown as needed by CLWA for the transfer on Exhibit A to Amendment 18.

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113 (cont)	PM (Dunn)	do you have with Metropolitan Water District or DWR that says you can transport that water that you are purchasing, those additional purchases here? Doesn't matter is you've banked them up there. Some day you will want to transport them here, and I am told there are no such contracts. We know now that since the Arizona and those people re cutting off MWD's allocations by way of Colorado River, MWD not has to rely more heavily on the DWR an their allocation in this aqueduct and the capacity in the aqueduct. Many unaware, even in our community, that Castaic Lake Water Agency only has 5,000 acre-foot of storage in the Castaic Lake, Many think we've got a real good reservoir here, and we'll really high and dry. And so with the demand that MWD is going to have on the aqueduct now more so demand 'cause you can't get it from the Colorado River, and with the drought situations, and this agency has no contracts that they can transfer those additional allocations here, and I heard nothing in the words tonight just like it was going to be transferred. Nothing was in the Urban Water Management Plan It kind of scares me that we're going to sit here in the drought situation and MWD is going to need their full capacity of Castaic Lake and their full capacity of the state aqueduct, and all this water you purchased you can't bring here. I would like to see that addressed in the EIRs. I would like to see that addressed in the urban water management plans that you can bring this water here.	
114	PM (Mankin)	There is no issue more important in the future of this community than the availability of water. Having available water impacts almost every segment of this community business and consumer marketplace. It's about, again, as all of you know, it's about having local agency being aggressive in the way they find and bring new water into the valley, and most importantly, it's about the economic future of the Santa Clarita Valley. My job as president of the Chamber achieved spokesman of the business community is twofold. First, I work with companies	This comment is noted; no text revisions are required.

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114 (cont)	PM (Mankin)	from outside of this market and try to encourage them to locate their company or business here. I am heavily involved in business recruitment. Second, and probably more important, I am actively involved with working with local companies to assure that they have the right kind of political, economic, and physical infrastructure in place to make it possible for them to grow their respective businesses. Regional economic analysts have predicted – and I heard this at a meeting this spring – they predicted that we will generate some 4,700 new jobs here in the valley this year alone. I suspect we're ahead of that pace already. In looking at specific projects, one project, Center Point Business Park which is now under construction will generate an estimate – estimated 8,000 new jobs over the next few years. Many other such project area either now on the books nor have actually started development. There is no issue more important to as many of these companies than knowing that one, two or ten ears from now they can turn on a water facet and actually have water flow out of it. The issue you are discussing this evening will provide these companies with some sense of security that water, in fact, can and will e available to them during times of drought. I highly encourage you to continue to make the necessary decisions that can and will make these new water resources available to both our existing business community and to those businesses that will soon call us home in the future.	
115	PM (Donlon)	BIA is pleased to see that CLWA has produced a new EIR for the litigation pending on the transaction which can be resolved. The CLWA transfer of 41,000 acre-feet of water from Kern County in 1990 represented wise water planning at the time for the Santa Clarita Valley. Such planning and water management programs on the part of CLWA ensures that its current users as well as future users will be assured safe and reliable drinking water. BIA would like to commend CLWA and its agency and staff for taking these preemptive actions.	This comment is noted; no text revisions are required.
116	PM (Donlon)	We urge you to support and certify this EIR.	This comment is noted; no text revisions are required.

No.	Commenter	Comment	Response
117	EHL	Endangered Habitats League is concerned that your agency is the wrong lead agency for this project. Water transfers are a statewide issue that induce growth and reduce water for farming. They should be addressed by an agency that is qualified under state law to address statewide impacts and will notify all interested parties. In this case, this is the Department of Water Resources.	Please refer to the Master Response and to Comments 2 through 6 and the Responses thereto. The Project has localized (in KCWA's service area, the sending site, and in CLWA's service area, the receiving site) and not statewide impacts. The choice of lead agency is determined by many factors (please refer to the Master Response and to the Responses to Comments 37, 39 and 53), not by nature of the environmental issues raised.
118	EHL	The impacts of this transfer are considerable and affect a wide variety of interest, yet sufficient notification has not occurred, for example to our group.	Please refer to Comment 57 and the Response thereto. CLWA made a good faith attempt to notify all interested parties of the EIR's release, sending approximately 250 copies of the DEIR to agencies (including water agencies), organizations, and individuals throughout the state. The distribution list is included in Attachment B of Volume II of the FEIR. CLWA also provided notices regarding the availability of the DEIR to the County Clerk's office of the affected counties. Additionally, the release of the DEIR was noticed in *The Signal* newspaper, and CLWA held a public meeting to present an overview of the EIR and to receive comments on July 28. The meeting notice was posted on CLWA's website, and the meeting was held at 7 P.M. to facilitate the attendance of the working members of the public. All Kern County member agencies were notified. Please see Attachment B of Volume II of the FEIR, the notice/distribution list.
119	EHL	If such a major transfer is allowed to proceed under the lead agency status of a small regional water agency, it will set a precedent that will affect many major water decisions throughout the state of California. It is imperative that this major change in state policy receive full environmental review and comments from all affected parties. We therefore request that this project be re-noticed by the Dept. of Water Resources acting as lead agency as a project of statewide concern so that all impacts may be disclosed and properly addressed.	Please refer to the Master Response. This comment fails to identify the "major state policy" to which it refers. That particular comment is too vague to allow for a substantive response. Please see the Response to Comment 100.

No.	Commenter	Comment	Response
120	Library	This is in response to the Notice of Completion for the Draft Environmental Impact Report for the Castaic Lake Water Agency Supplemental Water Project Transfer. The County of Los Angeles Public Library has reviewed the document and determined that this project will not have an impact on library services.	This comment is noted; no text revisions are required.
121	SCAG	The Draft EIR, in Section 5.0, Consistency with Adopted Plans and Policies, cited SCAG policies and addressed the manner in which the proposed Project is consistent with applicable core policies and supportive of applicable ancillary policies. This approach to discussing consistency or support of SCAG policies is commendable and we appreciate your efforts.	This comment is noted.

MASTER RESPONSE

TO ISSUES RAISED BY COMMENTERS REGARDING APPROPRIATE LEAD AGENCY TO PREPARE EIR AND THE RELATIONSHIP BETWEEN THIS EIR AND THE EIR FOR THE MONTEREY AMENDMENT

I. CLWA MUST BE THE LEAD AGENCY UNDER THE DOCTRINE OF THE LAW OF THE CASE.

The doctrine of the law of the case requires that CLWA be the lead agency for the Project. Under the doctrine of the law of the case, "Litigants are not free to continually reinvent their position on legal issues that have been resolved against them by an appellate court." (*Yu v. Signet Bank/Virginia* (2002) 103 Cal.App.4th 298, 312.)

The Court of Appeal held with respect to the prior EIR prepared by CLWA for the Project: "We have examined all of appellant's other contentions and find them to be *without merit*. If the *PCL*/tiering problem had not arisen, we would have affirmed the judgment." (*Friends of the Santa Clara River v. Castaic Lake Water Agency* ["*Friends*"] (2002) 95 Cal.App.4th 1373, 1387.) The Court of Appeal ordered that the trial court in that case retain jurisdiction over the Project and this subsequent EIR. (*Id.* at 1388.)

Thus, by deciding that there was no other legal defect with the prior Project EIR prepared by CLWA as the lead agency, and by retaining jurisdiction over this EIR in that case, the Court of Appeal resolved against subsequent legal challenges that CLWA is the proper lead agency for the Project. Indeed, the Court of Appeal ordered CLWA to act as the lead agency: "The trial court shall . . . retain jurisdiction until respondent certifies an EIR complying with CEQA . . .." (*Friends, supra*, 95 Cal.App.4th at 1388; See also the discussion of continuing jurisdiction of the court in Draft EIR ("DEIR") Section 1.2.1.)

II. CLWA MUST BE THE LEAD AGENCY BECAUSE IT HAS PRINCIPAL RESPONSIBILITY TO APPROVE AND CARRY OUT THE PROJECT.

CLWA must act as the lead agency because it has primary responsibility to carry out or approve the Project. The agency that has the primary responsibility to carry out or approve a project must be the lead agency, even if the project would be located within the jurisdiction of another public agency. (See Pub. Res. Code § 21067; 14 Cal. Code Regs. § 15051.) CLWA has the primary responsibility to carry out and approve the Project because CLWA will purchase, arrange for transport of, and use the Project water. (See DEIR Section 1.3 and Chapter 2.) The owner of the Project *res* is under mandate to act as the lead agency. (See *Friends of Cuyamaca Valley v. Lake Cuyamaca Recreation and Park Dist.* (1994) 28 Cal.App.4th 419, 428, *rev. denied.*) There is legal precedent for a local water agency acting as lead agency when it proposes to import supplemental water. (See *Temecula Band of Luiseno Mission Indians v. Rancho Cal. Water Dist.* (1996) 43 Cal.App.4th 425.)

As Section 1.1 of the DEIR indicates, CLWA has the principal responsibility for carrying out and approving the Project because a substantial portion of the Project occurs within CLWA's jurisdiction and substantially affects CLWA.

III. CLWA MUST BE THE LEAD AGENCY BECAUSE IT IS THE LOCAL AGENCY UNDERTAKING THE PROJECT.

CLWA must be the lead agency because it is the local agency undertaking the Project. The local agency undertaking a project must be the lead agency. (See Pub. Res. Code § 21152.) A local agency under CEQA is any public agency that is not a state agency, board or commission. (See Pub. Res. Code § 21062.) Thus, CLWA is a local agency. As explained in Sections 1.1 and 1.3 and Chapter 2 of the DEIR, CLWA will carry out the Project in that it is the major proponent of the Project and has assumed the primary task of effectuating the SWP water supply contract amendment.

Some of the comments to the DEIR suggest that CLWA lacks the institutional authority to undertake the Project because DWR must approve the delivery of the water through the SWP system. DWR is certainly a responsible agency because it must approve the transfer and execute amendments to the CLWA and KCWA SWP contracts. However, DWR cannot be the lead agency merely because it will approve the point of delivery for the Project. A state agency that has a role in approving or carrying out a local agency project must act as a responsible agency. (See *Bakman v. Department of Transportation* (1979) 99 Cal.App.3d 665, 678-679.)

In *Bakman*, the local agency submitting an application for a permit to expand an airport was held to be the lead agency, and the California Department of Transportation was held to be a responsible agency. It did not matter that the DOT had to consider the advantages and disadvantages to the public of the proposed expansion in acting to approve the airport.

DWR's role in the Project contrasts with DWR's role for the Monterey Amendment specified in *Planning and Conservation League v. Department of Water Resources* ["*PCL*"] (2000), 83 Cal.App.4th 892. In *PCL*, the Court of Appeal determined that the DWR was the appropriate lead agency for the Monterey Amendment because the Amendment involved major changes in DWR contracts with all 29 State Contractors, DWR changes in management and operation of the entire SWP system, DWR conveyance of the Kern Fan Element, and DWR facilitation of water transfers throughout the SWP system.

In contrast with *PCL*, the Project does not involve DWR conveying land, DWR changes in management and operation of the entire SWP system, major changes to statewide contracts, or DWR facilitating transfers among all contractors. As Sections 1.1, 1.3, 3.0 and Chapter 2 of the DEIR state, the Project, although requiring the use of SWP facilities, would involve a transfer to CLWA from WRMWSD through KCWA, its representative state contractor. The Project will take place within a limited geographic area and does not implicate the entire SWP water rights and supply framework. In this Project, DWR need only consider the capacity of a small portion of the SWP to deliver CLWA's newly purchased SWP contract water right.

The Project more closely resembles a recent water banking project between CLWA and Semitropic Water Storage District than the Monterey Amendment. Both the Project and the water banking project involve exchange of SWP water between two water contractors pursuant to a local project initiated and carried out by one of the State Contractors.

The recent Superior Court decision regarding that water banking project held that the local State Contractor agency, CLWA, was the appropriate lead agency under CEQA, even though DWR had a role in approving a point of delivery agreement and in facilitating the exchange through local changes in operation of the SWP. (See *California Water Network and the Friends of Santa Clara River v. Castaic Lake Water Agency* (2004), Ventura County Case No. CIV 215327.) The Superior Court in that case concluded: "Castaic is the agency most deeply involved in the planning and execution of this project. It is the appropriate lead agency as described in *PCL*, Public Resources Code Section 21067, and 14 Cal. Code Regs. 15014(a)." That case is currently on appeal.

IV. CLWA MUST BE THE LEAD AGENCY BECAUSE IT CANNOT DELEGATE ITS RESPONSIBILITY OVER ITS SWP CONTRACT RIGHTS.

Because CLWA is the party purchasing the SWP contract right pursuant to the Project, CLWA cannot delegate its review and consideration to another body. "Delegation is inconsistent with the purpose of the review and consideration function since it insulates the members of the council from public awareness and possible reaction to the individual members' environmental and economic values. Delegation is inconsistent with the purposes of the EIR itself." (*PCL*, 83 Cal.App.4th at 907, citing *Kliest v. City of Glendale* (1976) 56 Cal.App.3d 770, 779.)

In *PCL*, the Court of Appeal held that DWR could not delegate its responsibilities over execution of global, long term SWP contract amendments, Kern Fan Element conveyance, and statewide distribution of water because DWR had the appropriate statewide perspective and expertise for all of the elements of the Monterey Amendment. (*PCL*, 83 Cal.App.3d at 906.) In contrast, DWR is not primarily responsible for the elements of the Project, nor do all or even a majority of the Project elements require DWR's statewide perspective and expertise. CLWA has primary responsibility for purchasing, obtaining delivery of, and using the SWP contract rights pursuant to the Project. (See DEIR Chapter 2.) These are not matters requiring DWR statewide perspective and expertise, but are matters for which CLWA must stand accountable to its electorate.

As Section 1.1 of the DEIR indicates, CLWA has the expertise to implement the Project. CLWA has specific expertise to address growth inducement and growth-related impacts in its own service area, which are the primary impacts of the Project. CLWA is the agency with the greatest knowledge of local water supply issues and their relationship to planning decisions.

CLWA has been able to obtain the benefit of DWR's statewide perspective and expertise helpful to environmental analysis of the Project as a result of DWR's participation as a responsible agency. As responsible agencies, KCWA and WRMWSD have been actively involved in the development of the EIR and have provided input regarding baseline conditions and impacts to the WRMWSD service area, including impacts to agricultural resources, land use, air quality, water resources, and biological resources.

DWR comments on the DEIR confirm that DWR has been actively involved in the development of the DEIR: "DWR appreciates inclusion and consultation in the early stages of preparation of this DEIR." (Comment 5)

DWR comments on the DEIR also confirm that, from DWR's perspective, the DEIR has adequately addressed issues involving the SWP: "The [DWR] staff have reviewed the [DEIR] and found that the document adequately and thoroughly discusses the proposed project and its impacts. The DEIR provides a good discussion of the relationship between the 41,000 acre-feet Table A transfer and the current process for preparation of a new EIR for the Monterey Amendment. DWR notes that this DEIR adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations." (DWR Comments 1, 2 & 4)

With CLWA acting as lead agency, dissemination of information about the Project and the availability of the DEIR has been more extensive than CEQA requires. CLWA ensured that the DEIR, and notices of preparation of the DEIR, were widely distributed, sending approximately 250 copies to agencies (including water agencies), organizations, and individuals throughout the State. The notice and distribution list is included as Attachment A to this Master Response. DWR and WRMWSD cooperated with CLWA in the preparation of this notice/distribution list.

V. CLWA NEED NOT SUBORDINATE ITS LEAD AGENCY STATUS TO THE DWR PROGRAMMATIC ANALYSIS FOR THE NEW MONTEREY AMENDMENT EIR.

CLWA need not wait for or rely upon DWR's programmatic analysis in the new Monterey Amendment EIR. CEQA does not require a lead agency for a project to wait for another lead agency to prepare a programmatic EIR that is in the process of adoption; nor does CEQA require that a project EIR tier off a programmatic EIR. CEQA does not mandate that a program EIR be prepared even for a series of actions that can be characterized as one large project. (See 14 Cal Code Regs. 15168.)

The Court of Appeal in *Friends* did not require CLWA to tier off of or await adoption of DWR's new Monterey Amendment EIR. That Court of Appeal and appellant PCL merely suggested tiering as one course of action that CLWA could pursue if CLWA wanted to await action by DWR. (See *Friends, supra*, 95 Cal.App.4th at 1387-1388; See also DEIR Section 1.2.1.) The DEIR does not tier off either the old or new Monterey Amendment EIR. Except to the extent that it tiers off the 1988 CLWA Capital Program EIR, the DEIR stands alone as a project EIR.

There is no need for this project EIR to tier off the new Monterey Amendment EIR because the DEIR is for a stand alone project and because the DEIR contains thorough and independent analyses of the issues that *Friends* cited as lacking as a result of decertification of the original Monterey Amendment EIR. These issues include the potential environmental impacts that would arise as a result of KCWA transferring 130,000 acre-feet of Table A Amount, of which this 41,000 acre-feet transfer is a part. Unlike the 1999 Project EIR, the DEIR specifically identifies the environmental impacts to the SWP and associated facilities and to WRMWSD from the Project both with and without the Monterey Amendment. (See DEIR Sections 3.2, 3.4 & 3.15, particularly Section 3.15.2, and Appendices C & D.) Thus, the DEIR meets the requirements of CEQA to properly inform decision-makers and the public of the Project's environmental consequences.

The DEIR acknowledges use of a DWR modeling tool ("DWRSIM") that will generate slightly different water supply reliability estimates than would be generated from use of the more recent DWR modeling tool that DWR will use for the Monterey Amendment EIR ("CALSIM II"). Both models, however, use similar criteria to simulate SWP operations, and the results of both, while slightly different, are comparable for EIR purposes. (See DEIR Appendix D, Section 2.2.)

The DEIR publishes the water supply reliability results from both models and explains the differences and CLWA's reasons for using the DWRSIM model. (See DEIR Appendix D, Figures 2.1 & 2-2 and Section 2.2.) Thus, decision makers for this Project and public planning agencies interested in regional water planning are fully informed of the possible differences between modeling results as to the reliability of the amount transferred. In addition, the decision makers for this Project and public planning agencies are cautioned not to rely on past water deliveries as a guarantee of future deliveries. (See DEIR Section 1.1.)

The DEIR's use of the DWRSIM model to calculate the reliability of the transferred amount results in the DEIR considering slightly higher water supply reliability than would be the case if the CALSIM II model had been used. As a result, the DEIR analyzes slightly greater growth potential and environmental impacts than it would if the CALSIM II model had been used. However, these differences are not so significant as to cause a difference in analysis of significant impacts between DWR and CLWA (See Comments 2-6 by the DWR).

By using DWRSIM model results for its DEIR analyses, CLWA has used the model results that project the "worst case" growth rate (i.e., the greatest potential growth) and thereby the greatest potential environmental impacts. If one speculates that CALSIM II reliability figures will turn out to be more accurate, the need for the Project still remains, and the impacts will be less than described in the EIR. Thus, the public and decision makers are informed of the greatest possible environmental impact.

Because the DEIR does not rely on the CALSIM II model to project the reliability of the amount transferred, issues raised in various comments about the accuracy of the

CALSIM II model are not germane to this DEIR (those criticisms are discussed separately in the responses to particular comments).

However, the DEIR does use the CALSIM II model to calculate the current environmental setting. It was used for this purpose because it provides the best available estimate of SWP supplies at current levels of SWP demand. (See DEIR Section 3.15.2.2 and Appendix D, Section 6.1.2.2.)

The Settlement Agreement in *PCL* ("Monterey Settlement Agreement") does not require CLWA to wait for DWR certification of DWR's new Monterey Amendment EIR before CLWA can certify an EIR for the Project. (See DEIR 1.2.2.) Section III(C)(4) of the Monterey Settlement Agreement requires that the new Monterey Amendment EIR include, *inter alia*, analysis of the potential environmental effects relating to Attachment E Transfers and this Project.

Section III(C)(4) of the Monterey Settlement Agreement does not state that the new Monterey Amendment EIR must treat the Attachment E Transfers and this Project as new projects. Section III(C)(4) of the Settlement Agreement only states that the Monterey Amendment EIR must analyze the effects of the Attachment E Transfers and this Project "as actions that relate to the potential environmental impacts of approving the Monterey Amendments." Thus, Section III(C)(4) of the Settlement Agreement merely requires that the Monterey Amendment EIR consider the cumulative impacts of the Attachment E Transfers and the Project in its review of the Monterey Amendment.

Any claim that the Settlement Agreement requires either the Attachment E Transfers or this Project to be reviewed by the DWR as new projects as part of the new Monterey Amendment EIR is disavowed in the Settlement Agreement. Section III(D) states that the Attachment E Transfers are recognized as final. With respect to this Project and the *Friends* litigation that necessitated preparation of this EIR, Section III(E) of the Settlement Agreement states: "The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." One of the actions ordered by the Court of Appeal in "that pending litigation" was CLWA's certification of a new EIR (this EIR) for the Project. (See *Friends, supra*, 95 Cal.App.4th at 1388.) Thus, the Settlement Agreement is consistent with the present EIR process.

The parties to the Settlement Agreement acknowledged that DWR would not be required to act as the lead agency for the transfer of Table A Amounts between existing SWP Contractors. Sections I(D) and VII(D) incorporate by reference Attachment D Principles Regarding Public Participation Process in SWP Contract Negotiations. Paragraph 4 of the Attachment D Principles provides: "When DWR is a responsible agency, (e.g., when existing SWP Contractors agree to transfer entitlement between themselves), the public participation will be scheduled to facilitate coordination with the lead agency's CEQA process."

Section 4 – Changes to DEIR Text

4.0 CHANGES TO THE DEIR TEXT

Executive Summary and Chapter 1, Introduction

The following text from DEIR Page ES-4, lines 20-31, and DEIR Page 1-4, lines 13-23, should be deleted:

"It should be noted at this point that the Settlement Agreement concerning the PCL Litigation creates a specific exclusion for this Project from any prohibitions against transfers of State Water Project Table A Amounts by the Settlement Agreement. The exclusion states:

> With respect to Section III(c)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation in the Los Angeles County Superior Court following remand from the Second District Court of Appeal (See Friends of the Santa Clara River v. Castaic Lake Water Agency 95 Cal.App.4th 1373, 116 Cal.Rptr.2d 54 (2002); review denied, April 17, 2002). The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

The above text should be replaced with the following:

"The Monterey Amendment Settlement Agreement does not require that the new Monterey Amendment Program EIR be certified before an EIR for this Project can be certified, nor does it require that the EIR for this Project tier off the new Monterey Amendment Program EIR. The Monterey Amendment Settlement Agreement does not require that the new Monterey Amendment Program EIR serve as the EIR for this Project. Section III(C)(4) of the Monterey Amendment Settlement Agreement only requires DWR to analyze the potential impacts resulting from this Project and other transfers as they relate to the potential environmental impacts of approving the Monterey Amendment. Section III(E) of the Monterey Amendment Settlement Agreement clarifies that the Section III(C)(4) analysis is limited by remedies or other actions of the Los Angeles County Superior Court in *Friends I*, stating:

> With respect to Section III(C)(4)(b) regarding the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation in the Los Angeles County Superior Court following remand from the second District Court of Appeal (*See Friends of the Santa Clara River v. Castaic Lake Water Agency 95 Cal.App.4th 1373, 116 Cal.Rptr.2d 54 (2002); review denied, April 17, 2002*). The Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

Chapter 8, References

Page 8-8, line 21. The word "Draft" should be replaced with "Final."

Appendix C, Agricultural Resources

The May 23, 2003 report by Northwest Economic Associates should be replaced with the following final report dated May 28, 2003.

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Quality Solutions to Complex Problems
Northwest Economic Associates
www.nwecon.com

November 19, 2004

Mary Lou Cotton, Water Resources Manager
Castaic Lake Water Agency
27234 Bouquet Road
Santa Clarita, CA 91350

Dear Ms. Cotton:

We have reviewed the draft economics report and now view that report as final. Please mark your records accordingly, and we will forward a copy of the final report to you. Thank you.

Sincerely yours,

Duane A. Paul

Duane A. Paul, Ph.D
Senior Consultant

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Effects on Agricultural Production from Transferring 41,000 Acre-Feet of State Water Project Entitlement from Wheeler Ridge-Maricopa Water Storage District

FINAL REPORT

Prepared for

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

By

Northwest Economic Associates
P.O. Box 5129
Fair Oaks, CA 95628

May 28, 2003

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Executive Summary

- Between 1990 and 1999, permanent crops increased from 30 percent to 38 percent of cropped land in Wheeler Ridge-Maricopa Water Storage District (WRMWSD). Between 1999 and 2001, they rose to 48 percent. Vineyards are the single most important permanent crop. Permanent cropped acreage has increased in both surface water and ground water service areas of the district.

- Because of the large capital costs for establishing a vineyard, grove, or orchard, the increase in permanent crop acreage suggests that farmers in the service area are confident that they will be able to consistently obtain the water necessary for their operations. The actions of WRMWSD have increased the reliability of water and helped offset the rising costs of SWP surface water. Growers are able to produce more labor-intensive, higher value crops.

- WRMWSD has diversified its water supply and management portfolio dramatically since the 1980s. The district's SWP entitlement remains an integral component of total supplies, but supplemental sources now provide a substantial drought buffer for the district.

- WRMWSD has invested in ground water recharge storage and recovery systems outside of the WRMWSD service area as well as distribution and pumping infrastructure in order to increase the reliability of water in dry years. Banking surface water when available or conjunctively using ground water in wet and normal years allows WRMWSD to have a more reliable water supply when normal demand exceeds supplies available from the SWP. This banking and reliability more than offsets any of the impacts of the 41,000 AF transfer of SWP surface water.

- The transfer of 41,000 AF of SWP water will have little or no impact on cropping patterns and production in WRMWSD. The district has taken adequate steps to insure that more reliable water supplies from various sources will be available at lower cost to offset the transfer. The transfer and resulting payment for the transferred water reduce the fixed costs of the unneeded SWP entitlement and thus reduce the financial burden to WRMWSD. The district is better able to continue to improve its water infrastructure and supply. Without this

infrastructure and reliable supply, more lands will likely be removed from production temporarily or permanently.

- During the last 12 years, WRMWSD has experienced a significant shift in agricultural cropping patterns. Farmed land in the WRMWSD has varied from a low of 60,370 acres in 1991, a severe drought year, to a high of 94,499 acres in 1998. Crop acreage fluctuated by an average of 11.6 percent each year between 1990 and 2001. The principal factors causing the variations likely have included water availability, crop rotations, and crop prices.

- Annual crop acreage has declined, while acreage in permanent crops has increased. Annual crop acreage fell by 13,376 acres in the WRMWSD surface water service areas from between 1990 and 1999 and by a further 9,068 acres between 1999 and 2001. In the surface water service areas, cotton acreage declined by 15,534 acres between 1990 and 1999 and by a further 1,528 acres between 1999 and 2001. Over the same two periods in the groundwater service areas, annual crop acreage increased by 8,668 and decreased by 5,128, respectively.

- Many economic factors influence cropping decisions and resultant cropping patterns. Changes in crop prices, particularly for cotton, and the total of variable costs (including water prices), as well as strong demands for grapes and citrus, appear to have influenced the decisions of farmers in the WRMWSD regarding crop choices.

- As overall production costs increase, including those for water, cotton growers find it harder and harder to stay in production. Rotation crops such as grain and hay do not even cover variable costs in some years. Growers are better off to fallow lands than to continue production of these crops.

- Fallowing has been a regular part of cropping patterns in WRMWSD. Between 1991 and 1998, the amount of fallowed land decreased by 34,000 acres. Since 1998, fallowed acreage has increased by 11,600 acres. Fallowing is attributable to many different factors, including crop prices, cultivation practices, production costs, and others. Fallowing thus varies widely between years. From 1990 through 2001, the amount of land fallowed fluctuated annually by 34.9 percent, or 9,651 acres.

- During the early 1990s drought period, it became apparent that Department of Water Resources (DWR) announced water shortages could become a reality and that water costs would soar when water was not delivered. Following this period of drought impacts, WRMWSD experienced a significant shift of acreage to higher value crops such as fruits and vegetables and a reduction of acreage in lower value crops such as cotton, hay, and other field crops. The last two to three years appears to be a period of leveling out of new perennial crop plantings and increased fallowing.

- Fallowing has increased since 1998 even though State Water Project (SWP) deliveries, with the exception of 2001, have been relatively high. The increase is probably due to market conditions, particularly for cotton, as well as other economic and agronomic reasons.

- Total applied agricultural water within WRMWSD averaged about 251,000 acre-feet (AF) annually between 1990 and 1999 and about 259,000 AF annually between 1999 and 2001. Over those two periods, total WRMWSD deliveries from all sources averaged 158,000 AF and 168,000 AF annually, respectively. The remainder was supplied by on-farm ground water pumping, user input, or other water supplies available to farmers in the WRMWSD area.

- Before the 41,000 AF transfer, WRMWSD held a water supply contract for about 238,000 AF of SWP water. After the transfer, the remaining 197,000 AF of contract amount, with supplemental supplies, should leave the district comfortably able to meet demands in normal and wet years. Neither cost nor availability should be adversely affected in those years, and the transfer should not, of itself, cause an increase in fallowing.

- The WRMWSD supplemental water supplies were developed primarily to help meet demands during dry years. Those sources will more than make up for any dry year shortfall incurred as a result of the 41,000 AF of water transferred.

Introduction

Agriculture is the main industry in the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) service area. Agricultural lands in this area are among the most productive in Kern County and the entire state. Water is a key input to agriculture here, and has been instrumental in the production of a variety of crops destined for both domestic and international markets. The cost and availability of various water sources have significant effects on farm profitability and survivability.

Over time, farmers in the service area have changed cropping mixes, adopted different rotations, and used different water sources for their operations. These changes are an outgrowth of the many factors incorporated into the decision-making framework used by farmers, some unique to each farm, others common to all.

This report considers the farm-level impacts of the 41,000 acre-feet (AF) transfer of State Water Project (SWP) entitlement from WRMWSD to Castaic Lake Water Agency (CLWA). The focus of the analysis is on whether the transfer will cause changes in agricultural practices, including additional land fallowing within WRMWSD. The report is presented in three sections. The first is an assessment of pertinent existing conditions within WRMWSD, including information on components of water supply and uses. The discussion also incorporates a review of crop acreages and use of various water sources over time. The second section describes the decision-making framework which farmers seeking specific economic objectives follow in determining which crops to plant and which inputs, including water, to use on these crops. This development follows widely-accepted principles of farm management and agricultural economics. The third section discusses the relationship of the transfer on agricultural operations within WRMWSD.

Existing Conditions

Cropping Patterns[1]

Crops grown within the WRMWSD service area had a farm-level production value of nearly $283 million in 2001 (see Table 1).[2] Grapes provided the greatest dollar value, at 31 percent of the total, followed by mixed produce and melons at 26 percent, citrus at 25 percent, and cotton at seven percent. Total value in 2001 was 6 percent greater than the comparable value in 1999, and the value in 1999 was 23 percent higher than that in 1990. The allocation of value among crops has also changed a great deal since 1990, when grapes accounted for just 18 percent of the total, mixed produce and melons 36 percent, citrus 11 percent, and cotton 20 percent. Because of the 1987-92 drought that so severely impacted Kern County and the entire San Joaquin Valley, the value of crop production in WRMWSD fell between 1990 and 1992 and then rose to exceed the 1990 value only by 1995.

Since 1990, net farmed land[3] in WRMWSD has varied from a low of 60,370 acres in 1991 to a maximum of 94,499 acres in 1998 (see Table 2). For the 12 years shown, the normal annual variation in net farmed land was 11.6 percent,[4] or about 9,700 acres. As shown in Figure 1, the general trend in net cropped acreage was positive until about 1999.[5] Similarly,

1 Cropping information for WRMWSD is taken from annual crop reports provided by the district for the years 1990 through 2001.

2 Based on crop acreages reported by WRMWSD and average price and yield data reported for Kern County by the Kern County Department of Agriculture.

3 Measured as total cropped less double-cropped land.

4 Measured as the coefficient of variation, calculated as the standard deviation divided by the mean. See Snedecor and Cochran.

5 A two-period moving average is used to reduce variation typical between years.

the general trend in the acreage of annual crops was positive until about 1996, then notably negative. In 1990, annual crops accounted for 70 percent of cropped acres.[6] By 1999, the annual crop share had fallen to 62 percent and by 2001 to 52 percent. Cotton, historically the predominant annual crop in WRMWSD, represented 61 percent of annual cropped land in 1990, but only 36 percent in 1999 and 37 percent in 2001. From its peak in 1996, land in annual crops fell 9,011 acres by 1999 and an additional 14,196 acres by 2001. Cotton accounted for nearly 80 percent of that reduction. Conversely, the acreage shares of mixed produce and melons rose from 31 percent in 1990 to 38 percent in 1999 and fell to 35 percent in 2001. The share of irrigated grains increased from zero in 1990 to 18 percent in 1999 and fell to 14 percent in 2001.

The negative trend for annual crops has been offset almost completely by the increases in permanent crop acreage. In 1990, permanent crops accounted for 30 percent of cropped land, with vineyards comprising 40 percent of the total, deciduous nuts 26 percent, citrus 23 percent, and deciduous fruits eight percent. In 1999, permanent crops accounted for 38 percent of cropped land, with vineyards 43 percent of the total, deciduous nuts 23 percent, citrus 27 percent, and deciduous fruits five percent. By 2001, permanent crops represented 48 percent, with vineyards at 44 percent of the total, deciduous nuts 21 percent, citrus 30 percent, and deciduous fruits five percent.

Table 2 shows fallowed land[7] ranging from a maximum of 51,620 acres in 1991 to a minimum of 17,649 acres in 1998. The spike in fallowed land in 1991 was attributable largely to the ongoing drought in California and sharply-reduced water supplies, together with higher costs of water from virtually all sources. Because of its different water sources, which are even more diversified today, WRMWSD was able to provide some water to farmers in 1991. Subsequently, fallowed acreage declined sharply until 1998 and has risen since then (see Figure 2).

Farmers fallow land for many reasons, both agronomic and economic. Agronomic reasons include the use of fallowing as part of crop rotations. Economic reasons include such factors as the market conditions and prices for the crops typically grown on the land and the cost and availability of production inputs, including water.

Without information from individual landowners, it is very difficult to distinguish between land that is fallowed temporarily and land that is removed from production either permanently or for a long term. The California Department of Conservation, which monitors land use with aerial photos taken every two years, reports previously productive, but

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6 Calculated relative to total cropped land because some annual cropland is double cropped.

7 As shown in WRMWSD crop reports. Fallowing generally refers to temporarily removing land from production to conserve moisture or to control pests.

currently idle, land as fallowed for at least three monitoring cycles (that is, six years).[8] Ultimately, land may be fallowed for eight years before it is no longer considered to be in active agricultural use. Thus, it is not at all apparent that the increase in fallowed land with the WRMWSD service area since 1998 is attributable to a reduction in SWP entitlements within the district. Rather, the increase appears to be related more closely to crop markets and prices.

8 Molly Penberth, California Department of Conservation, April 30, 2003, personal communication.

Table 1
Farm Level Value of Production, by Crop and Total, WRMWSD

Crop/Acres	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cotton	$43,019,069	$16,689,629	$27,663,667	$33,714,831	$37,911,348	$34,831,452	$40,411,911	$38,485,118	$19,421,271	$26,461,166	$25,490,070	$18,582,103
Sugar Beets	$751,012	$672,471	$840,597	$862,677	$373,257	$466,458	$152,213	$0	$205,582	$0	$0	$0
Grain	$886,863	$953,001	$1,384,366	$2,017,655	$1,253,304	$3,138,780	$5,285,858	$3,058,269	$3,995,594	$4,101,029	$2,741,375	$2,808,474
Green Feeds	$1,396,620	$687,643	$705,721	$989,778	$1,415,864	$1,345,331	$1,415,121	$2,275,038	$1,968,264	$2,059,065	$1,980,664	$2,539,051
Mixed Produce	$77,196,114	$73,993,874	$37,366,098	$48,444,836	$41,735,435	$57,430,236	$49,788,591	$59,466,855	$54,425,094	$80,285,572	$72,435,938	$66,370,246
Melons	$0	$0	$15,178,882	$11,810,000	$17,527,192	$13,455,741	$13,424,661	$14,715,280	$13,970,325	$10,559,005	$8,968,780	$8,727,570
Vineyard	$38,927,352	$31,865,396	$37,027,240	$45,790,453	$45,763,512	$55,045,475	$64,192,513	$80,301,649	$73,479,669	$84,173,400	$84,581,368	$86,940,385
Deciduous Nuts	$18,754,834	$14,452,109	$12,384,408	$19,367,333	$16,053,249	$15,309,727	$18,210,636	$16,487,093	$16,267,367	$11,491,679	$13,021,446	$13,035,331
Deciduous Fruit	$11,206,519	$11,677,651	$7,492,311	$8,957,975	$7,888,785	$12,950,470	$11,608,728	$9,852,647	$10,991,313	$8,961,073	$14,345,391	$11,845,011
Citrus	$23,176,485	$10,233,881	$14,588,823	$31,144,607	$38,931,957	$39,672,318	$34,076,041	$55,669,042	$58,690,301	$37,264,234	$73,962,958	$71,330,901
Pomegranates	$375,112	$355,687	$917,011	$1,007,081	$1,324,308	$1,350,818	$1,408,974	$758,959	$647,472	$1,227,749	$454,063	$704,100
Eucalyptus	$15,437	$14,637	$36,576	$40,168	$22,638	$23,091	$76,269	$41,083	$36,396	$61,876	$22,884	$35,485
Jojoba	$997,211	$120,026	$519,901	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Value	$216,702,627	$161,716,007	$156,105,602	$204,147,394	$210,200,848	$235,019,897	$240,051,517	$281,111,032	$254,098,647	$266,645,848	$298,004,936	$282,918,657

Table 2
WRMWSD Annual and Permanent Crop and Other Acreage

Crop	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Annual												
Cotton	38,071	16,192	24,621	31,063	33,369	36,795	34,702	32,369	24,953	20,781	22,110	16,204
Sugar Beets	723	746	825	689	370	409	151	0	181	0	0	0
Grain	2,692	3,450	9,859	8,162	3,739	9,530	11,804	8,203	15,586	0	0	0
Grain, Irrigated	0	0	0	0	0	0	0	0	0	10,605	7,378	6,208
Grain, Dry Farmed	0	0	0	0	0	0	0	0	0	1,655	2,117	3,099
Green Feeds	1,836	1,146	1,206	1,442	1,514	2,002	1,737	2,923	2,938	3,340	2,933	2,924
Mixed Produce	19,504	17,469	12,971	12,414	13,618	13,333	14,770	16,408	14,553	17,783	16,889	13,246
Melons	0	0	4,064	3,361	3,832	4,073	3,965	3,924	3,845	3,954	2,350	2,241
Total Annual	62,826	39,003	53,546	57,131	56,442	66,142	67,129	63,827	62,056	58,118	53,777	43,922
Surface Water Service Areas	43,092	20,947	34,731	36,939	35,870	43,153	45,183	42,945	40,634	29,716	26,591	20,648
Ground Water Service Areas	19,734	18,056	18,815	20,192	20,572	22,989	21,946	20,882	21,422	28,402	27,186	23,274
Permanent												
Vineyard	10,719	9,883	9,633	9,708	9,778	10,774	12,547	14,222	15,315	15,745	17,387	17,701
Almonds	0	0	5,103	5,225	5,301	5,155	5,540	5,524	6,099	6,282	6,410	5,994
Pistachios & Walnuts	0	0	1,797	1,797	2,098	2,100	2,100	2,100	2,099	2,099	2,099	2,376
Deciduous Nuts	6,865	6,899	6,900	7,022	7,399	7,255	7,640	7,624	8,198	8,381	8,509	8,370
Deciduous Fruit	2,074	2,102	2,013	2,008	2,060	2,066	2,154	2,205	2,104	1,989	2,058	1,928
Citrus	6,212	6,233	6,675	6,932	7,241	7,471	7,870	8,482	9,011	9,737	11,123	12,029
Pomegranates	243	243	351	351	351	351	351	351	338	377	377	377
Eucalyptus	10	10	14	14	6	6	19	19	19	19	19	19
Jojoba	646	82	199	0	0	0	0	0	0	0	0	0
Total Permanent	26,769	25,452	25,785	26,035	26,835	27,923	30,581	32,903	34,985	36,248	39,473	40,424
Surface Water Service Areas	24,824	24,025	24,339	24,598	25,242	26,005	28,081	29,923	31,364	32,350	35,021	35,533
Ground Water Service Areas	1,945	1,427	1,446	1,437	1,593	1,918	2,500	2,980	3,621	3,898	4,452	4,891
Total Cropped	89,595	64,455	79,331	83,166	83,277	94,065	97,710	96,730	97,041	94,366	93,250	84,346
-Double Crop	5,314	4,085	3,525	4,510	4,233	4,663	5,092	5,441	2,542	3,155	2,622	1,541
Net Farmed	84,281	60,370	75,806	78,656	79,044	89,402	92,618	91,289	94,499	91,211	90,628	82,805
+Fallow Lands	27,588	51,620	36,031	33,189	32,980	22,523	19,584	20,949	17,649	20,855	21,659	29,291
Total Cultivated	111,869	111,990	111,837	111,845	112,024	111,925	112,202	112,238	112,148	112,066	112,287	112,096
Miscellaneous	6,840	6,847	6,839	6,843	6,849	6,841	6,859	6,860	6,856	6,850	6,864	6,852
Deferred Lands	1,659	1,659	1,659	1,659	1,659	1,659	1,659	0	0	0	0	0
Other Lands	668	738	880	968	919	1,073	1,098	1,129	1,183	1,270	1,361	1,257
Native Vegetation	25,626	25,428	25,405	25,305	25,169	25,122	24,802	26,393	26,434	26,434	26,434	26,739
Total District	146,662	146,662	146,620	146,620	146,620	146,620	146,620	146,620	146,621	146,620	146,946	146,944

Figure 1
Annual, Permanent, and Net Crop Acreage, WRMWSD

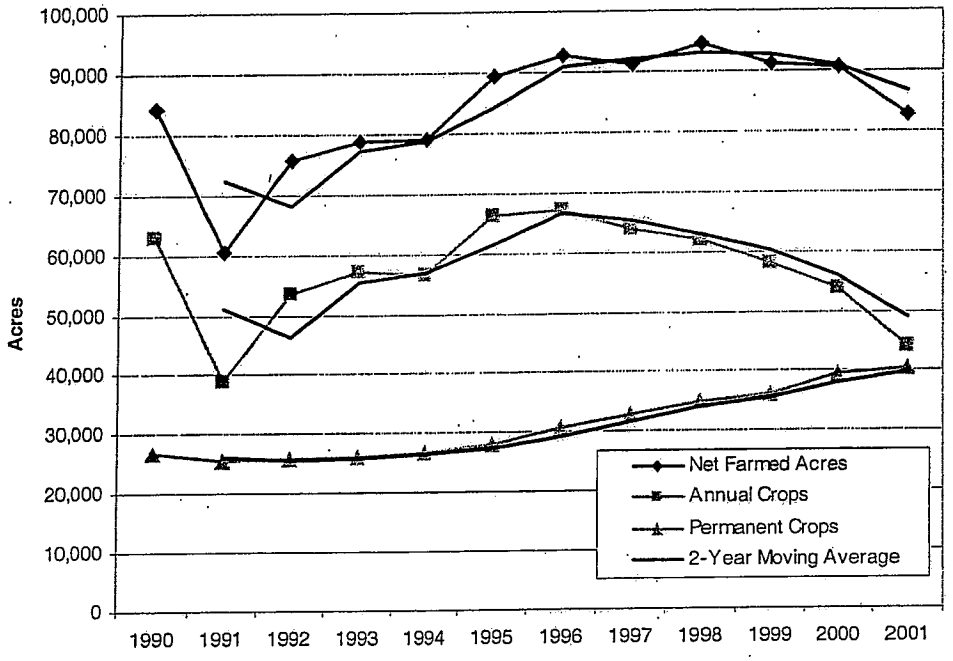
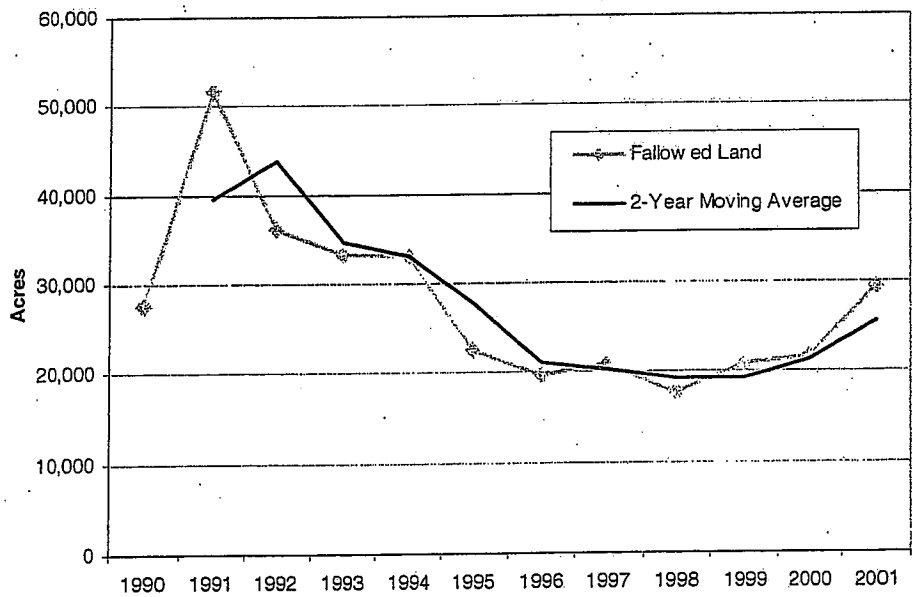


Figure 2
Fallowed Land, WRMWSD



Cropping Pattern Changes by Service Area

WRMWSD includes lands served by surface water or ground water or, in some cases, both. Cropped acreage in the surface water service areas (without exclusion of double cropping) fell by 5,850 acres between 1990 and 1999 and a further 5,885 acres between 1999 and 2001. Cropped land in the ground water areas increased 10,621 acres between 1990 and 1999 and fell 4,135 acres between 1999 and 2001.[9] The amount of annual crops in surface water areas fell by 13,376 acres between 1990 and 1999 and a further 9,068 acres between 1999 and 2001. For the two periods in the ground water areas, annual crop land increased by 8,668 acres and fell by 5,128 acres. The acreage of permanent crops rose in both surface water and groundwater service areas (see Figures 3 and 4).

The decline in annual crops and increase in permanent crops in surface water areas relates well to lower prices for some annual crops and higher water prices over the period. As discussed elsewhere in this section, cotton prices have fallen in both nominal and real terms since 1990, and it is no longer feasible to grow cotton in many parts of Kern County. Many cotton producers have been impacted by a "cost-price squeeze" quite common in agriculture.

The shift to permanent crops in the surface water service areas suggests that farmers in those areas are confident that they will be able to obtain water regularly either from within or outside WRMWSD, with or without the 41,000 AF of water under consideration. The capital investment for establishing an orchard, grove, or vineyard can easily exceed $8,000 per acre, excluding land, and farmers will not make those investments unless they are confident that they will be able to obtain adequate water for commercial production or, at minimum, keeping the trees or vines alive. While SWP water certainly remains an important part of the total WRMWSD supply, the SWP component of supply has been supplemented by the development and availability of several sources of supplemental water discussed elsewhere in this section.

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9 Wheeler Ridge-Maricopa Water Storage District, various years, "Crop and Land Use Summary," Bakersfield. The changes also reflect, in part, the reclassification of lands within WRMWSD.

Figure 3
Annual Crop Land in Surface and Ground Water Service Areas, WRMWSD

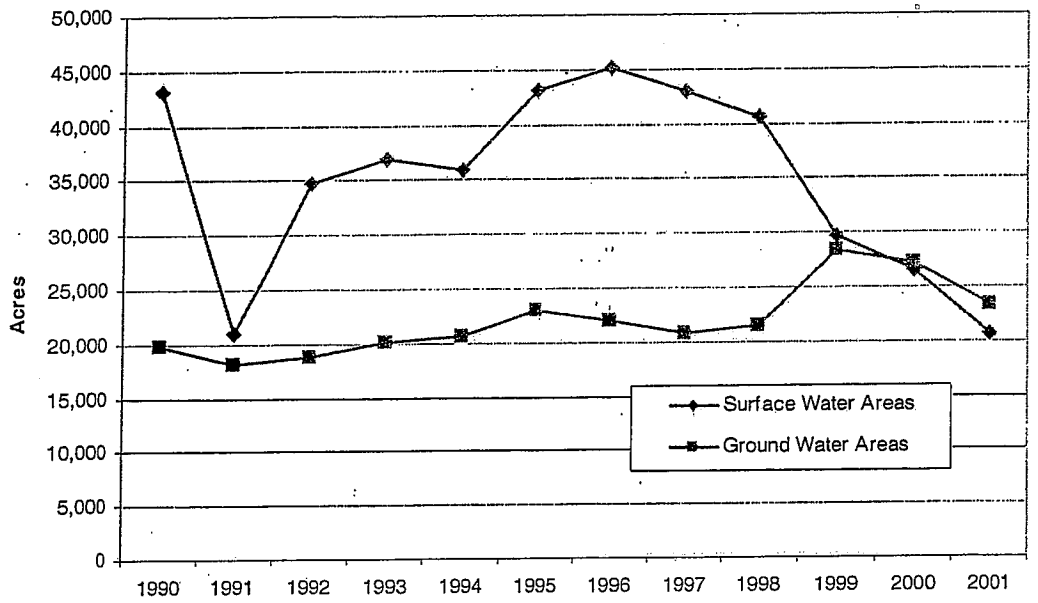
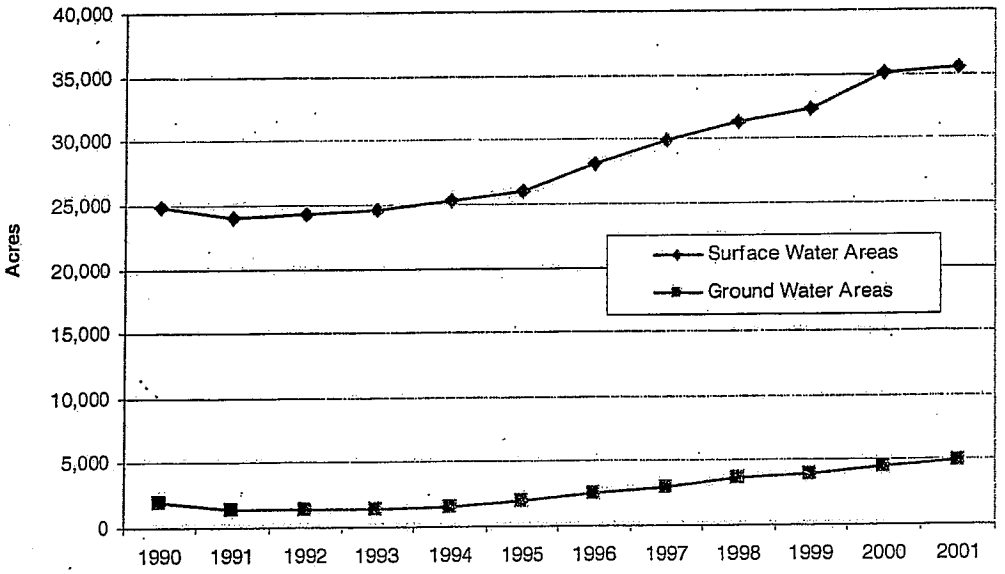


Figure 4
Permanent Crop Land in Surface and Ground Water Areas, WRMWSD



Factors Accounting for Cropping Pattern Changes

Changes in cropping patterns, whether from one type of annual crop to another or from annual crops to permanent crops, may be due to several factors. Some of the more important within WRMWSD may include:[10]

- Market conditions and crop prices;
- Input requirements and costs;
- Soil and micro-climate characteristics;
- Crop rotation requirements, including fallowing;
- Water availability and cost;
- Government programs; and
- Contracts with crop processors.

Absent detailed information from each farmer in an area, it is not possible to attribute changes in cropping patterns to any of these or other individual factors. However, changes in prices and production costs for key crops, particularly cotton, grapes, and citrus, and in water costs and availability appear to have played important roles.

Cotton prices have declined in both nominal and real terms since 1990. Acala cotton grown in Kern County[11] sold at an average farm price of $0.77 per pound in 1990. Yield averaged 1,200 pounds per acre, and gross revenue thus averaged $924 per acre.[12] In 2001, the last year for which data are currently available, the average farm price for Acala cotton grown in Kern County was $0.68 per pound. Yield averaged 1,342 pounds per acre, and gross revenue averaged $905 per acre.

While average per-acre gross revenue fell 2.1 percent between 1990 and 2001, costs of production have increased sharply and profitability has declined or disappeared for many growers. In 1995, average total costs to produce cotton in the San Joaquin Valley were estimated at $815 per acre, assuming a yield of 1,250 pounds of lint and application of 2.5

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10 These are discussed in more detail in the section on farm-level decision making.

11 Acala cotton has accounted for 76 to 93 percent of all Kern County cotton since 1990.

12 Kern County Department of Agriculture.

AF of water at $50 per AF.[13] The total cost figure excludes a payment for management or risk. Average gross revenue for cotton that year in Kern County was reported to be $815 per acre.[14] Thus, the average gross revenue for cotton in 1995 would just cover all costs, but not cover a payment to compensate for management and risk. Moreover, WRMWSD delivered water costs that year were between $58 and $193 per AF, depending on the zone of the district to which the water was delivered.[15] Thus, all other factors unchanged, cotton production in WRMWSD that year would have generated losses of between $20 and $483 per acre, disregarding any compensation for risk or management.[16]

Current published costs are $1,002 per acre for Acala cotton, assuming a lint yield of 1,250 pounds per acre and 2.5 AF of water at $60 per AF, but also excluding payments for risk and management.[17] Under these conditions and based on current cotton prices (assumed at $0.70 per pound, including loan deficiency payments), gross revenue would exceed total costs by $61 per acre, but without a return for management or risk. However, WRMWSD delivered water costs ranged from $89 to $230 per AF in 2001 and are expected to range from $101 to $260 per AF for all of 2002.[18] Clearly, cotton production is infeasible in parts of WRMWSD, and the result has been a continued shift from cotton to other, higher-profit crops

Many factors may affect the rate at which farmers change their crop mix. First, the market demands for fruits, nuts, and vegetable crops relative to supplies may signal that additional plantings of those crops would have adverse effects on prices. Second, processing capacity and the unavailability of processor contracts may limit the amount of vegetable crops such as tomatoes a farmer chooses to grow. Third, field and grain crops, while sometimes unprofitable in isolation, remain important parts of diversified crop rotations. Fourth, the crop history and risk characteristics of farmers may reduce the attraction of changing established cropping patterns.

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13 University of California Cooperative Extension, 1995.

14 Kern County Department of Agriculture.

15 Robert Kunde, WRMWSD, April 1, 2003, personal communication.

16 It is acknowledged that every farm is unique, characterized by soil type, debt levels, water sources and other factors. Moreover, acreage data show that cotton is clearly still profitable on some farms in WRMWSD. However, the sharp declines in cotton acreage since 1990 indicate that the crop is less profitable or unprofitable in many parts of the district.

17 University of California Cooperative Extension, 2003.

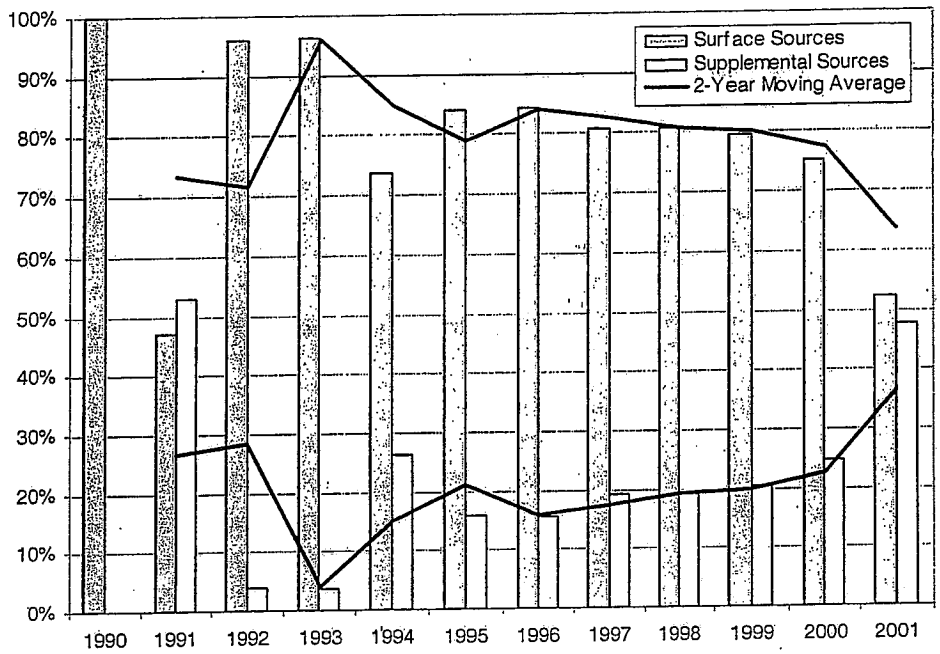
18 Robert Kunde, WRMWSD, April 1, 2003, personal communication.

Water Sources and Costs

WRMWSD has a contract for SWP water through Kern County Water Agency and regularly provides that water to farmers as supplies permit. However, WRMWSD has also developed district wells and has access to other water sources such that its "water portfolio" is much more diversified today than it was in the late 1980s or early 1990s. Much of this diversification was in response to the nearly complete abrogation of the State of California's responsibility to provide a reliable water supply from the State Water Project, aggravated by the effects of the 1987-92 drought.

Several individual sources collectively comprise the "supplemental water." These include district wells, Blanco Rosa Improvement District wells, Kern Water Bank, Pioneer Project, Berrenda Mesa project, and miscellaneous supplies. Figure 5 shows that these alternative sources have become an increasingly-important component of total WRMWSD potential water availability. The two-period moving average trend line is clearly upward sloping, while that for traditional surface sources is declining. It should be noted that the data on which the figure is based include potential surface and supplemental water supplies rather than actual deliveries. Potential surface supplies are calculated as the sum of Article 21 water, carryover, user input, and the product (SWP Entitlement * Percentage of SWP Allocation) for each year.

Figure 5
Surface and Supplemental Water Sources, WRMWSD



Water Use

WRMWSD maintains records for all water deliveries it makes each year. It does not obtain information on ground water pumping by individual farmers. Thus, total water use within the district for any given year is not a single number that can be taken from a report. Bookman-Edmonston Engineering developed average applied water requirements for crops grown in WRMWSD.[19] For this report, estimates of total applied water within WRMWSD were developed by using these figures and multiplying those rates by acreages taken from the annual WRMWSD crop reports. The application rates used are shown in Table 3. The estimated applications, total WRMWSD deliveries, and estimated water applied, but from other sources, are shown in Table 4.

For the period from 1990 through 1999, total annual deliveries by WRMWSD averaged 158,056 AF. From 1999 through 2001, they averaged 168,335 AF. Based on the application rates shown in Table 3 and the crop acreages shown in Table 2, WRMWSD deliveries accounted for about 63 percent of total water applied to crops in the service area from 1990 through 1999 and 65 percent from 1999 through 2001. It should be noted that the estimated applied water figures in Table 4 represent potential applications and assume that farmers were able to obtain all required water in each year. For years in which all water supplies were limited (e.g., 1991), the applied water figures shown overstate actual applications.

Table 3
Average Applied Water Requirements for Various Crops Grown in WRMWSD

Crop	Average Applied Water Requirement (Acre-feet per acre)
Cotton	3.00
Sugar beets	4.20
Grains	1.35
Green feeds	5.00
Mixed produce	2.20
Melons	2.20
Vineyards	2.80
Deciduous nuts	3.90
Deciduous fruits	3.90
Citrus	3.60
Pomegranates	3.60
Eucalyptus/jojoba	2.50

19 Bookman-Edmonston Engineering.

Table 4
Estimated Applied Water, by Crop and Source, WRMWSD Service Area (Acre-Feet)

Crop	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cotton	114,213	48,576	73,863	93,189	100,107	110,385	104,106	97,107	74,862	62,343	66,327	48,612
Sugar beets	3,037	3,133	3,465	2,894	1,554	1,718	634	0	760	0	0	0
Grain	3,634	4,658	13,310	11,019	5,048	12,866	15,935	11,074	21,041	16,551	12,820	12,566
Green feeds	9,180	5,730	6,030	7,210	7,570	10,010	8,685	14,615	14,685	16,700	14,665	14,620
Mixed produce	42,909	38,432	28,536	27,311	29,960	29,333	32,494	36,098	32,017	39,123	37,158	29,141
Melons	0	0	8,941	7,394	8,430	8,961	8,723	8,633	8,459	8,699	5,168	4,930
Vineyard	30,013	27,672	26,972	27,182	27,378	30,167	35,132	39,822	42,882	44,086	48,684	49,563
Deciduous Nuts	26,774	26,906	26,910	27,386	28,856	28,295	29,796	29,734	31,972	32,686	33,185	32,639
Deciduous Fruit	8,089	8,198	7,851	7,831	8,034	8,057	8,401	8,600	8,206	7,757	8,026	7,519
Citrus	22,363	22,439	24,030	24,955	26,068	26,896	28,332	30,535	32,436	35,053	40,043	43,308
Pomegranates	875	875	1,264	1,264	1,264	1,264	1,264	1,264	1,217	1,357	1,357	1,357
Eucalyptus/jojoba	1,640	230	533	35	15	15	48	48	48	48	48	48
Total estimated applied water [1/]	262,726	186,848	221,704	237,670	244,283	267,965	273,549	277,527	268,584	264,402	267,480	244,303
Total WRMWSD Deliveries	187,335	65,274	125,979	146,524	160,564	162,138	202,581	198,305	149,292	182,570	183,929	138,506
WRMWSD Deliveries/Total estimated applied water	71%	35%	57%	62%	66%	61%	74%	71%	56%	69%	69%	57%
Estimated Water Applied From Other Sources	75,391	121,574	95,725	91,146	83,720	105,827	70,968	79,222	119,292	81,832	83,551	105,797

1/ Assumes supplies available regardless of source.

Total water applied within the WRMWSD service area fell from an estimated 277,527 AF in 1997 to 244,303 AF in 2001. Applied water for cotton fell almost 49,000 AF, mixed produce fell 6,900 AF, and melons fell 3,700 AF, paralleling reported acreage declines for those crops. In contrast, applied water on all permanent crops except deciduous fruits increased.

Decision-Making by Farmers

The data shown in the previous section reflect the combined effects of innumerable decisions made by farmers in the WRMWSD service area each year. Farm-level decision making in WRMWSD and every other agricultural area is a continuous process that adheres to and at times departs from traditional economic theory and models.

Farmers operate, more than most other industries, in an environment closely aligned with the "purely competitive" model of economics.[20] Agriculture includes thousands of producing units all making decisions independent of each other, virtually all are price takers, all have access to good information about markets and prices, and all, or nearly all, are trying to earn as much profit as they can from their operations.

There are extensive domestic and international influences on agriculture. Domestically, the price of natural gas affects fertilizer prices, the price of crude oil affects costs of gasoline and diesel fuel, interest rates affect the cost of operating loans, and economic growth affects consumer demands for all types of products. Agriculture is also subject to many influences from the global economy, evident in the tariffs in the U.S. and other countries on agricultural imports, the increasing production of such crops as cotton and deciduous nuts in Asia, and fluctuating exchange rates.

The decision-making framework which farmers must employ for their operations therefore includes considerations well beyond the farm gate. The results are indicated by decisions such as:

- Crops to plant and when;
- Inputs used and in what combinations;
- When and how to acquire or sell resources;
- When and where to sell harvested crops; and
- When to adopt new technology.

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20 See Henderson and Quandt.

Profit Maximization

One of the key assumptions in agricultural economics and farm management is that farmers attempt to use resources in a way that will maximize the profit of their operations.[21] An expanded form of that assumption is that farmers, with limited capital, attempt to allocate resources to their land in order to maximize profit across all crops they grow. There are many combinations of inputs which farmers can use in their operations, reflecting opportunities and costs. For example, weeds can be controlled chemically or with manual labor. Seeding and harvesting can be accomplished mechanically or by hand. Land preparation and fertilizing can be undertaken by the farmer or performed by custom operators.

In attempting to maximize profits, farmers weigh the tradeoffs and combine inputs in such a way that, at the margin, the value of product produced with each unit of input is the same for all inputs. All other factors unchanged, so long as the "value of marginal product" is greater for one input than for others, it is rational for the farmer to use at least one more unit of that input because the revenue from the product produced with that unit will exceed the cost of the input.[22] It is reasonable to assume that this framework is applicable not only to such inputs as fertilizer and chemicals, but also to water.

Crop Rotations and Profit Maximization Over Time

The decision-making framework is somewhat more complicated for the more realistic situation of farming continuously over time rather than in many separate single-year periods. This is particularly true for trees and vines, which take several years to mature and then remain productive for many years. However, for farmers growing several annual crops, a realistic goal would be to maximize profits over a crop rotation. Rotations generally include a sequence which alternates a variety of crops. Rotations may involve several crops and cover a period of several years. Accordingly, crop rotations may have a direct effect on the cropping pattern data reported for a given area.

The purposes of rotations include rebuilding soil nutrient levels, reducing pest concentrations and disease problems, and enhancing soil organic matter. It has been demonstrated that continuously planting the same crop on land causes the population of soil borne pathogens to

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21 See, for example, Heady and Kay and Edwards.

22 It is recognized that not all farmers are in business to maximize profits and do not have, at all times, the information possibly relevant to efficient decision making. However, given the unavailability of information on alternative goals, it is usually assumed that farmers are in business to maximize their profits. See Heady.

increase.[23] Planting crops that are not hosts helps to reduce the populations of those pathogens. Plants which belong to the same family or class of plants (e.g., broadleaf) often share similar pest problems. Thus, effective rotations must incorporate crops which are not closely related.

Some of the factors which affect the rotations used by farmers include the following:[24]

- Cropping history;
- Grower experience;
- Input requirements for crops;
- Compatibility of crops with existing equipment complement and with labor;
- Existing array of pests; and
- Value of crop and market conditions.

Cotton has traditionally been the core crop for rotations in many parts of Kern County. Historically, rotations included cotton and small grains, both grown for commercial sale.[25] More recently, however, small grains have not been grown as extensively for commercial sale because of low crop prices.[26] They are still grown for silage. Other crops more typically included in cotton rotations are tomatoes, onions, melons, carrots, and alfalfa. Typical rotations might include:

- Two years of cotton and one year of tomatoes or melons;
- Two years of cotton, one year of tomatoes or melons or onions, and three years of alfalfa; and
- One or two years of cotton, three years of alfalfa, one year of tomatoes or melons or onions or carrots, and one year of small grain.

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23 See Nunez.

24 University of California Cooperative Extension, 1995.

25 Brian Marsh, University of California Cooperative Extension, Bakersfield, March 26, 2003, personal communication.

26 Between 1996 and 2001, farm-level barley prices fell from $147 per ton to $84.40 per ton, while those for wheat fell from $168 per ton to $112 per ton. See Kern County Department of Agriculture.

By incorporating small grain and comparable crops into rotations, farmers sometimes appear to be growing economically-inefficient crops. However, the use of low-return crops such as small grains in rotations often reflects agronomic rather than purely economic considerations. The value from these crops would be reflected in better soil conditions and higher yields for other rotation crops in subsequent years. Thus, because of rotations, profit maximization must be viewed from a multi-year rather than a single-year perspective.

Fallowing may be an integral part of crop rotations. Fallowing, with a cover crop, may offer efficient opportunities to rebuild soil organic matter and conserve soil moisture. In addition, farmers may fallow some of their land in order to divert irrigation water usually used there to other, more productive parts of their farms. Farmers may also fallow land in order to be eligible for provisions of various government farm programs or as a component of reduced-tillage strategies.

Table 2 includes data on fallowed land, as reported by WRMWSD. Between 1990 and 2001, an average of 27,827 acres were fallowed within the district. Variation between years averaged plus or minus 9,651 acres, and that variation relative to the mean was 34.7 percent. Thus, over a three-year period, the change in the amount of land fallowed could range from (9,651) to 28,953 acres. Consequently, because so many independent farm-level decisions account for fallowed acreage for the entire district, it is impossible to attribute the increase shown since 1998 to any single factor, whether changes in water supplies, crop prices, input costs, or any other.

Effects of Water Costs and Availability

As noted previously, changes in measured cropping patterns for an area may be due to a variety of factors, such as market conditions, crop prices, government programs, contracts with crop processors, and soil and climate characteristics. For farmers in WRMWSD and throughout the San Joaquin Valley, the availability and cost of water are also critical factors in decisions on which crops to grow and thus in reported cropping patterns. As water reliability is reduced or water costs increase, economic theory as well as reported data suggest that farmers will adjust their crop and input choices to reflect the greater relative scarcity or cost of the resource.

For SWP water, both factors are likely important. Reliability of SWP water was addressed in a recently-completed report, which projected likely delivery capability of the system through 2021.[27] The key findings were that:

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27 California Department of Water Resources, 2002.

- In 75 percent of the years, the annual water delivery of the SWP is estimated to be at least 66 percent of full Table A deliveries
- In 50 percent of the years, annual water delivery is estimated to be at least 83 percent; and
- In 10 percent of the years, annual water delivery is estimated to be at least 98 percent.

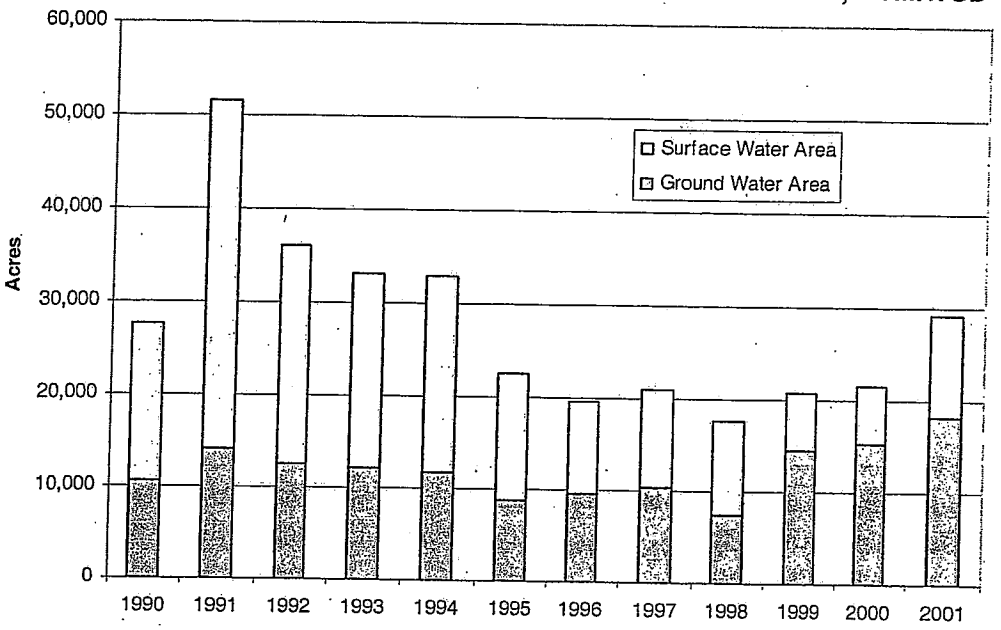
Moreover, costs of SWP water and other key inputs have risen, in some cases to the point that uncertainties over water deliveries, crop prices, and other key variables have caused some farmers to change their rotations and crop selection. The shift from annual crops, particularly cotton, to permanent crops in WRMWSD likely reflects this behavior. As discussed previously, cotton production is no longer feasible for many farmers. Similar shifts in ground water service areas likely reflect the increased costs of production, including higher energy costs for pumping.

Figure 6 shows the amount of fallowed land in WRMWSD. As shown, fallowed acreage peaked in 1991 because of severely-limited water supplies during the drought. By 1995, net cropped acreage had reached its 1990 level, and the amount of land fallowed had fallen to a more representative level. Prior to 1998, most of the fallowed land was in the surface water service areas. Since then, an increasing amount of fallowed land has been in ground water service areas. It is likely that some land has been fallowed for longer periods or idled in both surface water and groundwater service areas more recently because of low crop prices. In particular, the average Kern County price for Acala cotton fell from $0.84 per pound in 1995 to $0.68 per pound in 2001.[28] Over that same period, the average Kern County price for Pima cotton fell from $1.28 per pound to $0.86 per pound. Average Kern County prices for barley and wheat peaked in 1996, then fell, respectively, from $147 to $84.40 per ton; and from $168 to $112 per ton. Clearly, many farmers during this period realized that they would be unable to cover even variable production costs and very likely decided to fallow rather than plant crops.

There is no clear relationship between SWP water deliveries and fallowed land in WRMWSD. While SWP deliveries fell from 1996 to 1998, the amount of fallowed land in surface water areas decreased rather than increased. Between 1998 and 2000, SWP deliveries rose, yet the amount of fallowed land increased. Both sets of data indicate that fallowing decisions by farmers have not been based on SWP availability. If SWP water were the only irrigation source in WRMWSD, it would be only logical that as SWP deliveries fell, fallowing would increase. However, because of the diverse water supplies available to irrigators in the district, that relationship is not valid.

28 See Kern County Department of Agriculture.

Figure 6
Fallowed Land in Ground Water and Surface Water Service Areas, WRMWSD



Results

This section evaluates the expected effects on agricultural practices, including land fallowing, of the 41,000 AF transfer of SWP water from WRMWSD. It draws from the discussion of farm-level decision making and from a review of data presented throughout the report. The approach utilized to estimate the impacts relies on a review of long-term water demands in WRMWSD and of other data previously presented. Discussion includes the expected effects of the transfer during normal and wet years and in dry years on district supplies and costs and on farmer responses.

Table 4 shows that total WRMWSD deliveries of water from all sources since 1990 have varied from a minimum of about 65,000 AF in 1991 to a maximum of nearly 203,000 AF in 1996. Table 4 also shows that estimated total applied water requirements have ranged from about 187,000 AF in 1991 to nearly 278,000 AF in 1997. Estimated total water applied using all water sources fell by 13,125 AF between 1997 and 1999 and by an additional 20,099 AF between 1999 and 2001. Much of this decline is likely attributable to reductions in planted acreages of cotton and other annual crops for which prices dropped so dramatically beginning in the mid 1990s. From 1990 through 1999, WRMWSD deliveries accounted for an average of 63 percent of total applied water. From 1999 through 2001, they accounted for 65 percent.

Prior to the 41,000 AF transfer, WRMWSD had a water supply contract to Kern County Water Agency for Table A amount of about 238,000 AF of SWP water. In normal or wet years, the 41,000 AF is in excess of district needs. It is therefore reasonable to assume that in those years, the transfer would have no or minimal adverse effects on overall water supply. Moreover, the water is in excess of district needs in dry years because of the supplemental sources to which WRMWSD has access. Moreover, in wet, normal, or dry years, irrigator water costs would not be adversely affected by the transfer. .Therefore, because neither the quantity nor cost of district water should be affected adversely, the transfer should have very limited, if any, impacts on land fallowing..

In a critically-dry year or series of such years, the unavailability of part of the WRMWSD SWP contract amount may contribute to a minor mismatch between water supply and demand. If overall water costs increase, there may be some farm-level impacts. WRMWSD has jointly used several of its supplemental sources only in 2001. The variable and fixed costs (excluding capital costs) for that year did not differ substantially from SWP costs over the previous five years. If the costs in 2001 are representative, the incremental impacts of the transfer on delivered water costs to farmers should be minor. The amount of land fallowed in this dry year scenario, including the transfer, should not be materially different from the normal variation in cropped and fallowed acreage between years

Finally, it should be noted that the transfer discussed in this report is part of the broad WRMWSD strategy of increased efficiency and development and use of the sources of water which are most compatible with that strategy. In particular, by selling unneeded SWP water supplies, WRMWSD is able to avoid the carrying costs for that water even in years when it is not needed. Overall, the water supplies from the supplemental sources more than offset the reduced SWP Entitlement and, when the carrying cost of holding excess SWP entitlement is considered, at a lower cost.[29]

[29] William Taube, WRMWSD, May 23, 2002, personal communication.

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Attachment A - Tables Included in the Responses to Comments

Table A-1. Projected Future Water Supplies and Demands in Average Hydrologic Conditions for the CLWA Service Area

(all values in AF)

Year	*Projected Total Average Year Supply (AF)*[1]	*Projected Total Average Demand*[2]	*Projected Total Average Supply Less Total Average Demand*
2005	114,300	75,100	39,200
2010	114,300	82,400	31,900
2015	114,300	91,600	22,700
2020	114,300	102,500	11,800

Note: Refer to Tables 3.15-7 and 3.15-9 in the Draft EIR for additional detail.

1. Includes Table A Amount, SWP flexible storage, Semitropic Storage (24,000 AF stored in 2002), and groundwater sources (Alluvial Aquifer and Saugus Formation). Does not include additional 35,000 AF of SWP Table A water stored in Semitropic in 2003. Table A values based on current Table A Amount of 95,200 AF (which includes the Project), and percentages for Table A deliveries from DWR's SWP Delivery Reliability Report (DWR 2003b). The average year supply is the average amount of water available based on DWRSIM model results over its entire period of hydrologic record.

2. Includes municipal and industrial, other demands including irrigated agriculture and miscellaneous uses, and projected conservation.

Table A-2. SWP Surplus Water[1] Types

Without Monterey Amendment (Including With Implementation of Article 18(b))	*With Monterey Amendment*
Scheduled surplus water - Water that DWR determined to be available, in addition to Table A supplies, which was scheduled for delivery throughout the year (in the same manner as Table A supplies). This water was generally available only during the early years of the SWP (when Contractor demands for Table A water were low).[2]	Category deleted as part of the Monterey Amendment. (Given increased Contractor demands through time, this water is physically no longer available.)
Unscheduled surplus water - Water that DWR made available when water and capacity were available in excess of SWP storage needs and Table A supplies. This water is only available for limited time periods, generally only in the winter or early spring when Contractors demands are low, and only under specific conditions that do not occur on an annual basis.	**Article 21 water** - Same as unscheduled surplus water. Article 21 water was defined under the Monterey Amendment as "interruptible water" but is more commonly referred to as "Article 21 water."

1. Surplus water is SWP water that can be made available to Contractors when water and capacity are available in excess of SWP storage needs and Table A supplies. See above for terminology for and descriptions of specific types of surplus water. Note that surplus water terminology changed with implementation of the Monterey Amendment.
2. Under the With Implementation of Article 18(b) scenario, scheduled surplus water would once again be available because, with Table A Amounts reduced to a new minimum project yield, water supplies would once again be available in excess of reduced Table A Amounts.

Table A-3. Comparison of DWRSIM Model Results with the SWP Delivery Reliability Report for the 41,000 AF Table A Amount

(All values in AF and rounded to the nearest 100 AF)

	Average Year[1]	*Single Dry Year*[1]	*Multiple Dry Year Period*[1]
Current Conditions (1998 or 2001)[2]			
DWRSIM Results (With Monterey Amendment)[3]	34,400	9,200	18,100
SWP Delivery Reliability Report[4]	29,400	8,000	14,800
Difference	**5,000**	**1,200**	**3,300**
Future Conditions (2020 or 2021)[2]			
DWRSIM Results (With Monterey Amendment)[5]	32,000	9,200	17,600
SWP Delivery Reliability Report[4]	30,600	8,200	15,000
Difference	**1,400**	**1,000**	**2,600**

1. The average year supply is the average amount of water available based on DWRSIM model results over its entire 73-year period of hydrologic record. The single dry year supply is the supply available in the single year with the lowest total SWP deliveries based on DWRSIM model results (1977). Multiple dry year period supply is the average amount of water available over the four consecutive drought years of 1988 through 1991 based on DWRSIM model results.
2. Current conditions for the DWRSIM model results and the SWP Delivery Reliability Report are 1998 and 2001 conditions, respectively. Future conditions for the DWRSIM model results and the SWP Delivery Reliability Report are 2020 and 2021, respectively.
3. Based on water deliveries from DWRSIM study 1995D06E-CALFED-771. This study used 1998 DWR estimates of then-existing SWP Contractor demands.
4. Values based on DWR SWP Delivery Reliability Report results and applying the same methodology suggested by DWR in its report.
5. Based on water deliveries from DWRSIM study 2020D09C-CALFED-786.

Table A-4. Permanent Table A Transfers Completed Under the Monterey Amendment Provisions (Article 53)

From (Seller)	*To (Buyer)*	*Amount (AF)*	*Year Effective*	*CEQA Status*
COMPLETED TRANSFERS				
Berrenda Mesa Water District	Mojave Water Agency	25,000	1998	NOD – 11/1996
Belridge Water Storage District	Palmdale Water Agency	4,000	2000	NOD – 7/1998; NOD – 4/1999
Berrenda Mesa Water District	Alameda County Flood Control and Water Conservation District Zone 7	7,000	2000	NOD – 3/1996
Lost Hills Water District	Alameda County Flood Control and Water Conservation District Zone 7	15,000	2000	NOD – 7/1998
Belridge Water Storage District	Alameda County Flood Control and Water Conservation District Zone 7	10,000	2001	NOD – 7/1998; NOD – 4/1999
Belridge Water Storage District and Berrenda Mesa Water District	Solano County Water Agency	5,756	2001	NOD – 7/1998; NOD – 4/1999
Belridge Water Storage District and Berrenda Mesa Water District	Napa County Flood Control and Water Conservation District	4,025	2001	NOD – 12/2000
Subtotal		**70,781**		
ANTICIPATED TRANSFER				
Berrenda Mesa Water District	Undetermined	16,000	Unknown	NOP – July 2003; No further action taken
Subtotal		**16,000**		
Total		**86,781**		

Attachment B – DEIR Mailing List

MAILING LIST
DRAFT EIR FOR CLWA'S SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT

Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
Alameda County (SC)	James Sorenson	Planning Director Planning Department	Hayward	CA
Alameda County Water District	Eric Cartwright	Water Resources Planning	Fremont	CA
Alameda County Flood Control and Water Conservation District, Zone 7	Dale Myers	General Manager	Pleasanton	CA
Amador County (SC)	Susan C. Grijalva	Planning Director	Jackson	CA
Antelope Valley-East Kern Water Agency	Russ Fuller	General Manager	Palmdale	CA
Audubon Society of California	Dan Taylor	Executive Director	Sacramento	CA
Beale Memorial Library	Nila G. Stearns		Bakersfield	CA
Belridge Water Storage District	Greg A. Hammett	General Manager	Bakersfield	CA
Berrenda Mesa Water District (R)	Harry O. Starkey	General Manager	Bakersfield	CA
Black & Veatch	Dave Argo		Irvine	CA
Buena Vista Water Storage District	Martin Milobar	Engineer-Manager	Buttonwillow	CA
Building Industry Association, Greater LA/Ventura Chapter	Ray Garcia		Calabasas	CA
Butte County (SC)	Yvonne Christopher	Director	Oroville	CA
Calaveras County (SC)	Kim Hansen	Planning Director Planning Department	San Andreas	CA
California Air Resources Board	James Morgester	Chief	Sacramento	CA
California Department of Fish & Game, Region 5 Headquarters (T)	Patricia Wolf	Regional Manager	Long Beach	CA
California Department of Fish & Game, Sacramento			Sacramento	CA
California Department of Health, Drinking Water Program	Wayne Hubbard		Sacramento	CA
California Department of Health, Sacramento	Dat Tran	Drinking Water Program	Sacramento	CA
California Department of Parks and Recreation(T)	Ruth Coleman	Director	Sacramento	CA
California Department of Transportation	Marta E. Frausto	Planning	Fresno	CA
California Department of Transportation, District 7	Stephan J. Buswell	IGR / CEQA Branch Chief	Los Angeles	CA

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Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
California Department of Transportation, District 7	R.W. Sassaman	District Director	Los Angeles	CA
California Department of Water Resources, Glendale	Charles R. White	Chief Southern District	Glendale	CA
California Department of Water Resources, Sacramento(R)	Dan Flory	Chief SWP Analysis Office	Sacramento	CA
California Department of Water Resources, Sacramento(R)	Peggy Bernardy	Chief Counsel	Sacramento	CA
California Department of Water Resources, Sacramento(R)	Delores Brown	Division of Environmental Services	Sacramento	CA
California Division of Planning			Sacramento	CA
California Highway Patrol, Valencia			Valencia	CA
California Native Plant Society, Bakersfield	Ellen Cypher	President Kern County Chapter	Bakersfield	CA
California Native Plant Society, Sacramento			Sacramento	CA
California Public Utilities Commission	Environmental Review Team		San Francisco	CA
California Regional Water Quality Control Board, Central Valley Region	Loren Harlow	Executive Officer	Fresno	CA
California Regional Water Quality Control Board, Los Angeles (Region 4)	John Bishop	Director of Regional Programs	Los Angeles	CA
California State Clearinghouse	Governor's Office of Planning and Research		Sacramento	CA
California State University, Fullerton	South Central Coastal Information Center	Department of Anthropology	Fullerton	CA
California State Water Resources Control Board			Sacramento	CA
Casitas Municipal Water District	John Johnson		Oak View	CA
Castaic Lake State Recreation Area	Mika Yamamoto	Superintendent	Castaic	CA
Castaic Lake Water Agency	Mary Lou Cotton	Assistant to the General Manager	Santa Clarita	CA
Castaic Union School District	Mrs. Beverly Silsbee	Superintendent	Valencia	CA
Cawelo Water District	John Jones	District Manager	Bakersfield	CA
Central Coast Water Authority (CCWA)	Bill Brennan		Buellton	CA
City of Los Angeles	Vitaly Troyan	City Engineer	Los Angeles	CA

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Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
City of Los Angeles, Environmental Affairs Department	Detrick B. Allen	General Manager	Los Angeles	CA
City of Santa Clarita	Vince Bertoni	Interim Director Planning and Building Services Department	Santa Clarita	CA
City of Santa Clarita	Ken Pulskamp	City Manager	Santa Clarita	CA
City of Yuba City		Public Works Director	Yuba City	CA
	Nancy Clemm		Los Angeles	CA
Coachella Valley Water District	Tom Levy	General Manager	Coachella	CA
Colusa County (SC)	Kent Johanns	Director Department of Planning and Building	Colusa	CA
Contra Costa County (SC)	Dennis Barry	Director of Community Development	Martinez	CA
County of Kings	Larry Spikes		Hanford	CA
Crestline-Lake Arrowhead Water Agency		General Manager	Crestline	CA
Desert Water Agency	Dan Ainsworth	General Manager	Palm Springs	CA
Dudley Ridge Water District		General Manager	Fresno	CA
Ecology Center of Southern California			Los Angeles	CA
El Dorado County (SC)	Conrad B. Montgomery	Planning Director Planning Department	Placerville	CA
Empire West Side Irrigation District		General Manager	Stratford	CA
Environmental Defense Fund	Tom Graff		Oakland	CA
Fresno County (SC)	Margie McHenry	Senior Staff Analyst Department of Public Works and Planning	Fresno	CA
Friends of the Santa Clara River		Chairman	Newbury Park	CA
Glenn County (SC)	Christy Leighton	Principal Planner Planning Department	Willows	CA
Hansen Consulting	David P. Hansen, PE		Palmdale	CA
Hatch & Parent	Susan Petrovich		Santa Barbara	CA
Henry Miller Water District	Joe Lutje	Manager	Bakersfield	CA
Imperial County (SC)	Jurg Heuberger	Director, Planning	El Centro	CA
Inyo County(SC) Planning Department		Planning Director	Independence	CA

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Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
Kern Council of Governments	Roger Taylor	Principal Planner	Bakersfield	CA
Kern County(CC)	Rebecca Brownlee	County Clerk	Bakersfield	CA
Kern County(CC)	Ted James	Division Chief Department of Planning & Development	Bakersfield	CA
Kern County(CC)	David Price III	Director Department of Planning & Development	Bakersfield	CA
Kern County Board of Supervisors	Denise Pennell	Clerk of the Board	Bakersfield	CA
Kern County Water Agency(R)	Thomas N. Clark	General Manager	Bakersfield	CA
Kings County(SC)	Bill Zumwalt	Director of Planning Planning Department	Handord	CA
Kern Delta Water District	Mark Mulkay	Engineer-Manager	Bakersfield	CA
Kronick, Moskovitz, Tiedemann & Girard	Cliff Schulz		Sacramento	CA
Lake County (SC)	Mary Jane Fagalde	Director of Community Development	Lakeport	CA
Lassen County (SC)	Robert K. Sorvaag	Director Department of Community Development	Susanville	CA
Lennar Communities, Southern California Division	Bob Santos	Senior Vice President	Mission Viejo	CA
Littlerock Creek Irrigation District	Brad Bones		Littlerock	Ca
Local Agency Formation Commission, Los Angeles (R)			Glendale	CA
Local Agency Formation Commission, Los Angeles (R)	Attn: Waste Management Division	Public Works Department	Alhambra	CA
Local Agency Formation Commission, Los Angeles (R)	Attn: Land Development Division	Public Works Department	Alhambra	CA
Local Agency Formation Commission, Los Angeles (R)	Attn: Waterworks and Sewer Maintenance Division	Brian D. Hooper Public Works Department	Alhambra	CA
Local Agency Formation Commission, Los Angeles (R)	Attn: Planning Division	Public Works Department	Alhambra	CA
Local Agency Formation Commission, Los Angeles (R)	Creg David, Watershed Management Division	Public Works Department	Alhambra	CA

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Local Agency Formation Commission, Los Angeles (R)	James A. Noyes	Director of Public Works Public Works Department	Alhambra	CA
Los Angeles County Board of Supervisors	Violet Varona-Lukens	Executive Officer	Los Angeles	CA
Los Angeles County Department of Parks and Recreation	Timothy Gallagher	Director	Los Angeles	CA
Los Angeles County Department of Parks and Recreation	Lillie Lowery	Department Facilities Planner 1	Los Angeles	CA
Los Angeles County Fire Department	Lily Cusick	Forestry Division	Commerce	CA
Los Angeles County Fire Department	David Leininger	Chief, Forestry Division	"	"
Los Angeles County Public Library	Michele Mathieu		Downey	CA
Los Angeles County Public Library, Canyon Country Jo Anne Darcy Library	Susan Browman		Canyon Country	CA
Los Angeles County Public Library, Valencia	Dan Golden		Valencia	CA
Los Angeles County Public Library, Newhall	Judy Hist		Newhall	CA
Los Angeles County Regional Planning	Kerwin Chih	Impact Assessment Section Director	Los Angeles	CA
Los Angeles County Regional Planning, Recorder's Office(CC)	Conny B. McCormack	Registrar-Recorder/County Clerk	Norwalk	CA
Los Angeles County Sheriff's Office, Santa Clarita Valley Station	Attn: Operations		Valencia	CA
Los Angeles County Sheriff's Office, Department Headquarters	Leroy D. Baca	Sheriff	Monterey Park	CA
Los Angeles County, Bureau of Environmental Protection		Department of Health Services	Baldwin Park	CA
Los Angeles County, North Regional Office		Parks and Recreation Department	Castaic	CA
Lost Hills Water District	Phillip D. Nixon	General Manager	Bakersfield	CA
Madera County (SC)	Dave Merchan	Assistant Planning Director Planning Department	Madera	CA
Mariposa County (SC)	Eric Jay Toll	Director of Planning Planning Department	Mariposa	CA
McCormick, Kidman and Behrens LLP	Russell G. Behrens	Partner	Costa Mesa	CA

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Merced County (SC)	Paul Fillebrown	Director County Public Works Dept.	Merced	CA
Metropolitan Water District of Southern California	Dirk Marks	Water Resources	Los Angeles	CA
Metropolitan Water District of Southern California	Adam Kear	Legal	Los Angeles	CA
Mojave Water Agency	Kirby Brill	General Manager	Apple Valley	CA
Mono County (SC)	Scott Burns	Executive Director of Community Development Planning Department	Mammoth Lakes	CA
Monterey County(SC)	Scott Hennessy	Director Planning & Building Inspection Department	Salinas	CA
Napa County (SC)	Charlie Wilson	Director Conservation Development and Planning	Napa	CA
Napa County Flood Control and Water Conservation District		Department of Public Works	Napa	CA
National Audubon Society, California	J. William Yeates		Fair Oaks	CA
Natural Heritage Institute			Berkeley	CA
Natural Resources Defense Council			San Francisco	CA
Nevada County (SC)	Mark Tomich	Interim Planning Director Planning Department	Nevada City	CA
Newhall County Water District (R)	Ken Peterson	General Manager	Santa Clarita	CA
Newhall Land and Farming Company	Steve Zimmer	Assistant Vice President	Valencia	CA
Newhall School District	Marc Winger	Superintendent	Valencia	CA
Oak Flat Water District			Patterson	CA
Orange County(SC)	Tim Neeley	Manager Environmental Planning Services	Santa Ana	CA
Pacific Bell	Ron Tropcich	Director, External Affairs	Pasadena	CA
Pacific Gas & Electric Company			Fresno	CA
Pacific Institute for Studies in Development, Environment and Security	Peter Gleick	President	Oakland	CA
Palmdale Water District	Dennis LaMoreaux	General Manager	Palmdale	CA
Placer County (SC)	Fred Yeager	Director Planning Department	Auburn	CA

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Planning and Conservation League and Citizens Planning Association of Santa Barbara County			San Francisco	CA
Planning and Conservation League			Sacramento	CA
Plumas County (SC)	John S. McMorrow	Director Planning Department	Quincy	CA
Plumas County Flood Control and Water Conservation District		General Manager	Quincy	CA
	Keith Pritsker		Stevenson Ranch	CA
Public Utilities Commission			Los Angeles	CA
	R. Bruce Tepper Esq.		Beverly Hills	CA
Riverside County (SC)	Aleta J. Laurence	Director of Planning Transportation and Land Management Agency/Planning	Riverside	CA
Rossman and Moore			San Francisco	CA
Rosedale-Rio Bravo Water District	Hal Crossley	General Manager	Bakersfield	CA
Sacramento (SC)	Thomas W. Hutchings	Director of Planning Planning and Community Development Department	Sacramento	CA
Sacramento County	Maria Bell	Clerk-Recorder	Sacramento	CA
San Benito County (SC)	Rob Mendiola	Director Planning Department	Hollister	CA
San Bernardino County(SC)	Michael E. Hays	Director, Land Use Services	San Bernardino	CA
San Bernardino Valley Municipal Water District	Randy Vangelder	General Manager	San Bernardino	CA
San Diego County (SC)	Gary Pryor	Director of Planning and Land Use Department of Planning & Land Use	San Diego	CA
San Gabriel Valley Municipal Water District	Jim Frei	General Manager	Azusa	CA
San Gorgonio Pass Water Agency	Steve Stockton	General Manager	Beaumont	CA
San Joaquin County (SC)	Ben Hulse	Director of Community Development Department	Stockton	CA

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San Luis Obisbo County(SC)	Ellen Carroll,	Environmental Coordinator Planning and Building Department	San Luis Obisbo	CA
San Luis Obisbo County Flood Control and Water Conservation District	General Manager	General Manager	San Luis Obispo	CA
San Mateo County (SC)	Terry Burnes	Planning Administrator Planning and Building Division	Redwood City	CA
Santa Barbara County (SC)	Diane Meester	Interim Planning Director Planning and Development	Santa Barbara	CA
Santa Clara County (SC)	Hugh Graham	Principle Planner Department of Planning and Development	San Jose	CA
Santa Clara Valley Water District	Joan Maher	General Manager	San Jose	CA
Santa Clarita Community College District	Dennis Chuning	Vice President, Administrative Services	Santa Clarita	CA
Santa Clarita Oak Conservancy	Mike Lyons	Treasurer	Saugus	CA
Santa Clarita Parents' Lobby	Patricia Saletore		Saugus	CA
Santa Cruz County (SC)	Alvin James	Director of Planning Planning Department	Santa Cruz	CA
Santa Monica Mountains Conservancy			Malibu	CA
Saugus Union School District	Judy Fish	Superintendent	Santa Clarita	CA
SCOPE, Canyon Country	Pat Saletore		Canyon Country	CA
SCOPE, Castaic	Michael A. Kotch	President	Castaic	CA
Semitropic Water Storage District	Wilmar L. Boschman	General Manager	Wasco	CA
	Sharon L. Roden		Paso Robles	CA
Shasta County (SC)	James W. Cook	Planning Division Manager Department of Resource Management Planning Division	Redding	CA
Sierra Club, Angeles Chapter	Dr. Gordon LaBedz	Conservation Chair	Los Angeles	CA
Sierra Club, Santa Clarita Group	Martin Schlageter	Conservation Coordinator	Saugus	CA
Sierra Club, Santa Clarita Group	Henry Schultz	Chair	Saugus	CA
Sierra County (SC)	Tim H. Beals	Director of Planning and Building Department Department of Planning	Downieville	CA

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Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
Solano County (SC)	Birgitta Corsello	Director Environmental Management	Fairfield	CA
Solano County Water Agency	David Okita	General Manager	Vacaville	CA
Sonoma County (SC)	Jennifer Barrett	Director of Planning Permit and Resource Management	Santa Rosa	CA
South Coast Air Quality Management District	Steve Smith		Diamond Bar	CA
Southern California Association of Governments	Jeffrey M. Smith, AICP	Senior Regional Planner, Intergovernmental Review	Los Angeles	CA
Southern California Edison Company, Valencia	Attn: Customer Service Planner		Valencia	CA
Southern California Gas Company	Jack Russo	Planning Associate, Northern Region	Chatsworth	CA
Southern California Gas Company, Valencia District			Valencia	CA
Stanislaus County (SC)	Ron Freitas	Director Department of Planning and Community Development	Modesto	CA
State Water Contractors	John Coburn	General Manager	Sacramento	CA
Sulphur Springs School District	Robert Nolet	Superintendent	Santa Clarita	CA
Summers Engineering Inc.	Joseph Summers		Hanford	CA
Sutter County (SC)	Tom Last	Principal Planner Community Services Department, Planning Program	Yuba City	CA
TC Collins & Associates	John Evans		Newport Beach	CA
Tehachapi-Cummings County Water District	Robert J. Jasper	Manager	Tehachapi	CA
Tehama County (SC)	George Robson	Director Planning Department	Red Bluff	CA
Tejon-Castac Water District	Dennis Mullins, Esquire	President	Lebec	CA
The Bay Institute	Grant Davis	Executive Director	Novato	CA
The Nature Conservancy	Graham Chisholm	State Director	San Francisco	CA
Tuolumne County (SC)	Bev Shane	Director of Planning Planning Department	Sonora	CA
Tulare County(SC)	Larry L. Awbrey	Ass. RMA Director	Visalia	CA

MAILING LIST
DRAFT EIR FOR CLWA'S SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT

Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
Tulare Lake Basin Water Storage District	Brent Graham	General Manager	Corcoran	CA
United Water Conservation District	Dana L. Wisehart	General Manager	Santa Paula	CA
US Army Corps of Engineers, Ventura	Spencer MacNeil	Senior Project Manager	Ventura	CA
US Department of Agriculture	Ron Schultze		Davis	CA
US Department of Agriculture, Los Padres National Forest		National Forest Service	Frazier Park	CA
US Environmental Protection Agency, Region IX	Water Resources		San Francisco	CA
US Fish & Wildlife Service, Sacramento	Wayne White	Field Supervisor	Sacramento	CA
US Fish & Wildlife Service, Ventura	Diane Noda	Field Supervisor	Ventura	CA
US Forest Service	Laurie Fenwood	Director Ecosystems and Conservation Department	Vallejo	CA
Valencia Water Company	Robert J. DiPrimio	President	Valencia	CA
Ventura County(CC)	Chris Stephens	Planning Director	Ventura	CA
Ventura County(CC)	John C. Crowley	Deputy Director, Water Resources Dept.	Ventura	CA
Ventura County(CC)	Robert Gallagher	Director, Environmental Health Dept.	Ventura	CA
Ventura County(CC)	Richard Dean	County Clerk		CA
Ventura County(CC)	Jeff Pratt	Deputy Director, Public Works Flood Control Dept.	Ventura	CA
Ventura County(CC)	Thomas Berg	Resource Management Agency	Ventura	CA
Ventura County Flood Control District		General Manager	Ventura	CA
Ventura County Library	Starrett Kreissman	Director	Ventura	CA
West Kern Water District	Jerry Pearson	General Manager	Taft	CA
Water Association of Kern County	Loron Hodge	Manager	Bakersfield	CA
Wheeler Ridge - Maricopa Water Storage District	William A. Taube	Engineer-Manager	Bakersfield	CA
William S. Hart School District	Robert Lee	District Superintendent	Santa Clarita	CA

MAILING LIST
DRAFT EIR FOR CLWA'S SUPPLEMENTAL WATER PROJECT TRANSFER OF 41,000 ACRE-FEET OF STATE WATER PROJECT TABLE A AMOUNT

Agency/Organization/ Company Name	*Contact Name*	*Title*	*City*	*State*
Yolo County (SC)	David Morrison	Assistant Director of Planning Community Development Agency	Woodland	CA
Young Wooldridge	Ernest A. Conant		Bakersfield	CA
Yuba County (SC)	James P. Manning	Director Community Development Department	Marysville	CA

Notes:
(R)=Responsible Agency, (T)=Trustee Agency, (CC)=County Clerk to post NOP, (SC)=Surrounding County

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CLWA RETURN TO WRIT

EXHIBIT NO. 5

Notice of Determination

To: ☒ Office of Planning and Research
1400 Tenth Street, Rm. 222
Sacramento, California 95812

☒ Kern County, County Clerk
1115 Truxtun Avenue
Bakersfield, California 93301-4639

☒ Los Angeles County, County Clerk
12400 Imperial Highway
Norwalk, California 90650

☒ Sacramento County, County Clerk
600 8th Street
Sacramento, California 95814

☒ Ventura County, County Clerk
800 S. Victoria Avenue
Ventura, California 93009

RECEIVED
DEC 23 2004
STATE CLEARING HOUSE

From: (Lead Agency)
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350
Mary Lou Cotton, Water Resources Manager
(661) 297-1600

SUBJECT: **Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.**

State Clearinghouse Number:
1998041127

Project Title:
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Project Location:
The Project would use existing State Water Project (SWP) facilities located between the southern Sacramento-San Joaquin River Delta (Delta) facilities and Castaic Lake; these facilities include the SWP's southern Delta facilities (Clifton Court Forebay, the Banks Pumping Plant, and Bethany Reservoir); the San Luis Reservoir facilities (San Luis Reservoir, O'Neil Forebay, and the Gianelli Pumping-Generating Plant); and the California Aqueduct from the southern Delta to Castaic Lake, including pumping plants, a power plant, and storage facilities along the Aqueduct (Buena Vista, Teerink, Chrisman, Edmonston, and Oso pumping plants, Warne power plant, and Quail, Pyramid and Castaic lakes). These facilities are located in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Merced, San Joaquin, and Stanislaus counties. The Project also could affect environmental resources located in the Castaic Lake Water Agency (CLWA) and Wheeler Ridge-Maricopa Water Storage District (WRMWSD) service areas. The CLWA service area is located in northern Los Angeles and eastern Ventura counties. The WRMWSD is located in the southern extent of the San Joaquin Valley in Kern County.

Project Description:

The Project is the transfer of an existing 41,000 acre-feet (AF) of SWP Table A Amount from the Kern County Water Agency (KCWA) and its member unit in Kern County, WRMWSD, to CLWA. The Project also includes the use of SWP facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. The Project water is transported from certain points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The points of origin and delivery are identified in the 41,000 AF Transfer Agreement and the Point of Delivery Agreement. These and other documents referenced in the Final Environmental Impact Report (EIR) for the Project are available for public inspection at the CLWA offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350, (661) 297-1600.

The Project currently is being implemented by an amendment to the SWP water supply contracts of CLWA and KCWA executed in 1999. The Project is to authorize CLWA to use water delivered from the 41,000 AF of SWP Table A Amount for water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. The annual allocations of SWP water made by the California Department of Water Resources (DWR) are based on that year's hydrologic conditions, the amount of water in storage in the SWP system, and other SWP Contractors' requests for SWP supplies. Thus, the actual amount of water available for delivery to CLWA as a result of the 41,000 AF transfer would vary from year to year. Water would be requested by CLWA as needed to meet the demands of its service area, and the transfer of Table A Amount would be one of a number of projects implemented by CLWA (e.g., infrastructure improvements, groundwater banking programs, increased recycling and conservation, and expanded use of local groundwater sources) to increase water reliability. Those projects that are considered reasonably foreseeable and for which sufficient information is available are included in the cumulative impacts analysis contained in the Final EIR.

The Project does not include the construction of any additional SWP facilities or new facilities in the CLWA, KCWA, or WRMWSD service areas.

This is to advise that the Castaic Lake Water Agency has approved the above
☒ Lead Agency ☐ Responsible Agency
described project on December 22, 2004 and has made the following determinations regarding the above described project:

1. The project [☒ will ☐ will not] have a significant effect on the environment.
2. ☒ An Environmental Impact Report was prepared and certified for this project pursuant to the provisions of CEQA.
   ☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☒ was ☐ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final Environmental Impact Report with comments and responses and record of project approval is available to the General Public at:

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Dan Masnada	General Manager	December 23, 2004
Castaic Lake Water Agency	*Title*	*Date*

Date received for filing at OPR: _____
(CDFG Filing Fee submitted to the Los Angeles County Clerk.)

CLWA RETURN TO WRIT

EXHIBIT NO. 6

Notice of Determination

ENDORSED

DEC 23 2004

MARK NORRIS, CLERK-RECORDER

To: ☒ Office of Planning and Research
1400 Tenth Street, Rm. 222
Sacramento, California 95812

☒ Kern County, County Clerk
1115 Truxtun Avenue
Bakersfield, California 93301-4639

☒ Los Angeles County, County Clerk
12400 Imperial Highway
Norwalk, California 90650

☒ Sacramento County, County Clerk
600 8th Street
Sacramento, California 95814

☒ Ventura County, County Clerk
800 S. Victoria Avenue
Ventura, California 93009

From: (Lead Agency) Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350
Mary Lou Cotton, Water Resources Manager
(661) 297-1600

SUBJECT: **Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.**

State Clearinghouse Number:
1998041127

Project Title:
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Project Location:
The Project would use existing State Water Project (SWP) facilities located between the southern Sacramento-San Joaquin River Delta (Delta) facilities and Castaic Lake; these facilities include the SWP's southern Delta facilities (Clifton Court Forebay, the Banks Pumping Plant, and Bethany Reservoir); the San Luis Reservoir facilities (San Luis Reservoir, O'Neil Forebay, and the Gianelli Pumping-Generating Plant); and the California Aqueduct from the southern Delta to Castaic Lake, including pumping plants, a power plant, and storage facilities along the Aqueduct (Buena Vista, Teerink, Chrisman, Edmonston, and Oso pumping plants, Warne power plant, and Quail, Pyramid and Castaic lakes). These facilities are located in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Merced, San Joaquin, and Stanislaus counties. The Project also could affect environmental resources located in the Castaic Lake Water Agency (CLWA) and Wheeler Ridge-Maricopa Water Storage District (WRMWSD) service areas. The CLWA service area is located in northern Los Angeles and eastern Ventura counties. The WRMWSD is located in the southern extent of the San Joaquin Valley in Kern County.

Project Description:

The Project is the transfer of an existing 41,000 acre-feet (AF) of SWP Table A Amount from the Kern County Water Agency (KCWA) and its member unit in Kern County, WRMWSD, to CLWA. The Project also includes the use of SWP facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. The Project water is transported from certain points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The points of origin and delivery are identified in the 41,000 AF Transfer Agreement and the Point of Delivery Agreement. These and other documents referenced in the Final Environmental Impact Report (EIR) for the Project are available for public inspection at the CLWA offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350, (661) 297-1600.

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This is to advise that the Castaic Lake Water Agency has approved the above
☒ Lead Agency ☐ Responsible Agency

described project on December 22, 2004 and has made the following determinations regarding the above described project:

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6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final Environmental Impact Report with comments and responses and record of project approval is available to the General Public at:

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Dan Masnada	General Manager	December 23, 2004
Dan Masnada	*Title*	*Date*
Castaic Lake Water Agency		

Date received for filing at OPR: _____
(CDFG Filing Fee submitted to the Los Angeles County Clerk.)

CLWA RETURN TO WRIT

EXHIBIT NO. 7

Notice of Determination

To: ☒ Office of Planning and Research
1400 Tenth Street, Rm. 222
Sacramento, California 95812

COPY

☒ Kern County, County Clerk
1115 Truxtun Avenue
Bakersfield, California 93301-4639

☒ Los Angeles County, County Clerk
12400 Imperial Highway
Norwalk, California 90650

ORIGINAL FILED
DEC 2 3 2004
LOS ANGELES, COUNTY CLERK

☒ Sacramento County, County Clerk
600 8th Street
Sacramento, California 95814

☒ Ventura County, County Clerk
800 S. Victoria Avenue
Ventura, California 93009

From: (Lead Agency)
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350
Mary Lou Cotton, Water Resources Manager
(661) 297-1600

SUBJECT: **Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.**

State Clearinghouse Number:
1998041127

Project Title:
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Project Location:
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COPY

Notice of Determination

To: ☒ Office of Planning and Research
1400 Tenth Street, Rm. 222
Sacramento, California 95812

☒ Kern County, County Clerk
1115 Truxtun Avenue
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☒ Sacramento County, County Clerk
600 8th Street
Sacramento, California 95814

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800 S. Victoria Avenue
Ventura, California 93009

ORIGINAL FILED
DEC 2 8 2004
LOS ANGELES, COUNTY CLERK

From: (Lead Agency)
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350
Mary Lou Cotton, Water Resources Manager
(661) 297-1600

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IIA - THE RESOURCES AGENCY
3H AND GAME
LING FEE CASH RECEIPT

223698

L.A. COUNTY RECORDER
/COUNTY CLERK
BUSINESS FILING & REC

12/23/04 1:28PM
000001#0050 XX35
HARNELL

#228698
EIR: $850.00
COUNTY FEE $25.00

XXTOTAL
$875.00
CHECK $875.00
CHANGE $0.00

A
Los Angeles
Date: 12/23/04
Document No.:

Ry Lou COTTON
(661) 297-1600
1234 Bouquet Canyon Rd. Santa Clarita.
Phone Number:

riate box): Local Public Agency ☒ School District ☐ Other Special District ☐
State Agency ☐ Private Entity ☐

EES:

npact Report	$850.00	$ 850.
ition	$1,250.00	$
Water Diversion *(State Water Resources Control Board Only)*	$850.00	$
to Certified Regulatory Programs	$850.00	$
rative Fee	$25.00	$ 25.
empt from fees		
	TOTAL RECEIVED	$ 875.

eiving payment: H. Harper

WHITE-PROJECT APPLICANT YELLOW-DFG/FASB PINK-LEAD AGENCY GOLDENROD-STATE AGENCY OF FILING

CLWA RETURN TO WRIT

EXHIBIT NO. 8

20041223-0022316 Pg: 1 of 1
Ventura Co. Clerk Philip J. Schmit
File Date:12/23/2004 Fee#: $1380.00
PJ

Notice of Determination

To: ☒ Office of Planning and Research
1400 Tenth Street, Rm. 222
Sacramento, California 95812

☒ Kern County, County Clerk
1115 Truxtun Avenue
Bakersfield, California 93301-4639

☒ Los Angeles County, County Clerk
12400 Imperial Highway
Norwalk, California 90650

☒ Sacramento County, County Clerk
600 8th Street
Sacramento, California 95814

☒ Ventura County, County Clerk
800 S. Victoria Avenue
Ventura, California 93009

COPY

POSTED
DEC 23 2004
PHILIP J. SCHMIT, County Clerk
By: _____, Deputy

From: (Lead Agency)
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350
Mary Lou Cotton, Water Resources Manager
(661) 297-1600

SUBJECT: **Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.**

State Clearinghouse Number:
1998041127

Project Title:
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

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☒ Lead Agency ☐ Responsible Agency
described project on December 22, 2004 and has made the following determinations regarding the above described project:

1. The project [☒ will ☐ will not] have a significant effect on the environment.
2. ☒ An Environmental Impact Report was prepared and certified for this project pursuant to the provisions of CEQA.
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This is to certify that the final Environmental Impact Report with comments and responses and record of project approval is available to the General Public at:

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Dan Masnada	General Manager	December 23, 2004
Castaic Lake Water Agency	*Title*	*Date*

Date received for filing at OPR: _____
(CDFG Filing Fee submitted to the Los Angeles County Clerk.)

COUNTY CLERK AND RECORDER

PHILIP J. SCHMIT COUNTY CLERK AND RECORDER

OFFICIAL RECEIPT

Receipt Number: T20040019493
Date: 12/23/2004 Clerk: panoj

Customer Name :
CASTAIC LAKE WATER AGENCY

Transaction Detail

Document Type		Fees
NOTICE OF DETERMINATION 200412230022316	-	$ 50.00

Payment Information

Method of Payment	Payment Control ID	Authorized Agent	Amount
Check	058659 & 058660		$50.00

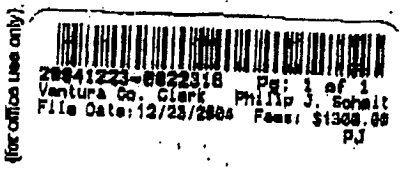
AMOUNT PAID:	**$50.00**
LESS AMOUNT DUE:	$50.00
CHANGE RECEIVED:	**$0.00**

County Clerk Office Hall of Admin., Main Plaza 800 S.Victoria Ave.Ventura, CA 93009 - 1260

Transmittal Memorandum
Department of Fish & Game Environmental Filings

Please complete the information below and submit one (1) memorandum with each document to be filed with the **Ventura County Clerk's Office**. Thank you.

(for office use only)



Project Title: Supplemental Water Project Transfer of 41,000 AF of SWP Table A Amount

Name of Agency filing attached document: Castaic Lake Water Agency

The above named agency is filing as: ☒ Lead Agency ☐ Responsible Agency

Address of Filing Agency: 27234 Bouquet Canyon Road, Santa Clarita, California 91350

Document Type (check one): ☐ Negative Declaration ☒ Environmental Impact Report ☐ Exemption

☐ Other: _____

Project Applicant: Castaic Lake Water Agency

Project Applicant Address: 27234 Bouquet Canyon Road, Santa Clarita, California 91350

Project Applicant Phone Number: (661) 297-1600

Project Applicant is (check one):

☐ Local Public Agency ☐ School District ☒ Other Special District ☐ State Agency ☐ Private Entity

If the agency presenting this document is filing as the responsible agency, **provide a copy** of the Lead Agency's filed documents and complete the following:

Lead Agency: Same as above

Lead Agency's Project Title: _____

Lead Agency's State Receipt #: _____ Lead Agency's Document #: _____

Check Applicable Fees (check all that apply):

☐ Negative Declaration ($1,250.00)
☒ Environmental Impact Report ($850.00)
☐ County Administrative Fee ($25.00)
☐ De Minimus Impact (**EXEMPT - Provide a Certificate of Fee Exemption**)
☐ Filed by responsible agency, fees paid by lead agency (Attach a copy of Lead Agency's filing & receipt.)
☒ Fees have already been paid (Attach a copy of the prior filing and proof of payment.)

☐ Categorically Exempt
☐ Statutorily Exempt

Prepared by: Dan Masnada (Name) General Manager (Title)

Signature: _____ December 23, 2004 (Date) (661) 297-1600 (Phone #)

DO NOT WRITE BELOW THIS LINE – The following portion will be completed by the Ventura County Clerk's Office.

State Receipt #: _____ Document #: _____ Total $ received: 5000

Signature of person receiving payment: **Josie Pano**, Deputy County Clerk

(09/2002) CC&R

Posted: DEC 23 2004 through ____/____/____

CLWA RETURN TO WRIT

EXHIBIT NO. 9

RECEIPT #LA County

FILED
KERN COUNTY

Notice of Determination

DEC 27 2004

ANN K. BARNETT
AUDITOR-CONTROLLER-COUNTY CLERK
BY: _____ DEPUTY

COPY

To: ☒ Office of Planning and Research
1400 Tenth Street, Rm. 222
Sacramento, California 95812

☒ Kern County, County Clerk
1115 Truxtun Avenue
Bakersfield, California 93301-4689

☒ Los Angeles County, County Clerk
12400 Imperial Highway
Norwalk, California 90650

☒ Sacramento County, County Clerk
600 8th Street
Sacramento, California 95814

☒ Ventura County, County Clerk
800 S. Victoria Avenue
Ventura, California 93009

From: (Lead Agency) Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350
Mary Lou Cotton, Water Resources Manager
(661) 297-1600

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number:
1998041127

Project Title:
Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount

Project Location:
The Project would use existing State Water Project (SWP) facilities located between the southern Sacramento-San Joaquin River Delta (Delta) facilities and Castaic Lake; these facilities include the SWP's southern Delta facilities (Clifton Court Forebay, the Banks Pumping Plant, and Bethany Reservoir); the San Luis Reservoir facilities (San Luis Reservoir, O'Neil Forebay, and the Gianelli Pumping-Generating Plant); and the California Aqueduct from the southern Delta to Castaic Lake, including pumping plants, a power plant, and storage facilities along the Aqueduct (Buena Vista, Teerink, Chrisman, Edmonston, and Oso pumping plants, Warne power plant, and Quail, Pyramid and Castaic lakes). These facilities are located in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Merced, San Joaquin, and Stanislaus counties. The Project also could affect environmental resources located in the Castaic Lake Water Agency (CLWA) and Wheeler Ridge-Maricopa Water Storage District (WRMWSD) service areas. The CLWA service area is located in northern Los Angeles and eastern Ventura counties. The WRMWSD is located in the southern extent of the San Joaquin Valley in Kern County.

Notice of Environmental Document Posted by County Clerk on 12/27/04 and for 30 days thereafter. Pursuant to Section 21152(c), Public Resources Code

#1077

Project Description:

The Project is the transfer of an existing 41,000 acre-feet (AF) of SWP Table A Amount from the Kern County Water Agency (KCWA) and its member unit in Kern County, WRMWSD, to CLWA. The Project also includes the use of SWP facilities from northern California to Los Angeles County for the delivery of SWP water to the CLWA service area, and use of this water within the CLWA service area. The Project water is transported from certain points of origin in the SWP system to the CLWA intake south of Castaic Lake via existing SWP facilities. The points of origin and delivery are identified in the 41,000 AF Transfer Agreement and the Point of Delivery Agreement. These and other documents referenced in the Final Environmental Impact Report (EIR) for the Project are available for public inspection at the CLWA offices at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350, (661) 297-1600.

The Project currently is being implemented by an amendment to the SWP water supply contracts of CLWA and KCWA executed in 1999. The Project is to authorize CLWA to use water delivered from the 41,000 AF of SWP Table A Amount for water demands of existing users and a portion of future water demand from anticipated growth within the CLWA service area. The annual allocations of SWP water made by the California Department of Water Resources (DWR) are based on that year's hydrologic conditions, the amount of water in storage in the SWP system, and other SWP Contractors' requests for SWP supplies. Thus, the actual amount of water available for delivery to CLWA as a result of the 41,000 AF transfer would vary from year to year. Water would be requested by CLWA as needed to meet the demands of its service area, and the transfer of Table A Amount would be one of a number of projects implemented by CLWA (e.g., infrastructure improvements, groundwater banking programs, increased recycling and conservation, and expanded use of local groundwater sources) to increase water reliability. Those projects that are considered reasonably foreseeable and for which sufficient information is available are included in the cumulative impacts analysis contained in the Final EIR.

The Project does not include the construction of any additional SWP facilities or new facilities in the CLWA, KCWA, or WRMWSD service areas.

This is to advise that the Castaic Lake Water Agency has approved the above
☒ Lead Agency ☐ Responsible Agency
described project on December 22, 2004 and has made the following determinations regarding the above described project:

1. The project [☒ will ☐ will not] have a significant effect on the environment.
2. ☒ An Environmental Impact Report was prepared and certified for this project pursuant to the provisions of CEQA.
   ☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☒ was ☐ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final Environmental Impact Report with comments and responses and record of project approval is available to the General Public at:

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

Dan Masnada	General Manager	December 23, 2004
Castaic Lake Water Agency	*Title*	*Date*

Date received for filing at OPR: _____
(CDFG Filing Fee submitted to the Los Angeles County Clerk.)

PROOF OF SERVICE

STATE OF CALIFORNIA)
) ss
COUNTY OF LOS ANGELES)

I am employed in the aforesaid County, State of California; I am over the age of eighteen years and not a party of the within action; my business address is 1880 Century Park East, Suite 200, Los Angeles, California 90067-1602.

On December 30, 2004, I served the foregoing document described as **RETURN TO PEREMPTORY WRIT OF MANDATE** on all parties in this action by placing true copies thereof enclosed in a sealed envelope addressed as follows:

Alyse M. Lazar
Law Office of Alyse M. Lazar
3075 E Thousand Oaks Boulevard, Suite 100
Westlake Village, CA 91362
Attorneys for Petitioner and Appellant
FRIENDS OF THE SANTA CLARA RIVER

X BY MAIL: I caused such envelope to be deposited in the mail at Los Angeles, California. The envelope was mailed with postage thereon fully prepaid. I am "readily familiar" with this firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with U.S. Postal Service on that same day with postage thereon fully prepaid at Los Angeles, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

___ BY PERSONAL SERVICE: I caused such envelope to be delivered by hand to the addressee at the above address.

___ BY FEDERAL EXPRESS (FedEx): I personally delivered such envelope on December 30, 2004, to a FedEx drop box or office in Los Angeles, California, marked for next day/overnight delivery.

___ BY FACSIMILE: I faxed such document to the addressee at the facsimile number listed for each addressee.

I declare that I am employed in the office of a member of the bar of this Court at whose direction the service was made.

I declare under penalty of perjury under the laws of the State of California, that the foregoing is true and correct and that this declaration was executed on December 30, 2004, at Los Angeles, California.

LYNN E. YUN

ATTORNEY OR PARTY WITHOUT ATTORNEY (Name and Address):
Alyse M. Lazar (S.B. [redacted]. 92796)
Law Office of Alyse M. Lazar
3075 E. Thousand Oaks Blvd, Suite 100
WEstlake Village, California 91362
TELEPHONE NO.: (805) 496-5390

FOR COURT USE ONLY

COPY

ORIGINAL FILED
FEB 04 2005
LOS ANGELES SUPERIOR COURT

ATTORNEYS FOR (Name): Friends of the Santa Clara River, Petitioner

Insert name of court and name of judicial district and branch court, if any:
Los Angeles County Superior Court, Central District, Stanley Mosk Courthouse

PLAINTIFF/PETITIONER:
Friends of the Santa Clara River

DEFENDANT/RESPONDENT:
Castaic Lake Water Agency

CASE NUMBER:
BS 056954

NOTICE OF ENTRY OF DISMISSAL AND PROOF OF SERVICE

- ☐ Personal Injury, Property Damage, or Wrongful Death ☐ Motor Vehicle ☐ Other — By Fax
- ☐ Family Law
- ☐ Eminent Domain
- ☒ Other (specify): Petition for Writ of Mandate

TO ATTORNEYS AND PARTIES WITHOUT ATTORNEYS: A dismissal was entered in this action by the clerk as shown on the Request for Dismissal. *(Attach a copy completed by the clerk.)*

Date: February 4, 2005

Alyse M. Lazar
(TYPE OR PRINT NAME OF ☒ ATTORNEY ☐ PARTY WITHOUT ATTORNEY) (SIGNATURE)

PROOF OF SERVICE

1. I am over the age of 18 and not a party to this cause. I am a resident of or employed in the county where the mailing occurred. My residence or business address is:
   3075 East Thousand Oaks Blvd, Suite 100, Westlake Village, California 91362

2. ☒ I served a copy of the Notice of Entry of Dismissal and Request for Dismissal by mailing them, in a sealed envelope with postage fully prepaid, as follows:
   a. ☐ I deposited the envelope with the United States Postal Service.
   b. ☒ I placed the envelope for collection and processing for mailing following this business's ordinary practice with which I am readily familiar. On the same day correspondence is placed for collection and mailing, it is deposited in the ordinary course of business with the United States Postal Service.
   c. Date of deposit: Feburary 4, 2005
   d. Place of deposit *(city and state)*: Westlake Village, California
   e. Addressed as follows *(name and address)*:
   R. Bruce Tepper, 1880 Century Park East, Suite 200, Los Angeles, CA 90067-1602; and
   Russell Behrens, McCormick, Kidman & Behrens, 695 Town Center Drive, Suite 400, Costa Mesa, CA 92626

3. ☐ I served a copy of the Notice of Entry of Dismissal and Request for Dismissal by personally delivering copies to the person served as shown below:
   Name: Date: Time: Address:

4. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: February 4 2005

Alyse M. Lazar
(TYPE OR PRINT NAME) (SIGNATURE OF DECLARANT)

ATTORNEY OR PARTY WITHOUT ATTORNEY (Name and Address)
Alyse M. Lazar (S.B. No. 92796)
Law Office of Alyse M. Lazar
3075 E. Thousand Oaks Blvd, Suite 100
Westlake Village, California 91362

TELEPHONE NO.: (805) 496-5390

ATTORNEY FOR (Name): Friends of the Santa Clara River, Petitioner

FOR COURT USE ONLY

ORIGINAL FILED
FEB 01 2005
LOS ANGELES SUPERIOR COURT

Insert name of court and name of judicial district and branch court, if any:
Los Angeles County Superior Court, Central District, Stanley Mosk Courthouse

PLAINTIFF/PETITIONER:
Friends of the Santa Clara River

DEFENDANT/RESPONDENT:
Castaic Lake Water Agency

CASE NUMBER:
BS 056954

REQUEST FOR DISMISSAL

- ☐ Personal Injury, Property Damage, or Wrongful Death
  - ☐ Motor Vehicle
  - ☒ Other
- ☐ Family Law
- ☐ Eminent Domain
- ☐ Other (specify):

— A conformed copy will not be returned by the clerk unless a method of return is provided with the document. —

1. TO THE CLERK: Please dismiss this action as follows:
   a. (1) ☒ With prejudice (2) ☐ Without prejudice
   b. (1) ☐ Complaint (2) ☒ Petition
      (3) ☐ Cross-complaint filed by (name): on (date):
      (4) ☐ Cross-complaint filed by (name): on (date):
      (5) ☐ Entire action of all parties and all causes of action
      (6) ☒ Other (specify):* See attached

Date: 1/31/05

Alyse M. Lazar
(TYPE OR PRINT NAME OF ☒ ATTORNEY ☐ PARTY WITHOUT ATTORNEY)

(SIGNATURE)

Attorney or party without attorney for:
☒ Plaintiff/Petitioner ☐ Defendant/Respondent
☐ Cross-complainant

* If dismissal requested is of specified parties only, of specified causes of action only, or of specified cross-complaints only, so state and identify the parties, causes of action, or cross-complaints to be dismissed.

2. TO THE CLERK: Consent to the above dismissal is hereby given.**
Date:

(TYPE OR PRINT NAME OF ☐ ATTORNEY ☐ PARTY WITHOUT ATTORNEY)

(SIGNATURE)

Attorney or party without attorney for:
☐ Plaintiff/Petitioner ☐ Defendant/Respondent
☐ Cross-complainant

** If a cross-complaint - Response (Family Law) seeking affirmative relief - is on file, the attorney for cross-complainant (respondent) must sign this consent if required by Code of Civil Procedure section 581(i) or (j).

(To be completed by clerk)
3. ☒ Dismissal entered as requested on (date): FEB 01 2005
4. ☐ Dismissal entered on (date): as to only (name):
5. ☐ Dismissal not entered as requested for the following reasons (specify):
6. ☐ a. Attorney or party without attorney notified on (date):
   b. Attorney or party without attorney not notified. Filing party failed to provide
      ☐ a copy to conform ☐ means to return conformed

FEB 01 2005

Clerk, by H. KWON, Deputy

Date:

Form Adopted by the Judicial Council of California
982(a)(5) [Rev. January 1, 1997]

REQUEST FOR DISMISSAL

Code of Civil Procedure, § 581 et seq.
Cal. Rules of Court, rules 383, 1233

ALYSE M. LAZAR (State Bar No. 92796)
LAW OFFICES OF ALYSE M. LAZAR
3075 E. Thousand Oaks Blvd., Ste. 100
Westlake Village, California 91362
phone: (805) 496-5390
fax: (805)496-7462

Attorney for Petitioner,
FRIENDS OF THE SANTA CLARA RIVER

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

FRIENDS OF THE SANTA CLARA RIVER Petitioner, v. CASTAIC LAKE WATER, Respondent.	CASE NO. BS056954 (Second Dist, Div. Four Appellate Case No. B145283) Honorable David P. Yaffe **ATTACHMENT TO REQUEST FOR DISMISSAL [C.C.P. §581(m)]**

Petitioner, FRIENDS OF THE SANTA CLARA RIVER ("Friends") requests dismissal by the Clerk of the Court in Los Angeles Superior Court Case No. BS 056954 of the entire action as set forth in the Petition for Writ of Mandate filed on April 30, 1999 due to the entry of Judgment in favor of Petitioner filed October 25, 2002 based on Code of Civil Procedure Section 581 (m) pursuant to the Clerk of the Court's ministerial powers.

The Writ Petition which is the subject of the instant proceeding specifically challenged approval of a 1999 project by Castaic Lake Water Agency ("Castaic) for the transfer of 41,000 acre-feet annually of State Water Project water entitlements from the Kern County Water

Agency (KCWA) and its member agency the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) based on an March 29, 1999 Final Environmental Impact Report prepared for and approved by Castaic ("1999 EIR"). On January 10, 2002, Division Four of the Second District California Court of Appeal, in case No. B145283, ordered the trial court to issue a writ of mandate vacating the certification of the 1999 EIR and ordering the trial court to retain jurisdiction until Castaic "certifies an EIR complying with CEQA consistent with the views expressed in this opinion."

On October 25, 2002, the Honorable David P. Yaffe, Judge of the Superior Court, issued a Judgment in favor of Petitioner that was dispositive of all issues raised by the parties in Case No. BS 056954. In conjunction with the Judgment, the Court issued a Peremptory Writ of Mandate requiring Castaic, to decertify its March 29, 1999 Final Environmental Impact Report, to certify a new Environmental Impact Report and to file a return on the writ.

On December 22, 2004, Castaic certified a new Environmental Impact Report for the Supplemental Water Project Transfer of 41,000 Acre-Feet of State Water Project Table A Amount ("2004 EIR") which it claimed complied with CEQA and was consistent with the views expressed by the court of appeal. On January 24, 2005, pursuant to Public Resources Code Section 21168 and Code of Civil Procedure 1094.5, *et seq.*, two new writ proceedings were filed in Ventura County Superior Court challenging the certification of the 2004 EIR and Castaic's project approval based on the 2004 EIR. Ventura County Superior Court Case No. CIV 231588, was brought by Petitioner Planning and Conservation League against Castaic Lake Water Agency, Respondent, and Real Parties in Interest, the California Department of Water Resources, KCWA and WRMWSD. The second case was brought by Petitioner California Water Impact Network against Castaic Lake Water Agency, Respondent, and Real Parties in Interest, the California Department of Water Resources, KCWA and WRMWSD. Both cases are currently pending before the Superior Court in Ventura County. Castaic is a public agency doing business in both Ventura and Los Angeles Counties. Neither petition challenges the 1999 EIR, since the prior EIR was decertified and is null and void.

On or about December 30, 2004, Castaic filed a Return to Peremptory Writ of Mandate

in the present matter based on its certification of the 2004 EIR, requesting discharge of the writ of mandate. No hearing was requested by Castaic pursuant to C.C.P. §1108.

While Friends believes that the new Environmental Impact Report neither complies with the California Environmental Quality Act ("CEQA". Public Resources Code §21000 *et seq.*) nor with the views expressed by the Court of Appeal Opinion filed January 10, 2002, in Case No. B145283, Friends does not desire to initiate an entirely new legal challenge to the 2004 Environmental Impact Report due to limited funding of this not-for-profit organization, utilizing the case number of the prior concluded litigation.

No injunctive relief was imposed upon Castaic which would require further Court proceedings or action and Castaic did not seek hearing before this Court when filing its Return on the Writ thereby waiving any further Court determinations regarding the validity of the 2004 EIR.

Friends therefore requests dismissal of Los Angeles County Superior Court Case No. BS056954 by this Court due to the fact that the Judgment in favor of Petitioner is now final and binding and no outstanding issues remain within the jurisdiction of this Court.

THE LAW OFFICE OF ALYSE M. LAZAR

Dated: January 31, 2005

By _____
Alyse M. Lazar, Esq., Attorney for Petitioner

PROOF OF SERVICE

FRIENDS OF THE SANTA CLARA RIVER V. CASTAIC LAKE WATER AGENCY

Los Angeles County Superior Court Case No. BS 056954

I am employed in the County of Ventura, State of California. I am over the age of eighteen years, and not a party to the within action. My business address is 3075 East Thousand Oaks Boulevard, Suite 100, Westlake Village, California 91362. On February 1, 2005, I served the within documents:

Request for Dismissal

__X__ by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Westlake Village, California, addressed as set forth below.

Attorneys for Respondent, Castaic Lake Water Agency

R. Bruce Tepper, Esq.
1880 Century Park East, Suite 200
Los Angeles, California 90067-1602

Russell G. Behrens, Esq.
McCormick, Kidman & Behrens
695 Town Center Drive, Suite 400
Costa Mesa, California 92626-7187

I am readily familiar with our office's practice for collection and processing of correspondence and other materials for mailing with the United States Postal Service. On February 1, 2005, I sealed the envelope(s) containing the above materials and place the envelope(s) for collection and mailing on this date at the address stated above, following our office's ordinary business practices. The envelope(s) will be deposited with the U.S. Postal Service on this date, in the ordinary course of business.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this Proof of Service was executed on February 1, 2005 at Westlake Village, California.

Alyse M. Lazar

FILED
LOS ANGELES SUPERIOR COURT
JUN 27 2006
JOHN A. CLARKE, CLERK
M Ferrara
BY FERRARA, DEPUTY

California Water Impact Network v. Castaic Lake Water Agency
BS 098724

Tentative decision on demurrers: overruled

Respondents Castaic Lake Water Agency and Kern County Water Agency separately demur to the separate, consolidated petitions for writ of mandate of Petitioners California Water Impact Network ("CWIN") and Planning and Conservation League ("PCL"). Real Party in Interest California Department of Water Resources ("DWR") separately demurs to the petition of CWIN.[1] The court has read and considered the moving, opposition and reply papers, and renders the following tentative decision.

A. Statement of the Case

Petitioner CWIN commenced its petition for writ of mandate in Ventura County Superior Court on January 24, 2005.

CWIN's petition alleges that on December 23, 2004, the Castaic Lake Water Agency ("Castaic"), a public water agency and water wholesaler that treats and delivers water to water reailers in Los Angeles and Ventura Coutnies, approved the permanent transfer of 41,000 acre feet per year from the Kern County Water Agency ("Kern") and its member unit in Kern County, Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), to Castaic (the "Kern water transfer"). Castaic also purported to certify the Environmental Impact Report ("EIR") for the project (the "2004 EIR"). Petitioner claims the Kern water transfer "threatens to promot large-scale urban sprawl in Ventura and Los Angeles Counties, while diverting water from important environmental and agricultural uses in Kern County forever." Petitioner alleges that the 2004 EIR is premature, and fails to comply with CEQA.

The petition's first cause of action is for violation of CEQA. The petition alleges that Castaic violated CEQA in that the DWR, not Castaic, should have been the lead agency for the 2004 EIR, which does not adeqautely describe the background on which the project is based, fails to disclose a reliance on an invalid Urban Water Management Plan, fails to adequately describe alterantives to the project, including a no project alternative, fails to discuss growth inducement, and inaccurately states the availability of water availability.

The second cause of action is for violation of the Urban Water Management Planning Act ("UWMPA") (Water Code §10620 *et seq.*). The petition alleges that UWMPA requires Castaic

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[1]DWR's demur to the petition of CWIN is based on the fact that the petition seeks to set aside Castaic's approvals of a 2004 EIR and makes no allegation or request for relief against DWR. DWR does not explain why a real party in interest to a petition has a right to demurrer. On the other hand, the petition purports to be "against" DWR. To the extent that DWR has the right to do so, the unopposed demurrer is sustained without leave to amend.

Real Party in Interest Wheeler Ridge purports to join in Castaic's demurrers. A "notice of joinder," at least absent a separate demurrer and memorandum of points and authorities incorporating by reference another party's arguments, is nothing more than a cheerleading effort that the moving party should prevail and has no legal effect. *See* Frazee v. Seely, (2002) 95 Cal.App.4th 627, 636 (a notice of joinder cannot be used to "join" another party's motion for summary judgment).

to adopt an urban water management plan that contains accurate information and analysis. Castaic's plan used to support the project is a deficient plan declared invalid in Friends of the Santa Clara River v. Castaic Lake Water Agency, (2004) 123 Cal.App.4th 1.

The third cause of action is for violation of the public trust doctrine. The public trust doctrine has its underpinnings in the State Constitution and statutory law, and imposes on Castaic a duty not to harm those who seek to enjoy the Santa Clara River. Castaic's approval of the project violates the doctrine because of inadequate environmental and hydrological reviews, an invalid EIR, the above violation of UWMPA, and the fact that the project poses an unreasonable risk to the water of the Santa Clara River.[2]

Also on January 24, 2005, Petitioner PCL filed its petition for writ of mandate against Castaic in Ventura County Superior Court. The PCL petition alleges a violation by Castaic in recording a notice of determination on December 23, 2004, certifying the 2004 EIR and rendering its approval of the Kern water transfer. The petition purports to allege five "causes of action" for violation of CEQA based on Castaic stealing DWR's duty to be the lead agency for the EIR, certification of a defective EIR, approval of inadequate findings, erroneous presentation of the project as already complete, and "prejudicial abuse of discretion."

On June 22, 2005, upon motion by Castaic, the Ventura County Superior Court (the Honorable Frederick H. Bysshe, Jr.) ordered the transfer of both petitions, which had been consolidated, to Los Angeles. On March 27, 2006, the case was reassigned to this court.

B. Applicable Law

Where pleadings are defective, a party may raise the defect by way of a demurrer or motion to strike or by motion for judgment on the pleadings. CCP §430.30(a); Coyne v. Krempels, (1950) 36 Cal.2d 257. The party against whom a complaint or cross-complaint has been filed may object by demurrer or answer to the pleading. CCP §430.10. A demurrer is timely filed within the 30-day period after service of the complaint. CCP § 430.40; Skrbina v. Fleming Companies, (1996) 45 Cal.App.4th 1353, 1364.

A demurrer may be asserted on any one or more of the following grounds: (a) The court has no jurisdiction of the subject of the cause of action alleged in the pleading; (b) The person who filed the pleading does not have legal capacity to sue; (c) There is another action pending between the same parties on the same cause of action; (d) There is a defect or misjoinder of parties; (e) The pleading does not state facts sufficient to constitute a cause of action; (f) The pleading is uncertain ("uncertain" includes ambiguous and unintelligible); (g) In an action founded upon a contract, it cannot be ascertained from the pleading whether the contract is written, is oral, or is implied by conduct; (h) No certificate was filed as required by CCP §411.35 or (i) by §411.36. CCP §430.10. Accordingly, a demurrer tests the sufficiency of a pleading, and the grounds for a demurrer must appear on the face of the pleading or from judicially noticeable matters. CCP §430.30(a); Blank v. Kirwan, (1985) 39 Cal.3d 311, 318.

In determining the sufficiency of a complaint against a demurrer, the court reads the

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[2]On CWIN's oral motion, the petition's second and third causes of action have been dismissed. As a result, both petitions solely concern Castaic's compliance with CEQA in the 2004 EIR.

complaint as including matters subject to judicial notice. Sirott v. Latts, (1992) 6 Cal.App.4th 923, 928. A demurrer can be based on facts judicially noticed, even if those facts contradict the allegations of the complaint. Shahvar v. Superior Court, (1994) 25 Cal.App.4th 653, 659, fn. 1. When court records which the court may judicially notice provide ground for objection to a complaint, a demurrer on that ground is proper. Ev.C §452(d); Britz, Inc. v. Dow Chemical Co., (1999) 73 Cal.App.4th 177, 180. However, even though judicial notice of the existence of another court's findings of fact and conclusions of law is appropriate, judicial notice of the truth of a judge's factual finding is inappropriate. Sosinsky v. Grant, (1992) 6 Cal.App.4th 1548, 1568-1569.

The sole issue on demurrer for failure to state a cause of action is whether the facts pleaded, if true, would entitle the plaintiff to relief. Garcetti v. Superior Court, (1996) 49 Cal.App.4th 1533, 1547; Limandri v. Judkins, (1997) 52 Cal.App.4th 326, 339. The question of plaintiff's ability to prove the allegations of the complaint or the possible difficulty in making such proof does not concern the reviewing court. Quelimane Co. v. Stewart Title Guaranty Co., (1998) 19 Cal.4th 26, 47. The ultimate facts alleged in the complaint must be deemed true, as well as all facts that may be implied or inferred from those expressly alleged. Marshall v. Gibson, Dunn & Crutcher, (1995) 37 Cal.App.4th 1397, 1403. Nevertheless, this rule does not apply to allegations expressing mere conclusions of law, or allegations contradicted by the exhibits to the complaint or by matters of which judicial notice may be taken. Vance v. Villa Park Mobilehome Estates, (1995) 36 Cal.App.4th 698, 709.

C. Judicial Notice

Castaic asks the court to judicially notice: (1) its Resolution 2041, dated March 29, 1999; (2) a petition for writ of mandate in Friends of the Santa Clarat River v. Castiac Lake Water Agency, BS056954 ("Friends"), (3) an October 25, 2002 Judgment granting Peremptory Writ of Mandate in Friends, (4) the court of appeal's December 1, 2003 decision in Friends, B164027, (5) a May 5, 2003 settlement agreement in Planning and Conservation League v. Department of Water Resources, Sacramento County Case Nol 95CSo3216, and the Order approving the settlement agreement, (6) the executive summary of Castaic's December 2004 EIR, (7) Castaic's December 30, 2004 Return to Peremptory Writ mandate in Friends, (8) the February 7, 2005 reporter's transcript in Friends, (9) the February 7, 2005 *ex parte* application to vacate entry of dismissal in Friends, and (10) a mailing list of Castaic's December 2004 EIR.

The court records are subject to judicial notice and the request is granted as to nos. 2, 3, 4, 5 (including the settlement agreement, which is attached to the order), 7, and 9. Ev. Code §452(d). The public agency resolution is also subject to judicial notice, and the request is granted as to 1. Ev. Code §452(b). The executive summary of the December 2004 EIR, the reporter's transcript, and the mailing list are not subject to judicial notice and the request is denied as to those items.

PCL asks the court to judicially notice (1) the February 1, 2005 dismissal and notice of entry of dismissal in Friends, (2) Castaic's March 5, 2005 petition for writ of mandate, filed in the court of appeal in Friends, (3) a March 9, 2005 letter to the Honorable Norma Epstein from Atty Alyse M. Lazar, Esq., seeking dismissal of Castaic's petition for writ of mandate in the appellate court of Friends, (4) an April 14, 2005 court of appeal order denying Castaic's petition, and (5) a May 17, 2005 appellate order dismissing the appeal in Friends.

The court takes judicial notice of the court records, items 1 (dismissal only), 2, 4, and 5. Ev. Code §452(d). The notice of entry of dismissal and letter to the court of appeal are not court records, and the request is denied as to those items.

Castaic filed a supplemental request for judicial notice on March 14, 2006, and asks the court to judicially notice the following: (1) PCL's September 29, 2003 application in the appellate court to file an *amicus* brief in Friends, (2) appellant's reply brief on appeal in Friends, (3) Castaic Water Agency law from Deerings, (3) Kern Water Agency law in Deerings, and (4) Senate Bill 231, the First Validation law.

Each of these items is subject to judicial notice, if relevant. The court takes judicial notice of their existence. Ev. Code §§ 452(a), (b), (d).

D. Statement of Facts

In 1951, the Legislature authorized construction of a state water storage and delivery system. Planning & Conservation League v. Department of Water Resources, (2000) 83 Cal.App.4th 892, 898. The Legislature subsequently authorized the State Water Project ("SWP"), a complex system of reservoirs, dams, power plants, pumping plants, canals and aqueducts to deliver 4.23 million acre-feet of water annually. DWR is a major developer of water resources in California. It builds and operates the facilities and manages the SWP.

In 1961, DWR entered into individual contracts with various agricultural and urban water suppliers in the State, referred to as State Water Contractors. The contracts entitled the contractors to receive an annual amount of water in exchange for a proportionate share of financing and maintaining the SWP facilities. There are 29 agencies or districts that currently are State Water Contractors, including Castaic, which is a special act district in North Los Angeles County, created by uncodified Cataic Lak Water Agency Law, and formed to provide a supplemental supply of water to the water purveyors of the Santa Clarita Valley.

In 1994, an agreement was reached between the State Water Contractors and and DWR (the "Monterey Agreement") in which the allocation was changed between agricultural and urban contractors of entitlements to SWP water. The principles of the Monterey Agreement were implemented through a separate amendment to each State Water Contractor's contract with DWR (the "Monterey Amendment"). The Monterey Amendment was approved in 1995 and went into effect in 1996. A program EIR analyzing the environmental impacts of the Monterey Agreement was prepared and certified in 1995.

In late 1995, a lawsuit was filed in Sacramento Superior Court challenging the program EIR entitled Planning & Conservation League v. Department of Water Resources, ("PCL")

Pursuant to the Monterey Amendment, in March 1999, Castaic resolved to purchase from Kern and its member unit in Kern County, Wheeler Ridge, an entitlement to 41,000 acre-feet per year of water (the Kern water transfer). Castaic acted as lead agency and on March 29, 1999 certified an EIR for the transfer which tiered off the 1995 Monterey Amendment program EIR.

In April 1999, Castaic's EIR for the Kern water transfer was challenged in Friends of the Santa Clara River v. Cataic Lake Water Agency, BS056954 ("Friends"). On August 16, 2000, the trial court entered judgment, denying the petition in its entiretly.

Also in 2000, the Third Appellate District found the program EIR for the Monterey Agreement to be indequate in Planning & Conservation League v. Department of Water Resources, ("PCL") (2000) 83 CalApp.4th 892. The PCL appellate court directed the

Sacramento Superior court to retain jurisdiction over the PCL action until a new EIR was prepared and certified.

Based on the Third District's PCL decision, on January 10, 2002, the Second Appellate District reversed the judgment in Friends and directed the trial court to issue a writ of mandate compelling Castaic to set aside certification of its EIR. The reversal was based on the fact that Castaic's EIR had been tiered upon the now inadequate Monterey Agreement EIR. The Second District, however, rejected all of the other challenges to Castaic's EIR, finding them to be without merit. The appellate court noted that Castaic may be able to cure the defect by waiting for DWR to comply with the Third District's directive in PCL by preparing a new program EIR. Castaic could issue a subsequent EIR, a supplement to EIR, or addendum to EIR, tiering upon the new Montery Agreement EIR.

The Friends appellate decision concluded as follows: "The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until Respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under [Pub. Resources Code] section 21168.9."

On October 25, 2002, after remand from the court of appeal, the Friends trial court issued a Peremptory Writ of Mandate and Judgment on Remand, retaining jurisdiction until Castaic certifies an EIR that complies with CEQA and is consistent with the views expressed by the Second District. The trial court considered and denied the petitioner's request to enjoin Castaic from using any of the 41,000 acre feet of additional water alloted to it by the Kern water transfer.[3]

On June 6, 2003, the Sacramento Superior Court approved a settlement in PCL in which DWR agreed to prepare a new EIR for implementation of the Monterey Agreement, including the Kern water transfer (the "Settlement Agreement"). The Settlement Agreement also provided that the Monterey Amendment would remain in operation until the EIR is prepared. The Settlement Agreement expressly acknowledged the Friends litigation in Los Angeles Superior Court concerning Castaic's 1999 EIR for the Kern water transfer, with the parties agreeing that "jurisdiction with respect to [Friends] should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." PCL Settlement Agreement at 12.

On December 30, 2004, Castaic filed its return to the peremptory writ of mandate in Friends. The return stated that Castaic had certified a new EIR (the 2004 EIR) on December 22, 2004 and approved the Kern water transfer.

CWIN and PCL did not intervene in Friends. Instead, on January 24, 2005, CWIN and PCL filed separate petitions for writ of mandate in Ventura County concerning Castaic's compliance with CEQA in the 2004 EIR, and other issues.

On February 1, 2005, Petitioner in Friends filed a dismissal with prejudice. On February 7, 2005, the trial court in Friends held a hearing on Castaic's *ex parte* application to vacate Petitioner's dismissal with prejudice and seeking an order discharging the writ of mandate.

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[3]This decision was upheld by the court of appeal on December 1, 2003, in case no. B164027 ("Friends II"). PCL filed an *amicus* brief supporting the petitioner in Friends II.

Castaic argued that, by dismissing, Petitioner was attempting to get the clerk, through ministerial act, to divest the court of its continuing jurisdiction over the 2004 EIR prepared in response to the court's peremptory writ of mandate. Instead, Petitioner was passing the baton to CWIN and PCL, which initially filed the instant action in Ventura County, for a challenge to the 2004 EIR.

Castaic argued that the petitioner's dismissal violated the one judgment rule in that there had already been a judgment in the proceeding. Moreover, once Castaic filed its return, the trial court was required to "determine whether there had been adequate compliance with the previously issued writ." (Citation omitted.) Any order of discharge without a determination that the 2004 EIR complies with CEQA would be a material variance from the directions of the appellate court. Since any challenge to the 2004 EIR had to be made in the Friends action, and since Petitioner had failed to challenge it, Castaic was entitled to have the dismissal vacated and an order discharging the previously issued writ of mandate.

The trial court declined to set aside the dismissal, stating that whether the Ventura proceedings were a continuation of the Friends lawsuit was an issue of fact for the Ventura (now this) court.

On March 5, 2005, Cataic petitioned the Second Appellate District for a writ of mandate with respect to the trial court's refusal to vacate the dismissal, arguing that the trial court violated Pub. Resources Code section 21168.9 (stating that the trial court shall maintain jurisdiction over the agency's proceedings until the court has determined that the agency has complied with CEQA) because it had not yet determined that the 2004 EIR complied with CEQA Yet, under CEQA, a trial court that orders preparation of a new EIR must retain jurisdiction for a final determination of the EIR's validity.

On April 14, 2005, the Second Appellate District denied Castaic's petition for "failure to demonstrate that the 'retain jurisdiction' provision of Public Resources Code section 21168.9, subdivision (b), abrogates the entitlement to voluntary dismissal conferred by Code of Civil Procedure section 581, subdivision (b)(1)."[4]

C. Analysis

Respondents Castaic and Kern[5] demur to the separate petitions of CWIN and PCL. They contend that the petitions are collateral attacks on a final judgment in another case and are barred by the doctrine of *res judicata* and the applicable statutes of limitation.

1. Statute of Limitations

Castaic argues that the challenge is time-barred by the CEQA statute of limitations. It contends that, although both petitions "contain allegations of CEQA violations, both petitions clearly seek a judgment invalidating the contract documents between Castaic, DWR, Kern, and

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[4]The Second District later dismissed Castaic's appeal from the Friends dismissal, finding that the voluntary dismissal was not appealable. *See* H.D. Arnaiz, Ltd. v. County of San Joaquin, (2002) 96 Cal.App.4th 1357, 1364-67.

[5]Kern's demurrer incorporates the points and authorities in Castaic's demurrer. For convenience, reference to Castaic's demurrer shall mean the demurrer of both Castaic and Kern.

Wheeler Ridge...." Castaic argues that the gravamen of the petitions is a reverse validation action challenging the validity of these contracts and, indeed, Petitioners cannot challenge the validity of the contracts any other way. Since the contracts were entered into in 1999, and no challenge was made to them, they have all been passively validated.

A validation action under CCP section 860 *et al.* is a lawsuit filed and prosecuted for the purpose of securing a judgment determining the validity of a particular local governmental decision or act. N.T. Hill, Inc. v. City of Fresno, (1999) 72 Cal.App.4th 977. The validation proceeding is *in rem* and is binding on the agency seeking the judgment and on all other parties. Id. The purpose of the validation statutes is to provide a simple and uniform method for testing the validity of government action. Embarcadero Municipal improvement Dist. v. County of Santa Barbara, (1998) 63 Cal.App.4th 781. The key objective of a validation action is to limit the extent to which delay due to litigation may impair a public agency's ability to operate. Friedland v. City of Long Beach, (1998) 62 Cal.App.4th 835.

In addition, any interested person can bring an action to challenge the validity of an agency's action under CCP section 860, known as a "reverse validation" action. Both a validation action and a reverse validation action must be filed within 60 days of the public agency's action. CCP §§ 860, 863. If neither a validation action by the agency nor a reverse validation action by an interested person is timely filed, the agency's action is deemed valid. *See* Hills for Everyone v. Local Agency Formation Commission of Orange County, (1980) 105 Cal.App.3d 461, 568 (passive validation is a third method of validating an agency action).

Castaic is correct that the Monterey Agreement, the Monterey Amendment, and the various contracts between DWR and the State Water Contractors, including Castaic, were never challenged. As such, they are deemed to be valid agreements. But CWIN and PCL petitions do not challenge the validity of the agreements, or even the 1999 EIR. The petitions only challenge Castaic's 2004 EIR as complying with CEQA.[6]

The remedy for a violation of CEQA is a writ of mandate to compel the agency to comply. This remedy does not affect the validity of Castaic's agreements, the contracts which led Castaic to issue the 2004 EIR. It is true, as CWIN argues, that Guideline section 15092 permits the lead agency to decide whether to even carry out the project after considering the final EIR. Such consideration may cause the agency to reach a different conclusion on whether or how to carry out the Kern water transfer. But the decision whether to perform the agreements will be the lead agency's decision, based on an appropriate EIR; that fact has no effect on the validity of existing agreements. The petitions of CWIN and PCL are not reverse validation actions, and have no direct effect on the validity of Castaic's 1999 contracts, all of which are deemed valid as a matter of law.

Castaic next argues that the statute of limitations has passed for petitions challenging the 2004 EIR under CEQA. The decision to appprove the Kern water transfer was made in 1999, and any CEQA challenge to the transfer was required at that time. Subsequent Castaic actions performing the Kern water transfer will not revive the limitations period.

In this regard, Castaic contends that the 2004 EIR was merely a return EIR complying

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[6]Although CWIN's petition raised other claims, those claims have been dismissed. Both petitions raise only a CEQA challenge to the 2004 EIR.

with the Friends trial court's writ of mandate, and no legal challenges to this EIR could be made outside of the Friends action. Hence, CEQA does not apply to agency actions taken at the direction of a court. Guidelines, §15379.

Castaic's first argument again focuses on the wrong document. The petitions challenge the 2004 EIR, not the 1999 EIR. The CEQA statute of limitations for challenging an agency approval of a project for which an EIR was prepared is 30 days, beginning from the filing of the notice of determination required by Pub. Resources Code §21108(a). Pub. Resources Code §21167(c). Notices of Determination for the 2004 EIR were filed in various counties between December 23rd and December 27, 2004. The petitions in this case was filed on January 24, 2005, within the 30-day limitation period. The petitions are not time-barred under CEQA.

Castaic's second argument, that a return EIR can be challenged only in the pending case, misunderstands the nature of post-writ proceedings. A judgment in a CEQA proceeding orders the issuance of a peremptory writ that conforms to the limitations of CCP setion 1094.5. The principal function of the writ is to command the agency to set aside its decision. A "return" on the writ is the agency's formal notification of its action in response to the writ. The return can inform the court that it has (1) complied with the writ, (2) filed a notice of appeal, or (3) requested writ review in an appellate court. The trial court has continuing jurisdiction until the writ is satisfied. CCP §1097; County of Inyo v. City of Los Angeles, (1977) 71 Cal.App.3d 185. The court may issue any orders "necessary and proper for the complete enforcement of the writ." Id. at 205; California Trout, Inc. v. Superior Court, (1990) 218 Cal.App.3d 187, 202.

When the agency files a return demonstrating compliance with a peremptory writ, the petitioner may object to the adequacy of the return and the trial court may order a hearing on the objections. Sanders v. City of Los Angeles, (1970) 3 Cal.3d 252, 256. A petitioner may also challenge the agency's compliance with the writ in a new petition for writ of mandate or a supplemental petition (using the original action number). CCP §1097; City of Carmel-By-the-Sea v. Board of Supervisors, (1982) 137 Cal.App.3d 964, 971 (rejecting argument that violation of writ could be challenged only by new writ proceeding); County of Inyo, 71 Cal.App.3d at 188, 205 (retention of jurisdiction in appellate court until compliance with writ).[7]

Petitioners CWIN and PCL were not the petitioner in Friends. They apparently were "invited" to intervene in Friends, and could have done so. They chose not to do so. CWIN and PCL still may challenge the 2004 EIR, which was part of Castaic's return on the Friends writ, in a new writ proceeding. The statute of limitations for that challenge is 30 days from the filing of

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[7]Castaic contends that CEQA vests original and exclusive jurisdiction with the first action challenging a project under CEQA. Repy at 6. Castaic cites Pub. Resources Code section 21168.9(b) for the proposition that "[n]o new legal challenges to the [p]roject, including new challenges or objections to the [r]eturn EIR are permitted outside of that action."

Section 21168.9(b) does not say anything about exclusive jurisdiction, merely discussing the trial court's continuing jurisdiction to ensure compliance. Continuing jurisdiction says nothing about exclusivity. Indeed, Castaic's argument of exclusivity is directly contrary to City of Carmel-By-the-Sea (a petitioner can file a new petition in lieu of objecting to the return in the pending case). Duplicate challenges to an agency's EIR must be addressed through the common law principles of *res judicata* and *collateral estoppel.*

a notice of determination, and it is undisputed that the petitions were timely filed for purposes of a new proceeding. *See* Pub. Resources Code §21167(c).

2. Exclusive Jurisdiction

Castaic contends that the instant petitions are impermissible collateral attacks on the 2004 EIR because the PCL Settlement Agreement provided for exclusive jurisdiction in the Friends court over all legal challenges to the Kern water transfer. Since PCL involved a reverse validation claim, the Settlement Agreement is binding on the general public, including Petitioners herein. Petitioners' failure to raise a CEQA challenge in the Friends case bars them from doing so collaterally.

This argument is specious. First, the PCL Settlement Agreement did not purport to convey exclusive jurisdiction on the Friends court for the Kern water transfer. The Settlement Agreement merely noted that there was ongoing litigation concerning the Kern water transfer in Los Angeles Superior Court, and that the Settlement Agreement did not purport to interfere with that litigation. This acknowledgement that the PCL parties could not interfere with the Friends litigation is hardly startling. The Settlement Agreement could not intefere with the jurisdiction of the Friends court, and did not purport to do so. Nor could the Settlement Agreement purport to confer jurisdiction. Jurisdiction cannot be conferred by consent, waiver, or estoppel. 2 Witkin, California Procedure, (1996) §12, 556. Only the Legislature, bounded by constitutional principles, can confer jurisdiction.

Second, even if *arguendo* the parties did intend to convey to the Friends court jurisdiction for all challenges to the Kern water transfer, the Friends petitioner dismissed its case at a time when the CWIN and PCL petitions were pending in Ventura. That dismissal could not possibly foreclose jurisdiction over their claims that the 2004 EIR violates CEQA. At most, it would have required reopening of Friends and the transfer of the petitions to the reopened case.

In short, the Friends court did not have exclusive jurisdiction for a challenge to the 2004 EIR. CWIN and PCL had the option of intervening in Friends or filing a new petition. Instead of intervening, CWIN and PCL made the perfectly permissible election to file new petitions.[8]

3. Res Judicata

Castaic next argues that, even if Petitioners have the right to raise a CEQA challenge to

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[8]Castaic argues that the 2004 EIR is a "Return EIR" not suject to a "new cause of action" under CEQA. According to Castaic, a second EIR on the same project is either a return EIR prepared in response to a writ of mandate or a revised EIR if modified prior to certification. An EIR for an expanded or changed project is a supplement or addendum, or possibly a subsequent or supplemental EIR. Reply at 5.

While Castaic is generally correct about the different types of EIR, it presents no evidence on the scope of review of such documents. The court has no reason to believe that a second EIR, whatever it is called, should not be reviewed for compliance with CEQA on any new matter considered in the document, any old matter that was defective in the previous document, and any revision or new feature of the project. In any event, the scope of review of the 2004 EIR is not generally at issue in this demurrer.

the 2004 EIR in a separate proceeding, the instant petitions are impermissible collateral attacks on the 2004 EIR because the result in Friends is *res judicata* for the new petitions. Castaic argues that the purposes of CEQA are frustrated unless, as Pub. Resources Code section 21168.9(b) requires, subsequent environmental review of an EIR is limited to that which is necessary to bring the project into compliance. Therefore, the instant petitions are collateral attacks on the determination that the 2004 EIR complies with CEQA, and barred by *res judicata.*

In its narrowest form, *res judicata* "precludes parties or their privies from re-litigating a cause of action [finally resolved in a prior proceeding]." Teitelbaum Furs, Inc. v. Dominion Ins. Co., Ltd., (1962) 58 Cal. 2d 601, 604. "*Res judicata* describes the preclusive effect of a final judgment on the merits." Mycogen Corp. v. Monsanto Co., (2002) 28 Cal.4th 888, 896. (Italics added). "*Res judicata*, or claim preclusion, prevents relitigation of the same cause of action in a second suit between the same parties or parties in privity with them." Id. (Italics added). "*Collateral estoppel*, or issue preclusion, 'precludes relitigation of issues argued and decided in prior proceedings.'" Id. (Italics added) (quoting Lucido v. Superior Court, (1990) 51 Cal.3d 335, 341). "Under the doctrine of *res judicata*, if a plaintiff prevails in an action, the cause is merged into the judgment and may not be asserted in a subsequent lawsuit; a judgment for the defendant serves as a bar to further litigation of the same cause of action." Mycogen Corp., *supra*, 28 Cal.4th at 896-897 (italics added). "*Res judicata* precludes piecemeal litigation by splitting a single cause of action or relitigation of the same cause of action on a different legal theory or for different relief." Id. (Italics added) (quoting Weikel v. TCW Realty Fund II Holding Co., (1997) 55 Cal.App.4th 1234, 1245).

California's *res judicata* doctrine is based upon the primary right theory. Mycogen Corp., *supra*, 28 Cal.4th at 904. "The primary right theory is a theory of code pleading that has long been followed in California. It provides that a 'cause of action' is comprised of a 'primary right' of the plaintiff, a corresponding 'primary duty' of the defendant, and a wrongful act by the defendant constituting a breach of that duty." Crowley v. Katleman, (1994) 8 Cal.4th 666, 681-682. "The most salient characteristic of a primary right is that it is indivisible: the violation of a single primary right gives rise to but a single cause of action." Id. "As far as its content is concerned, the primary right is simply the plaintiff's right to be free from the particular injury suffered." Id. "It must therefore be distinguished from the *legal theory* on which liability for that injury is premised: 'Even where there are multiple legal theories upon which recovery might be predicated, one injury gives rise to only one claim for relief.'" (emphasis in original) Id. "The primary right must also be distinguished from the *remedy* sought: 'The violation of one primary right constitutes a single cause of action, though it may entitle the injured party to many forms of relief, and the relief is not to be confounded with the cause of action, one not being determinative of the other.'" (emphasis in original) Id. "The primary right theory . . . is invoked when a plaintiff attempts to divide a primary right and enforce it in two suits. The theory prevents this result by either of two means: (1) if the first suit is still pending when the second is filed, the defendant in the second suit may plead that fact in abatement [citations]; or (2) if the first suit has terminated in a judgment on the merits adverse to the plaintiff, the defendant in the second suit may set up that judgment as a bar under the principles of *res judicata.*" Id. (Italics added).

Res judicata applies if (1) the decision in the prior proceeding is final and on the merits;

(2) the present preoceeding is on the same cause of action as the prior proceeding; and (3) the parties in the present proceeding or parties in privity with them were parties to the prior proceeding. Federation of Hillside & Canyon Assns. v. City of Los Angeles, (2004) 126 Cal.App.4th 1180, 1202.

The first factor for *res judicata* is that the prior proceeding is final and on the merits. Castaic argues that the dismissal with prejudice in Friends was a retraxit; that is, a final judgment in Castaic's favor that the 2004 EIR for Castaic's water transfer project complies with CEQA.

A voluntary dismissal with prejudice is a renunciation by a plaintiff in open court of his suit, and constitutes a retraxit. This is "equivalent to a judgment on the merits and as such bars further litigation on the same subject matter between the parties." Le Parc Community Ass'n. v. Workers' Comp. Appeals Bd., (2003) 110 Cal.App.4th 1161, 1169. Even a dismissal without prejudice, where it is filed in return for the consideration of a settlement, acts as a retraxit so that it bars further litigation on the same subject matter between the parties. Gates v. Superior Court, 178 Cal.App.3d 301, 311.

After prevailing on the 1999 EIR and obtaining a writ of mandate, the petitioner in Friends dismissed the remaining issues — that is, Castaic's return on the writ and compliance with CEQA. The dismissal was without consideration, but it was made with prejudice. Therefore, the Friends petitioner essentially renounced in open court its right to contest the remaining issues, including Castaic's return and 2004 EIR. This was a retraxit or a judgment on the merits. As between the Friends petitioner and Castaic, the issues necessarily determined by dismissal of the Friends action are (1) the invalidity of the 1999 EIR based soley on its tiering on the Monterey Agreement program EIR, and (2) the 2004 EIR's compliance with CEQA (because the petitioner waited to dismiss with prejudice until after the time passed to object to the 2004 EIR).[9]

The second factor for *res judicata* is whether the two proceedings concern the same cause of action. Two proceedings involve the same cause of action if they concern the same primary right. When a CEQA challenge is filed, the primary right asserted is the right of the public to be fully informed of the environmental consequences of a given project, with the corresponding duty of the public agency to provide that full disclosure. Laurel Heights Improvement Assn. v. Regents of the University of California, (1988) 47 Cal.3d 376, 391; Federation of Hillside & Canyon Assn's. v. City of Los Angeles, (2005) 126 Cal.App.4th 1180, 1203-1204.

Petitioners CWIN and PCL argue that the cause of action in Friends differs from the cause of action in their petitions because the two cases concern different EIRs. The trouble is that they don't. Castaic is correct that Friends concerned both the 1999 EIR and the 2004 EIR. The primary right in Friends was Castaic's alleged failure to comply with CEQA with respect to the water project, initially through the 1999 EIR and subsequently through the 2004 EIR. The primary right in the present proceeding is Castaic's failure to comply with CEQA with respect to

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[9]This dismissal was outside the time within which the petitioner had to challenge the 2004 EIR. That is, the 2004 EIR and notices of determination for the 2004 EIR were filed between December 23 and 27, 2005. The Friends petitioner had the same 30 day period to object to the return as it had to file a new petition. By waiting more than 30 days before filing its dismissal, the Friends petitioner silently acknowledged the validity of the 2004 EIR.

the water project, currently only with respect to the 2004 EIR.[10] The primary right is the same in each case.

The third factor for *res judicata* is whether the same parties, or parties in privity with them, are in the second proceeding. Castaic points out that the modern concept of privity has been expanded for *res judicata* purposes to exist where (1) the new party has an identity of interest with the party in the prior proceeding (2) was adequately represented by the party in the first proceeding, and (3) should expect to be bound by the prior adjudication. Helfand v. National Union Fire Insurance Co., (1992) 10 Cal.App.4th 869, 902.

Applying these three factors, the parties are not in privity. The first factor certainly is present. CWIN and PCL are public interest groups that have a community of interest. Each wants to protect the local water resources, including the Santa Clara River watershed.

But the second factor is lacking. CWIN and PCL were not adequately represented by the petitioner in Friends. That petitioner did pursue and obtain the writ of mandate that compelled Castaic to decertify the 1999 EIR.[11] However, the Friends petitioner did not adequately represent PCL and CWIN's interests with respect to the 2004 EIR.

This fact is neatly demonstrated by the timing: PCL and CWIN filed their petitions on January 24, 2005, a week before the Friends petitioner dismissed. This timing shows that PCL and CWIN chose to represent themselves, and not rely on the Friends petitioner, with respect to the 2004 EIR. Friends was dismissed without the trial court's review of the 2004 EIR or administrative record. The trial court accepted the dismissal as the Friends petitioner's retraxit. CWIN and PCL were not adequately represented by the Friends petitioner's actions. *Cf.* Citizens for Open Acess v. Seadrift Assn., (1998) 60 Cal.App.4th 1053, 1072 (agency's successful prosecution and settlement of case consistuted adequate representation of private petitioner's interests for privity).

No doubt PCL and CWIN knew that the Friends petitioner was not going to pursue a challenge to the 2004 EIR. This may show collusion, as Castaic suggests, but it also shows that PCL and CWIN had no intention of relying on the Friends petitioner to pursue their claims for the 2004 EIR. Those claims concern who the lead agency should be for the EIR (CWIN and PCL contend that it should be DWR), and whether Castaic should have deferred it analysis of the 41,000 acre feet transfer until after the revised Monterey Amendment program EIR. When the Friends petitioner dismissed that case, it was not purusing these claims, and not representing the interests of PCL and CWIN.

The third factor — the new party should expect to be bound by the prior adjudication — also is missing. In filing their petitions before the Friends petitioner dismissed, CWIN and PCL plainly demonstrated that they did not intend to be bound by any adjudication with respect to the

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[10]The court uses the word "currently" because, if the 2004 EIR is found to be defective, Petitioners would want the right to challenge any subsequent EIR purporting to comply with a writ of mandate as part of this proceeding.

[11]This suggests that CWIN and PCL would be bound for purposes of *collateral estoppel* by the determination in Friends that the 1999 EIR was adequate if it tiered upon an adequate a DWR program EIR.

2004 EIR.

In sum, the dismissal of Friends would be *res judicata* for the Friends petitioner in a subsequently filed case. It is not, however, *res judicata* for PCL and CWIN.

4. Collateral Estoppel

Castaic argues that even if there is no privity between the Friends petitioner and CWIN and PCL, the latter can have no greater rights than the former. Specifically, had petitioners intervened in Friends they would have been "limited in their challenge" to the 2004 EIR.

This challenge is inappropriate for demurrer because it does not dispose of a cause of action. Nonetheless, the above discussion necessarily has included *collateral estoppel* principles, and the court will discuss the issue solely for the parties' benefit and convenience.

As stated above, *collateral estoppel*, or issue preclusion, "precludes relitigation of issues argued and decided in prior proceedings." Mycogen Corp. v. Monsanto Co., 28 Cal.4th at 896 (quoting Lucido v. Superior Court, (1990) 51 Cal.3d 335, 341). *Collateral estoppel* is intended to preserve the integrity of the judicial system, promote judicial economy, and protect litigants from harassment by vexatious litigation. Id. at 335, 343. *Collateral estoppel* applies to bar re-litigation of an issue if (1) the issue is identical to an issue litigated in the first action; (2) the issue was actually litigated and necessarily decided in the first action; (3) the party in the second action was a party or one in privity to a party in the first action; and (4) the decision in the first action was on the merits. McCutchen v. City of Montclair, (1999) 73 Cal. App. 4th 1138, 1145.

The Friends petitioner was in privity with CWIN and PCL on all aspects of the Friends litigation until it decided not to pursue objection to the 2004 EIR. Thus, Castaic is correct that CWIN and PCL are bound by the Second District's decision that the 1999 EIR was acceptable but for its tiering upon the Monterey Agreement program EIR. The three entities had a community of interest, the Friends petitioner adequately represented the interests of CWIN and PCL through that stage, and CWIN and PCL would.expect to be bound by the appellate decision. *See* Federation of Hillside & Canyon Assns. v. City of Los Angeles, (2005) 126 Cal.App.4th 1180, 1204. However, they are not bound by the Friends petitioner's actions on Castaic's return, including the 2004 EIR, because they are not in privity with that petitioner at that stage of the Friends action.

D. Conclusion

In sum, the court has jurisdiction over the petitions, which were timely filed. The doctrine of *res judicata* does not bar the petitions in this matter. However, principles of *collateral estoppel* bar them from re-raising issues resolved by the Second District with respect to the 1999 EIR. This fact does not make demurrer appropriate, however. The demurrers of Castaic and Kern are overruled.

JOHN SOMMO

#12

California Water Impact Network v. Castaic Lake Water Agency
BS 098724

Tentative decision on motion for legal determination: denied

Respondent Castaic Lake Water Agency and Kern County moves for a legal determination that it is the proper lead agency for preparation of an Environmental Impact Report for the water transfer at issue in this action under CEQA. The court has read and considered the moving, opposition and reply papers, and renders the following tentative decision.

A. Statement of the Case

Petitioners California Water Impact Network ("CWIN") commenced its petition for writ of mandate in Ventura County Superior Court on January 24, 2005.

CWIN's petition alleges that on December 23, 2004, the Castaic Lake Water Agency ("Castaic"), a public water agency and water wholesaler that treats and delivers water to water reailers in Los Angeles and Ventura Counties, approved the permanent transfer of 41,000 acre feet per year from Real Party in Interest Kern County Water Agency ("Kern") and its member unit in Kern County, Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), to Castaic (the "Kern water transfer"). Castaic also purported to certify the Environmental Impact Report ("EIR") for the project (the "2004 EIR"). Petitioner claims the Kern water transfer "threatens to promote large-scale urban sprawl in Ventura and Los Angeles Counties, while diverting water from important environmental and agricultural uses in Kern County forever." Petitioner alleges that the 2004 EIR is premature, and fails to comply with CEQA.

The petition alleges a cause of action for violation of CEQA in that Real Party in Interest California Department of Water Resources ("DWR"), not Castaic, should have been the lead agency for the 2004 EIR, which does not adequately describe the background on which the project is based, fails to disclose a reliance on an invalid Urban Water Management Plan, fails to adequately describe alternatives to the project, including a no project alternative, fails to discuss growth inducement, and inaccurately states the availability of water availability.[1]

On January 24, 2005, Planning and Conservation League ("PCL") filed its petition for writ of mandate against Castaic in Ventura County Superior Court. The PCL petition alleges a violation by Castaic in recording a notice of determination on December 23, 2004, certifying the 2004 EIR and rendering its approval of the Kern water transfer. The petition purports to allege five "causes of action" for violation of CEQA based on Castaic stealing DWR's duty to be the lead agency for the EIR, certification of a defective EIR, approval of inadequate findings, erroneous presentation of the project as already complete, and "prejudicial abuse of discretion."

On June 22, 2005, upon motion by Castaic, the Ventura County Superior Court (the Honorable Frederick H. Bysshe, Jr.) ordered the transfer of both petitions, which had been consolidated, to Los Angeles. On March 27, 2006, the case was reassigned to this court.

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[1]On CWIN's oral motion, the petition's second and third causes of action have been dismissed. As a result, the petition solely concerns Castaic's compliance with CEQA in the 2004 EIR.

Kern to the petitions. The court ruled that the petitions were timely filed and were not barred under the doctrine of *res judicata*. However, principles of *collateral estoppel* barred Petitioners from re-raising issues resolved by the Second District with respect to the 1999 EIR. This conclusion did not make demurrer appropriate, and the demurrers were overruled.

B. Applicable Law

The court has inherent authority as well as statutory authority (CCP §187), to order any suitable process or mode of proceeding in handling an action before it. After discussion with the court, Castaic takes advantage of this authority in making a motion for legal determination.

C. Judicial Notice

Castaic asks the court to judicially notice: (1) the opening, reply, and supplemental reply briefs of Petitioner Friends of the Santa Clara River ("Friends") in Friends of the Santa Clara River v. Castiac Lake Water Agency, (2002) 95 Cal.App.4th 1373 (Superior Court nu. BS056954 ("Friends"), (2) Castaic's brief on remand in Friends dated September 12, 2002 requesting the trial court to permit the water transfer to remain intact pending completion of a new EIR, (3) Castaic's brief in Friends dated May 17, 2000 in opposition to the petition for writ of mandate, and (4) Friends brief in Friends filed August 23, 2002 in support of judgment and peremptory writ on remand.

All of these court records are subject to judicial notice. Ev. Code §452(d).

D. Statement of Facts

In 1951, the Legislature authorized construction of a state water storage and delivery system. Planning & Conservation League v. Department of Water Resources, (2000) 83 Cal.App.4th 892, 898. The Legislature subsequently authorized the State Water Project ("SWP"), a complex system of reservoirs, dams, power plants, pumping plants, canals and aqueducts to deliver 4.23 million acre-feet of water annually. DWR is a major developer of water resources in California. It builds and operates the facilities and manages the SWP.

In 1961, DWR entered into individual contracts with various agricultural and urban water suppliers in the State, referred to as State Water Contractors. The contracts entitled the contractors to receive an annual amount of water in exchange for a proportionate share of financing and maintaining the SWP facilities. There are 29 agencies or districts that currently are State Water Contractors, including Castaic, which is a special act district in North Los Angeles County, created by uncodified Castaic Lake Water Agency Law, and formed to provide a supplemental supply of water to the water purveyors of the Santa Clarita Valley.

In 1994, an agreement was reached between the State Water Contractors and and DWR (the "Monterey Agreement") in which the allocation was changed between agricultural and urban contractors of entitlements to SWP water. The principles of the Monterey Agreement were implemented through a separate amendment to each State Water Contractor's contract with DWR (the "Monterey Amendment"). The Monterey Amendment was approved in 1995 and went into effect in 1996. A program EIR analyzing the environmental impacts of the Monterey Agreement was prepared and certified in 1995.

In late 1995, a lawsuit was filed in Sacramento Superior Court challenging the program EIR entitled Planning & Conservation League v. Department of Water Resources, ("PCL")

Pursuant to the Monterey Amendment, in March 1999, Castaic resolved to purchase from Kern and its member unit in Kern County, Wheeler Ridge, an entitlement to 41,000 acre-feet per year of water (the Kern water transfer). Castaic acted as lead agency and on March 29, 1999 certified an EIR for the transfer which tiered off the 1995 Monterey Amendment program EIR.

In April 1999, Castaic's EIR for the Kern water transfer was challenged in Friends of the Santa Clara River v. Cataic Lake Water Agency, BS056954 ("Friends"). On August 16, 2000, the trial court entered judgment, denying the petition in its entiretly.

Also in 2000, the Third Appellate District found the program EIR for the Monterey Agreement to be indequate in Planning & Conservation League v. Department of Water Resources, ("PCL") (2000) 83 CalApp.4th 892. The PCL appellate court directed the Sacramento Superior court to retain jurisdiction over the PCL action until a new EIR was prepared and certified.

Based on the Third District's PCL decision, on January 10, 2002, the Second Appellate District reversed the judgment in Friends and directed the trial court to issue a writ of mandate compelling Castaic to set aside certification of its EIR. The reversal was based on the fact that Castaic's EIR had been tiered upon the now inadequate Monterey Agreement EIR. The Second District, however, rejected all of the other challenges to Castaic's EIR, finding them to be without merit. The appellate court noted that Castaic may be able to cure the defect by waiting for DWR to comply with the Third District's directive in PCL by preparing a new program EIR. Castaic could issue a subsequent EIR, a supplement to EIR, or addendum to EIR, tiering upon the new Montery Agreement EIR.

The Friends appellate decision concluded as follows: "The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until Respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under [Pub. Resources Code] section 21168.9."

On October 25, 2002, after remand from the court of appeal, the Friends trial court issued a Peremptory Writ of Mandate and Judgment on Remand, retaining jurisdiction until Castaic certifies an EIR that complies with CEQA and is consistent with the views expressed by the Second District. The trial court considered and denied the petitioner's request to enjoin Castaic from using any of the 41,000 acre feet of additional water alloted to it by the Kern water transfer.[2]

On June 6, 2003, the Sacramento Superior Court approved a settlement in PCL in which DWR agreed to prepare a new EIR for implementation of the Monterey Agreement, including the Kern water transfer (the "Settlement Agreement"). The Settlement Agreement also provided that the Monterey Amendment would remain in operation until the EIR is prepared. The Settlement Agreement expressly acknowledged the Friends litigation in Los Angeles Superior Court concerning Castaic's 1999 EIR for the Kern water transfer, with the parties agreeing that "jurisdiction with respect to [Friends] should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in

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[2]This decision was upheld by the court of appeal on December 1, 2003, in case no. B164027 ("Friends II"). PCL filed an *amicus* brief supporting the petitioner in Friends II.

that pending litigation." PCL Settlement Agreement at 12.

On December 30, 2004, Castaic filed its return to the peremptory writ of mandate in Friends. The return stated that Castaic had certified a new EIR (the 2004 EIR) on December 22, 2004 and approved the Kern water transfer.

CWIN and PCL did not intervene in Friends. Instead, on January 24, 2005, CWIN and PCL filed separate petitions for writ of mandate in Ventura County concerning Castaic's compliance with CEQA in the 2004 EIR, and other issues.

On February 1, 2005, Petitioner in Friends filed a dismissal with prejudice. On February 7, 2005, the trial court in Friends held a hearing on Castaic's *ex parte* application to vacate Petitioner's dismissal with prejudice and seeking an order discharging the writ of mandate. Castaic argued that, by dismissing, Petitioner was attempting to get the clerk, through ministerial act, to divest the court of its continuing jurisdiction over the 2004 EIR prepared in response to the court's peremptory writ of mandate. Instead, Petitioner was passing the baton to CWIN and PCL, which initially filed the instant action in Ventura County, for a challenge to the 2004 EIR.

Castaic argued that the petitioner's dismissal violated the one judgment rule in that there had already been a judgment in the proceeding. Moreover, once Castaic filed its return, the trial court was required to "determine whether there had been adequate compliance with the previously issued writ." (Citation omitted.) Any order of discharge without a determination that the 2004 EIR complies with CEQA would be a material variance from the directions of the appellate court. Since any challenge to the 2004 EIR had to be made in the Friends action, and since Petitioner had failed to challenge it, Castaic was entitled to have the dismissal vacated and an order discharging the previously issued writ of mandate.

The trial court declined to set aside the dismissal, stating that whether the Ventura proceedings were a continuation of the Friends lawsuit was an issue of fact for the Ventura (now this) court.

On March 5, 2005, Cataic petitioned the Second Appellate District for a writ of mandate with respect to the trial court's refusal to vacate the dismissal, arguing that the trial court violated Pub. Resources Code section 21168.9 (stating that the trial court shall maintain jurisdiction over the agency's proceedings until the court has determined that the agency has complied with CEQA) because it had not yet determined that the 2004 EIR complied with CEQA Yet, under CEQA, a trial court that orders preparation of a new EIR must retain jurisdiction for a final determination of the EIR's validity.

On April 14, 2005, the Second Appellate District denied Castaic's petition for "failure to demonstrate that the 'retain jurisdiction' provision of Public Resources Code section 21168.9, subdivision (b), abrogates the entitlement to voluntary dismissal conferred by Code of Civil Procedure section 581, subdivision (b)(1)."[3]

C. Analysis

Castaic argues that Petitioners are barred by the doctrine of *collateral estoppel* from

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[3]The Second District later dismissed Castaic's appeal from the Friends dismissal, finding that the voluntary dismissal was not appealable. *See* H.D. Arnaiz, Ltd. v. County of San Joaquin, (2002) 96 Cal.App.4th 1357, 1364-67.

claiming that Castaic is not the proper lead agency for an EIR for the Kern water transfer.

"*Res judicata*, or claim preclusion, prevents relitigation of the same cause of action in a second suit between the same parties or parties in privity with them." Teitelbaum Furs, Inc. v. Dominion Ins. Co., Ltd., (1962) 58 Cal. 2d 601, 604.(Italics added). "*Collateral estoppel*, or issue preclusion, 'precludes relitigation of issues argued and decided in prior proceedings.'" Mycogen Corp. v. Monsanto Co., (2002) 28 Cal.4th 888, 896. (Italics added). (Italics added) (quoting Lucido v. Superior Court, (1990) 51 Cal.3d 335, 341). *Collateral estoppel* is intended to preserve the integrity of the judicial system, promote judicial economy, and protect litigants from harassment by vexatious litigation. Lucido, 51 Cal.3d at 335, 343. *Collateral estoppel* applies to bar re-litigation of an issue if (1) the issue is identical to an issue litigated in the first action; (2) the issue was actually litigated and necessarily decided in the first action; (3) the party in the second action was a party or one in privity to a party in the first action; and (4) the decision in the first action was on the merits. McCutchen v. City of Montclair, (1999) 73 Cal. App. 4th 1138, 1145.

In its June 27, 2006 ruling on the demurrers, the court held that CWIN and PCL are bound by the Second District's decision that the 1999 EIR was acceptable but for its tiering upon the Monterey Agreement program EIR. *See* Federation of Hillside & Canyon Assns. v. City of Los Angeles, (2005) 126 Cal.App.4th 1180, 1204. However, Petitioners are not bound by the Friends petitioner's actions on Castaic's return, including Friends' failure to attack the 2004 EIR, because they were not in privity with the Friends petitioner at that stage of the Friends litigation.

The issue on this motion is the extent to which Petitioners are *collaterally estopped* with respect to the 1999 EIR. The Friends petitioner made no argument that Castaic was the wrong lead agency for the 1999 EIR, and actually argued for remedies of a new EIR with Castaic as lead agency. The Second District in Friends, relying on the Third District opinion in PCL, expressly acknowledged that it had an obligation under Public Resources Code section 21005(c) to address all deficiencies in the 1999 EIR unless it found that the EIR was prepared by an improper lead agency. 95 Cal.App.4th at 1387.

Petitioners CWIN and PCL here contend that they are not foreclosed from arguing that Castaic cannot act as lead agency. They point out that they are challenging Castaic's 2004 EIR, not the 1999 EIR. They contend that the issue is whether Castaic wrongly usurped DWR's lead agency duties in preparing the 2004 EIR at a time when it knew, pursuant to the PCL decision and the subsequent court-approved settlement of that case, that DWR was the lead agency for preparing a new EIR for implementation of the Monterey Agreement, which includes analysis of the Kern water transfer as part of the "overall larger scheme" of the Monterey EIR According to Petitioners, this issue could not have been litigated in Friends, and is not foreclosed by *collateral estopppel* principles.

CWIN and PCL expound on their position as follows. DWR is required to be the lead agency for the Monterey EIR, which will examine all water transfers on a program level. After the Monterey EIR is prepared, Castaic may act as lead agency for an EIR that tiers off the Monterey EIR. Any other procedure would be "inconsistent" with PCL's clear direction that DWR is the appropriate lead agency for a program-level environmental review of the water transfers in the Monterey Agreement, rendering the PCL court's directive that DWR assume the lead agency role a nullity. While the Friends decision did not preclude Castaic from serving as lead agency for a project level EIR for the Kern water transfer, this does not mean that Castaic

may serve as the lead agency for "first-level" environmental review of the water transfer.

The Friends court reversed the trial court's approval of the 1999 EIR solely because the 1999 EIR tiered upon the Monterey Agreement program EIR (an EIR which the PCL court found to be deficient in part because it was prepared by the Central Coast Water Agency, a State Water Contractor, not DWR). The Friends decision acknowledged that it was required to address all deficiencies in the EIR unless it made a finding of improper lead agency. Castaic's status as the improper lead agency for the 1999 EIR is a deficiency which the appellate court was obligated to address if it existed under Pub. Resources Code section 21005(c). The Friends court concluded that the only deficiency in the 1999 EIR was tiering off the defective Monterey Agreement program EIR, necessarily implying that Castaic was the proper lead agency for the 1999 EIR.

Thus, it is fair to conclude that the Friends court decided as a preliminary matter that Castaic was the proper agency for the 1999 EIR. Although the issue of lead agency was not expressly addressed, it was "necessarily decided" as a preliminary issue. In this regard, *collateral estoppel* will apply "even though some factual matter or legal arguments which could have been presented were not." Bleeck v. State Board of Optometry, (1971) 18 Cal.App.3d 415, 429.

However, in order for *collateral estoppel* to apply, the issue of lead agency must also have been "actually litigated." McCutchen v. City of Montclair, 73 Cal. App. 4th at 1145. It is hard to see how the issue could have been actually litigated since the Friends petitioner did not raise it. Castaic might argue that the answer lies in CEQA's scheme. Piecemeal attacks on an EIR are not permitted; the strictly enforced statutes of limitations under CEQA mean as a practical matter that any defect not raised in the petition is foreclosed. *See* Lee v. Lost Hills Water Dist., (1978) 78 Cal.App.3d 630, 634. Thus, the Friends petitioner's failure to contend that Castaic was an improper lead agency arguably means that the issue was "actually litigated" in Castaic's favor, even though not argued by the petitioner.

The court will assume *arguendo* that the issue of Castaic as the proper agency for the 1999 EIR was both "actually litigated and and necessarily decided," and that *collateral estoppel* will apply to prevent Petitioners CWIN and PCL from contending that Castaic is the improper lead agency for the 1999 EIR.

Of course, CWIN and PCL argue that they are not attacking the 1999 EIR, they are attacking the 2004 EIR. The question becomes whether estoppel from contending that Castaic cannot be the lead agency for the 1999 EIR affects Petitioners' position that Castaic is the improper lead agency for the 2004 EIR.

The 1999 EIR purported to tier off of the Monterey Agreement program EIR, and the answer depends on the definition of lead agency, the nature of program EIRs, and tiering under CEQA.

The lead agency under CEQA is the agency that carries out a project or has primary authority for approving a project. Guideline §15051; *see* PCL, 83 Cal.App.4th at 904 (DWR, not Central Coast Water Authority (a State Water Contractor), had principal responsibility for carrying out the Monterey Agreement and should have been lead agency for program EIR). Where two or more agencies meet the criteria to act as a CEQA lead agency, the agency that acts first on the project is the lead agency. Guideline §15051(c).

The purpose of a program EIR is is to document a series of actions so related that they can be characterized as one project. Friends, 95 Cal.App.4th at 1377. If the program EIR is

sufficiently comprehensive, the lead agency may dispense with further environmental review for later activities within the program that are adequately covered in the program EIR. Guidelines §15618(c).

Thus, the program EIR may be used to focuse or simplify later environmental review, or as the basis of a tiered EIR. "Tiering" means the coverage of genearal matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance, followed by narrower or site-specific EIRs which incorporate by reference the discussion in the prior report. *See* Pub. Resources Code §§ 21068.5, 21093 and Guideline §§ 15152, 15385. Tiering is favored "whenever feasible, as determined by the lead agency." Publ Resources Code §21093(b). It is required where a prior EIR has been prepared and certified for a program, plan, or ordinance. Pub. Resources Code §21094(a).

As of this motion, the Monterey Agreement program EIR has been decertified and there is no program EIR (though one is apparently being prepared). There is nothing for Castaic to tier from at this time. Whether Castaic can act as lead agency for the 2004 EIR depends on whether the "project" for that EIR is properly defined as the Kern water transfer. It may be that the Monterey Agreement is a series of actions (including the Kern water transfer) so related that they should be characterized a single project. If so, then DWR may be required to be the lead agency for the 2004 EIR. On the other hand, the Kern water transfer may be the appropriate definition of "project" for the 2004 EIR. If so, then Castaic may serve as the lead agency.

This issue was not addressed in Friends, and Petitioners are not *collaterally estopped* from arguing it now. They are only foreclosed from contending that Castaic is the improper lead agency for any EIR on the Kern water project that is tiered off of a program EIR for the Monterey Agreement. The result sought by Castaic would mean that neither the Friends petitioner nor Petitioners would be able to contend that Castaic cannot be the lead agency on a Kern water transfer EIR that does not tier off a program EIR. Such a result does not accord with principles of *collateral estoppel* or with CEQA.[4]

D. Conclusion

The motion for legal determination is denied. Petitioners are not foreclosed either by *collateral estoppel* or their own admission from contending that Castaic is the improper lead agency on the 2004 EIR, which is an EIR for the Kern water transfer which does not tier from a Monterey Agreement program EIR.

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[4]Separate and apart from *collateral estoppel*, Petitioners are bound by a concession in their briefs that Castaic may act as lead agency *at some point* for the EIR on the Kern water transfer. But this concession is entirely consistent with the above argument that Castaic can act as lead agent on the Kern water transfer EIR tiered off a program EIR, but cannot do so for the Kern transfer without tiering off a program EIR.

California Water Impact Network v. Castaic Lake Water Agency
BS 098724

Statement of Decision on Petition for Writ of Mandate

FILED
LOS ANGELES SUPERIOR COURT
APR 0 2 2007
JOHN A. CLARKE, CLERK
A. Fajardo
BY A. FAJARDO, DEPUTY

Petitioners California Water Impact Network ("CWIN") and Planning and Conservation League ("PCL") petition for writ of mandate under California Environmental Quality Act ("CEQA"). The court has read and considered the moving papers, oppositions, and reply, heard oral argument, and renders the following decision.

A. Statement of the Case

Petitioner CWIN commenced its petition for writ of mandate in Ventura County Superior Court on January 24, 2005. The petition alleges that on December 23, 2004, the Castaic Lake Water Agency ("Castaic"), a public water agency and water wholesaler that treats and delivers water to water retailers in Los Angeles and Ventura Counties, approved the permanent transfer of 41,000 acre feet per year from Real Party in Interest Kern County Water Agency ("Kern") and its member unit in Kern County, Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), to Castaic (the "Kern water transfer," the "Kern transfer," or the "transfer"). Castaic also purported to certify the Environmental Impact Report ("EIR") for the project (the "2004 EIR" or the "EIR"). Petitioner claims the Kern water transfer "threatens to promote large-scale urban sprawl in Ventura and Los Angeles Counties, while diverting water from important environmental and agricultural uses in Kern County forever." Petitioner alleges that the 2004 EIR is premature, and fails to comply with CEQA.

The petition alleges a cause of action for violation of CEQA in that Real Party in Interest California Department of Water Resources ("DWR"), not Castaic, should have been the lead agency for the 2004 EIR, which does not adequately describe the background on which the project is based, fails to disclose a reliance on an invalid Urban Water Management Plan, fails to adequately describe alternatives to the project, including a "no project" alternative, fails to discuss growth inducement, and inaccurately states the availability of water availability.[1]

On January 24, 2005, PCL filed its own petition for writ of mandate against Castaic in Ventura County Superior Court. The PCL petition alleges a violation by Castaic in recording a Notice of Determination on December 23, 2004, certifying the 2004 EIR and rendering its approval of the Kern water transfer. The petition purports to allege five "causes of action" for violation of CEQA in the 2004 EIR based on Castaic stealing DWR's duty to be the lead agency for the EIR, certification of a defective EIR, approval of inadequate findings, erroneous presentation of the project as already complete, and "prejudicial abuse of discretion."

On June 22, 2005, upon motion by Castaic, the Ventura County Superior Court (the Honorable Frederick H. Bysshe, Jr.) ordered the transfer of both petitions, which had been consolidated, to Los Angeles. On March 27, 2006, the case was reassigned to this court.

On June 27, 2006, the court heard the demurrers of Castaic and Real Party in Interest Kern to the consolidated petitions. The court ruled that the petitions were timely filed and were

[1]On CWIN's oral motion, the petition's second and third causes of action have been dismissed. As a result, CWIN's petition solely concerns Castaic's compliance with CEQA in the 2004 EIR.

not barred under the doctrine of *res judicata*. The court noted that the Kern water transfer agreements are valid. While principles of *collateral estoppel* barred Petitioners from re-raising issues resolved by the Second District with respect to the 1999 EIR, this conclusion did not foreclose the petitions and the demurrers were overruled.

On July 16, 2006, the court denied Castaic's motion for a legal determination under principles of *collateral estoppel* and party admission that Castaic is the proper lead agency for preparation of the EIR for the Kern water transfer. However, Petitioners are bound by their concession that Castaic may act as the lead agency at some point for an EIR on the Kern water transfer.

B. Preliminary Issues

1. Standing and Timeliness

Petitioner PCL alleges that it is a non-profit corporation devoted to environmental protection. PCL Pet. at ¶6-7. Some of PCL's members live in the area affected by the Kern water transfer. PCL Pet. at ¶8. Petitioner CWIN alleges that it is a nonprofit public benefit corporation the purpose of which is to protect California's environment. CWIN contends that it is impacted by the Kern water transfer because its members reside in and use the Santa Clara River watershed, which is impaired by the water transfer. CWIN Pet. at ¶9. Thus, Petitioners contend that they are impacted by the project and have standing to raise the issues herein. Respondents do not contest Petitioners' standing. *See* Waste Management of Alameda County, Inc. v. County of Alameda, (2000) 79 Cal.App.4th 1223, 1233-34.

The actions are timely on CEQA issues, each having been filed on January 24, 2005, within 30 days of Castaic's Notice of Determination that the 2004 EIR had been certified, filed in various counties between December 23 and December 27, 2004. *See* Pub. Res. Code §21167(c).

2. The Administrative Record

Castaic has certified the administrative record. Pub. Res. Code §21167.6; LASC 9.24(e). The record was received in evidence at trial.

Castaic and Kern, and DWR separately ask the court to judicially notice various records. Judicial notice is the acceptance by a court without formal proof of the existence of a matter of law or fact that is relevant to an issue in the case. People v. Rowland, (1992) 4 Cal.4th 238, 268, n.6. Certain documents are subject to judicial notice. Ev. Code §451, 452. Even where subject to judicial notice, however, a document must be relevant. Id.

The California Supreme Court decision in Western States Petroleum Assn. v. Superior Court, ("Western States") (1995) 9 Cal.4th 559, 573, n.4, provides that extrinsic evidence is generally not admissible for a traditional mandamus challenging a quasi-legislative agency action. The exclusion of extrinsic evidence in a traditional mandamus action is essentially the exclusion of irrelevant evidence. Extrinsic evidence is generally not admissible for a traditional mandamus challenging a quasi-legislative agency action. Id. Such evidence may be admissible in a narrowly construed exception in which (1) the evidence in question existed before the agency made the decision, and (2) the evidence could not have been presented to the agency in the first instance in the exercise of reasonable diligence. Id. at 578. The purpose of limiting extra-record evidence is that the free use of such evidence would invade the deference to which the legislative

branch is entitled under the constitutional separation of powers. If the courts freely considered extra-record evidence in mandamus cases, the highly deferential substantial evidence standard would be turned into a *de novo* standard where the courts in effect would decide not whether an administrative decision was supported by the evidence before the agency but instead whether it was the wisest and best decision according to the courts. Id. at 572.

Castaic asks the court to judicially notice: (1) the unpublished appellate decision in Friends of the Santa Clara River v. Castaic Lake Water Agency, 2003 Cal.App. Unpub. LEXIS 11239, dated December 1, 2003 ("Friends II"), and (2) the unpublished appellate decision in California Water Network v. Castaic Lake Water Agency, 2006 Cal.App. Unpub. LEXIS 2452, dated March 23, 2003.[2] The existence of these court decisions is subject to judicial notice. Ev. Code §452(d).[3]

DWR asks the court to judicially notice (1) Amendment No. 19 to the Water Supply Contract between it and Castaic dated May 28, 2003, and (2) Notice of Preparation of EIR for the Monterey Amendment dated January 24, 2003. DWR contends that these documents are official acts of a California agency subject to judicial notice under Ev. Code section 452(c) and (d). The Notice of Preparation is an official act of DWR and is judicially noticed. However, Amendment No. 19 is not. Official acts should be limited to regulations, public announcements, and other actions the existence of which is beyond dispute. A well informed person has no way of knowing whether Amendment No. 19 is authentic and valid. Nor is it a court record under section 452(d). DWR's request for judicial notice of Amendment No. 19 is denied.

C. Statement of Facts

1. SWP

In 1951, the Legislature authorized construction of a state water storage and delivery system. Planning & Conservation League v. Department of Water Resources, (2000) 83 Cal.App.4th 892, 898. The Legislature subsequently authorized the State Water Project ("SWP"), a complex system of 28 reservoirs and dams, 26 power and pumping plants, and 600 miles of canals and aqueducts to deliver 4.23 million acre-feet of water annually to Central and Southern California. The primary source for the SWP is the drainage of the Feather River, a tributary of the Sacramento River in Northern California (hereinafter, the "Delta").

DWR is the state agency charged with the statutory responsibility to build, manage, and operate the SWP. Essentially, DWR is the wholesale provider of water to middlemen agencies. In 1961, DWR entered into individual contracts with various agricultural and urban water suppliers in the State, referred to as State Water Contractors. *See* Water Code §12937. There are 29 agencies or districts that currently are State Water Contractors.

The SWP water contracts entitled the contractors to receive an annual amount of SWP

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[2]Castaic also supplied the court with copies of its decisions on demurrer and motion for legal determination in this case, which need not be judicially noticed.

[3]Real Party Wheeler purports to join in Castaic's request for judicial notice. In its ruling on the demurrers, the court informed Wheeler of the futility of a joinder as merely a cheerleading effort. No further discussion of the purported joinder is necessary.

water in exchange for a proportionate share of financing and maintaining the SWP facilities. Each water contract contains provisions for both allocation of the amount of water available each year and costs among the contractors. Each contract identifies a Table A amount, the annual maximum amount of water which DWR agrees to deliver, if available for delivery, to each SWP contractor on an annual basis. Delivery of the Table A amount is not assured, but rather provides the basis for proportional allocation of available water among contractors. The Table A amount is specified as either agricultural or urban (M&I). Each contract also includes Article 40, which permits water transfers between contractors, and Article 41, which requires DWR approval of any transfer subject to reasonable terms and conditions. AR 2356.

Each contractor annually submits a request to DWR for water delivery in the following year, up to the amount in Table A. In a year when DWR is unable to deliver the total of contractor requests, deliveries to all contractors will be reduced. The current Table A totals are 4.17 million acre-feet per year.[4] In fact, given existing facilities and contractor demands, the SWP can only deliver an average of 2.96 million acre-feet per year.

2. The Monterey Agreement

Historically, the delivery of less than Table A totals was not a significant problem because contractor demand was less than the Table A amounts. However, in the late 1980's and early 1990's, a drought led to SWP deliveries in amounts below that requested by contractors. Articles 18(a) and (b) of the SWP water contracts addressed DWR's temporary and permanent inability to deliver the water allocations listed in Table A of the contracts by requiring agricultural contractors to accept a reduction in water first before any remaining reduction was shared by urban contractors. In 1990, agricultural contractors received only half their requested water and none in 1991. Because contractors pay their proportionate share of fixed costs regardless of how much water is delivered, the agricultural contractors were paying for water they were not receiving and they were displeased. As a result, urban and agricultural water contractors clashed over DWR's delivery obligations and the proper interpretation of Article 18. AR 45-46.

In December 1994, five State Water Contractors and and DWR reached agreement on a broad set of fourteen principles (the "Monterey Agreement"). Among other things, the Monterey Agreement changed the allocation between agricultural and urban contractors of entitlements to SWP water. The Monterey Agreement eliminated Article 18 and specified that all SWP water was to be allocated in proportion to Table A amounts. Paragraph 24 of the Monterey Agreement provides for the permanent transfer of 130,000 acre-feet from certain willing agricultural contractors, including KWCA, to urban contractors, as implemented by individual agreement. AR 2515. It also provides that individual contractors may transfer entitlements among themselves beyond the 130,000 acre feet proposed, with DWR expeditiously executing any necessary documents and approving all such contracts. Other provisions of the Monterey Agreement include a revision of water allocations during shortages, eliminating the "agriculture first" provision, and retirement of 45,000 other acre-feet of entitlement by agricultural contractors.

[4]An "acre-foot" is the amount of water that would cover one acre one foot deep.

The Monterey Agreement provides that individual SWP contracts could be amended to conform to it. Over the next two years, 27 of the 29 Water Contractors amended their SWP contracts to implement the principles of the Monterey Agreement (collectively, the "Monterey Amendments").

In 1995, a State Water Contractor, Central Coast Water Authority ("Central"), acted as lead agency and certified a program EIR analyzing the environmental impacts of the Monterey Agreement. This program EIR also addressed Paragraph 24 (Article 53 in the Monterey Amendments) water transfers, including the Kern water transfer. In late 1995, PCL filed a lawsuit in Sacramento Superior Court challenging the program EIR, Planning & Conservation League v. Department of Water Resources, ("PCL").

3. The Kern Water Transfer Agreement

Castaic is a State Water Contractor created by the California Legislature. Its mandate is to purchase and deliver sufficient supplies of water to serve the needs of the Santa Clarita Valley. *See* Swanson v. Marin Municipal Water District, (1976) 56 Cal.App.3d 512, 524 (water district has obligation to augment available water to meet increasing demands). Castaic diverts its SWP water from the West Branch of the California Aqueduct. Castaic is one of the Water Contractors entering into the Monterey Amendments (Amendment 17 to Castaic's SWP contract).

Kern County Water Agency ("KCWA") is a special district formed by the Legislature in 1961. Wheeler Ridge is a special district formed in 1959 to provide supplemental water to agricultural lands in Kern County and is located immediately north and east of Castaic. KCWA has contracts with Wheeler Ridge and other member agencies, for KCWA's SWP water.[5]

In March 1999, Castaic entered into an agreement to purchase from Wheeler Ridge, subject to KCWA's consent, 41,000 acre-feet per year of SWP water (the Kern water transfer). The price for the transfer was $47 million in debt instruments purchased by private investors. The purpose of the transfer is to permit Castaic to serve the water demands of existing users, as well as meet a portion of future water demand from anticipated growth within the Castaic service area. AR 16. The Kern water transfer is the largest transfer under Article 53 of the Monterey Amendments, and it counts towards the 130,000 acre-feet limit. In their transfer agreement, both sides warranted that there was no pending or threatened litigation other than PCL that could affect the 41,000 acre feet SWP entitlement. AR 2562-63.[6]

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[5]In 1998, another KCWA member, Belridge Water Storage District, certified an EIR on the environmental effects of transferring 130,000 acre-feet of SWP water to unidentified purchasers. This EIR was not challenged.

[6]Castaic has been planning since 1987 to increase the supply of water to Santa Clarita Valley. At that time, Los Angeles County General Plan forecast substantial population growth in the Santa Clarita Valley. In 1988, Castaic adopted a Capital Program and Water Plan (the "Capital Program") to address the purchases, construction, and improvements necessary to meet the anticipated water demand. The Capital Program called for the purchase of SWP water from districts willing to sell, including Wheeler Ridge, and the storage of water for later use during drought conditions at Semitropic Groundwater Storage District's ("Semitropic") basins. AR

DWR's approval of the Kern water transfer was required under Articles, 15, 41, and 56 of the SWP contracts. On March 31, 1999, DWR approved the transfer by entering into Amendment 18 of Castaic's SWP contract. Amendment 18 adds Article 53(j), which provides that "in accordance with Article 53(a)" of the Monterey Amendments, Castaic's Table A annual entitlements were increased by 41,000 acre-feet. AR 2545-47. DWR and KCWA, which consented to the transfer of its water, also entered into Amendment 28 to KCWA's SWP contract, an amendment which reduced KCWA's entitlement by 41,000 acre-feet. Based on these amendments, DWR has allocated SWP water to Castaic since 1999 based on a total Table A amount of 95,000 acre-feet -- Castaic's original Table A 54,000 acre-feet plus the 41,000 acre-feet from the Kern water transfer.

On March 29, 1999, Castaic, acting as lead agency, certified an EIR for the Kern water transfer. This 1999 EIR tiered off the 1995 Monterey Amendment program EIR, the Belridge EIR, and Castaic's own 1988 EIR for the Capital Program. In April 1999, Castaic's EIR for the Kern water transfer was challenged in Friends of the Santa Clara River v. Cataic Lake Water Agency, BS056954 ("Friends"). On August 16, 2000, the trial court entered judgment, denying the petition in its entirety.

4. The PCL and Friends Decisions

In September 2000, the Third Appellate District in PCL found that DWR was the only entity with the "statewide perspective and expertise" to serve as lead agency for the Monterey Agreement program EIR. Because "the allocation of water to one part of the state has potential implications for distribution throughout the system," the court recognized DWR's principal responsibility to "facilitate the water transfers allowed under the Monterey Agreement." 83 Cal.App.4th at 907. The use of Central as lead agency for the Monterey Agreement program EIR was inappropriate. Id. at 907.

This lead agency error was not harmless because the EIR also was defective. Perhaps as a consequence of Central's lack of statewide expertise, the EIR failed to properly discuss a "no project" alternative, including the environmental impact of implementing the pre-Monterey Agreement Article 18(b)'s permanent water shortage provision. Id. at 918. This was particularly important because local land use planners rely on the "paper water" entitlements in Table A

41845.

Pursuant to the Capital Program, Castaic permanently acquired 12,700 acre-feet of SWP Table A water in 1991 from Devil's Den Water District, a SWP contractor immediately north of Castaic. This transfer was subject to DWR approval, which per Article 41 of the SWP contracts could not be unreasonably withheld. DWR approved the transfer, noting that the transferred water remained labeled for "agricultural purposes" for purposes of delivery shortages.

Also pursuant to the Capital Program, in 2002 Castaic entered into a groundwater storage or "banking" agreement with Semitropic. This action was challenged under CEQA on the basis that the Monterey Agreement required DWR to conduct an environmental review. The challenge was rejected by the appellate court, which held that DWR had no jurisdiction over Castaic's management of water; DWR merely schedules SWP water delivery to Castaic. Cal. Water Network v. Castaic Lake Water Agency, (2006) 206 Cal.App. Unpub. LEXIS 2452, 9.

rather than real, deliverable water. The question was what impacts were reasonably foreseeable from eliminating Article 18(b)'s solution to permanent water shortage? Id. at 914-15. The PCL court held that the EIR, which lacked simulation models and projections relating to land use planning and demand for water, did not adequately address this issue. Id. at 919. It directed the Sacramento Superior Court to retain jurisdiction over the action until a new EIR was prepared and certified.

Based on the Third District's PCL decision, on January 10, 2002, the Second Appellate District reversed the judgment in Friends and directed the trial court to issue a writ of mandate compelling Castaic to set aside certification of its EIR. Friends, (2002) 95 Cal.App.4th 1373. The reversal was based solely on the fact that Castaic's EIR had been tiered upon the now inadequate Monterey Agreement program EIR. The Second District rejected all of the other challenges to Castaic's EIR, finding them to be without merit. The appellate court noted that Castaic may be able to cure the defect by waiting for DWR to comply with the Third District's directive in PCL by preparing a new program EIR. Castaic could issue a subsequent EIR, a supplement to EIR, or addendum to EIR, tiering upon the new Monterey Agreement EIR.

The Friends appellate decision concluded as follows: "The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until Respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under [Pub. Resources Code] section 21168.9."

On October 25, 2002, after remand from the court of appeal, the Friends trial court issued a Peremptory Writ of Mandate and Judgment on Remand, retaining jurisdiction until Castaic certifies an EIR that complies with CEQA and is consistent with the views expressed by the Second District. The trial court did not direct Castaic to set aside its approval of the Kern water transfer and denied the petitioner's request to enjoin Castaic from using any of the 41,000 acre feet of additional water allotted to it by the Kern water transfer. The trial court did state that the injunction request could be renewed upon a showing that the water was actually used for an improper purpose (irreversible new development).

5. Monterey Plus

On June 6, 2003, the Sacramento Superior Court approved a settlement between the parties in PCL. That settlement, known as "Monterey Plus," provides that the Monterey Agreement can proceed on an interim basis. In exchange, DWR agreed, among other things,[7] to prepare a new program EIR for implementation of the Monterey Agreement. This new EIR would include (1) information on water deliveries during the drought and recent historical period, (2) an analysis of a no project alternative, including the environmental impact of Article 18's water shortage provisions, (3) analysis of environmental impacts from changes in SWP operations and deliveries resulting from implementation of the Monterey Agreement, (4) analysis

[7]Some of the other provisions include biennial reports on project reliability, land use restrictions on the Kern Water Bank, new guidelines for permanent water transfers, new procedures for public involvement in contract changes, and funding for watershed restoration and new technical studies. AR 45048-49.

of environmental impacts of seven already completed water transfers from KWCA and member units totaling 70,000 acre-feet (Attachment E), which the parties recognized were "final," and of the Kern water transfer, which the parties acknowledged was being challenged in the pending Friends litigation in Los Angeles Superior Court, and (5) analysis of the environmental impacts from implementation of Monterey Plus. AR 48557-59. With respect to the Kern water transfer, the Monterey Plus parties agreed that "jurisdiction with respect to [Friends] should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." The Monterey Plus did not require DWR to re-approve or disapprove any transfer.

6. The Friends II Decision

The Second District upheld the Friends trial court's decision not to grant injunctive relief for the Kern water transfer on December 1, 2003, in unpublished case no. B164027 ("Friends II"). PCL had filed an *amicus* brief supporting the petitioner in Friends II, pointing out that the Monterey Plus settlement now existed and arguing that the Friends decision required the trial court to rely on the status of PCL litigation, including the new Monterey Agreement program EIR DWR was to prepare, in deciding injunctive relief. The Friends II appellate court stated that PCL was wrong; it merely had suggested, not required, that the trial court could determine and rely on the status of the PCL case in deciding injunctive relief.

7. The 2004 EIR

After Friends, Castaic decided to prepare a revised EIR prior to DWR's preparation of a Monterey Amendment EIR. Castaic was driven by a concern that the Friends petitioner and others would use the decertification of its 1999 EIR to cloud its right to the transferred water, as well as Castaic's duty to its customers to complete the environmental documentation and finalize the Kern water transfer.

In June 2004, Castaic prepared and circulated a draft EIR that tiered only on Castaic's 1988 Capital Program EIR. Castaic concluded that it was the lead agency because it has the principal responsiblility for carrying out and implementing the project. Because the transfer is between neighboring SWP contractors, involving the withdrawal of water from a single branch of the Aqueduct, Castaic concluded that the transfer has no significant impacts on SWP operations or the water diverted from the Delta. *See* AR 13-14.

PCL served comments to the draft EIR on August 16, 2004. These comments criticized the use of Castaic as lead agency, arguing that Castaic's review was "premature" and "likely to operate at cross-purposes with DWR's statewide review." AR 1959. PCL contended that DWR, not Castaic, was required to be the lead agency under the PCL decision. Only DWR's expertise could analyze the changes in the amount of supplies available, the location and timing of deliveries, and changes in the SWP's conveyance and storage facilities for all of the proposed transfers, including the Kern water transfer. AR 1962. CWIN also timely expressed concern about Castaic's lack of authority to act as lead agency, and the potential for conflict with DWR's role. AR 578-580.

DWR, acting as a responsible agency under CEQA, commented on the draft EIR. It stated that the "document adequately and thoroughly discusses the proposed project and its

impacts. The [draft]EIR discusses the effects of the project on the environment and State Water Project (SW) and uses baseline conditions consistent with those being considered for inclusion in [DWR's EIR]. The draft also "adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations." DWR acknowledged that Castaic's EIR uses a model, DWRSIM, to assess the potential impact associated with the Kern transfer and that DWR's EIR will use a newer model, CALSIM II. DWR indicated that the use of a different computer model may cause slight changes in results, which may lead DWR to different conclusions than those made by Castaic in its EIR. Despite this fact, DWR concluded that the draft EIR adequately discusses the reliability of SWP, pre- and post- Monterey Amendments conditions, future conditions, and SWP operations. AR 564-65.

Castaic rejected Petitioners' concerns, and relied on DWR's comments to refute objections that its draft EIR will be inconsistent with the yet to be prepared DWR program EIR. AR 961-4. Castaic adopted findings, a mitigation monitoring program and statement of overriding considerations and certified a final EIR (the 2004 EIR).[8] The 2004 EIR describes Castaic's water program for the future needs of Santa Clarita Valley, the procedural history of the project (including the 1999 EIR), and the fact that the Kern water transfer has been implemented and ongoing since 1999. It uses two separate baselines for the project setting and evaluates environmental impacts of the Kern water transfer on the SWP, Castaic, and Wheeler Ridge. In discussing these impacts, the 2004 EIR considers three SWP scenarios: (a) with the Monterey Agreement, (b) without the Monterey Agreement, and (c) without the Monterey Agreement and with Article 18(b) permanent shortages. The EIR uses the DWRSIM model and concludes no significant direct environmental impacts will occur as a result of the project. There would, however, be indirect growth impacts as a result of water provided by the project.

8. The Petitioners Take Over from the Friends Petitioner

On January 24, 2005, CWIN and PCL filed separate petitions for writ of mandate in Ventura County concerning Castaic's compliance with CEQA in the 2004 EIR, and other issues.

On February 1, 2005, the Friends petitioner dismissed the action with prejudice. On February 7, 2005, the trial court in Friends held a hearing on Castaic's *ex parte* application to vacate the dismissal with prejudice and to discharge the writ of mandate. Castaic argued that, by dismissing, the petitioner was attempting to get the clerk, through ministerial act, to divest the court of its continuing jurisdiction over the 2004 EIR prepared in response to the court's peremptory writ of mandate. Instead, the Friends petitioner was passing the baton to CWIN and PCL for a challenge to the 2004 EIR. The trial court declined to set aside the dismissal, stating that whether the Ventura proceedings were a continuation of the Friends lawsuit was an issue of fact for the Ventura (now this) court.

On March 5, 2005, Castaic petitioned the Second Appellate District for a writ of mandate with respect to the trial court's refusal to vacate the dismissal, arguing that the trial court violated Pub. Resources Code section 21168.9 (stating that the trial court shall maintain jurisdiction over the agency's proceedings until the court has determined that the agency has complied with

[8]On December 30, 2004, Castaic filed its return to the peremptory writ of mandate in Friends.

CEQA) because it had not yet determined that the 2004 EIR complied with CEQA Yet, under CEQA, a trial court that orders preparation of a new EIR must retain jurisdiction for a final determination of the EIR's validity.

On April 14, 2005, the Second Appellate District denied Castaic's petition for "failure to demonstrate that the 'retain jurisdiction' provision of Public Resources Code section 21168.9, subdivision (b), abrogates the entitlement to voluntary dismissal conferred by Code of Civil Procedure section 581, subdivision (b)(1)."[9]

D. CEQA

1. Standard of Review

A party may seek to set aside an agency decision for failure to comply with CEQA by petitioning for either a writ of administrative mandamus (CCP §1094.5) or of traditional mandamus. CCP §1085. A petition for administrative mandamus is appropriate when the party seeks review of a "determination, finding, or decision of a public agency, made as a result of a proceeding in which by law a hearing is required to be given, evidence is required to be taken and discretion in the determination of facts is vested in a public agency, on the grounds of noncompliance with [CEQA]." Pub. Res. Code §21168. This is generally referred to as an "adjudicatory" or "quasi-judicial" decision. Western States Petroleum Assn. v. Superior Court, ("Western States") (1995) 9 Cal.4th 559, 566-67. A petition for traditional mandamus is appropriate in all other actions "to attack, review, set aside, void or annul a determination, finding, or decision of a public agency on the grounds of noncompliance with [CEQA]." Where an agency is exercising a quasi-legislative function, such as by adopting a rule or entering into a contract, it is properly viewed as a petition for traditional mandamus. Id. at 567; Pub. Res. Code §21168.5.

At issue here is a CEQA challenge to a quasi-legislative action recorded by Castaic in a December 23, 2004 Notice of Determination approving the project, certifying the 2004 EIR, and adopting findings, a mitigation monitoring program, and a statement of overriding considerations. This procedural setting, where no administrative hearing was held or required, is governed by traditional mandamus. In determining whether to grant a petition for traditional mandamus in a CEQA case, the court may consider only whether there was a prejudicial abuse of discretion. Public entities abuse their discretion under CEQA if the agency has not proceeded in a manner required by law or if its determination or decision is not supported by substantial evidence. Western States, 9 Cal.4th at 568; Pub. Res. Code §21168.5.[10]

This requires "scrutiny of the alleged defect" depending on whether the claim is predominately "improper procedure or dispute over the facts." Vineyard Area Citizens for

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[9]The Second District later dismissed Castaic's appeal from the Friends dismissal, finding that the voluntary dismissal was not appealable. *See* H.D. Arnaiz, Ltd. v. County of San Joaquin, (2002) 96 Cal.App.4th 1357, 1364-67.

[10]The standard of review for traditional mandamus in a non-CEQA case is governed by an "arbitrary and capricious" standard, not a "prejudicial abuse of discretion" standard. The CEQA standard is the more stringent inquiry. Western States, 9 Cal.4th at 574.

Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412, 435. Whether Castaic is the proper lead agency is an procedural issue of law for the court. PCL, 83 Cal.App.4th at 905-06. Similarly, as Petitioners argue (Pet. Supp. Resp. Br. at 5), whether Castaic's 2004 EIR failed to provide certain required information and, as a result, presents uncertainties about the finality of the Kern water transfer is failing "to proceed in a manner required by CEQA" and an issue of law. Vineyard, 40 Cal.4th at 435. These issues require "a critical consideration, in a factual context, of legal principles and their underlying values." Harustak v. Wilkins, (2000) 84 Cal.App.4th 208, 212.

On the other hand, whether Castaic abused its discretion in the 2004 EIR's findings must be answered with reference to the evidence in the administrative record. This standard requires deference to the agency's factual and environmental conclusions based on conflicting evidence, but not to issues of law. Laurel Heights Improvement Assn. v. Regents of University of California, ("Laurel Heights") (1988) 47 Cal.3d 376, 393, 409. Argument, speculation, and unsubstantiated opinion or narrative will not suffice.[11] Guidelines, 15384(a), (b). The findings must be supported by "substantial evidence," defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. CEQA Guidelines §15384(a). The question whether substantial evidence exists is a question of law. *See* California School Employees Association v. DMV, (1988) 203 Cal.App.3d 634, 644.

2. CEQA

The purpose of CEQA (Pub. Res. Code §21000 *et seq.*) is to maintain a quality environment for the people of California both now and in the future. Pub. Res. Code §21000(a). "[T]he overriding purpose of CEQA is to ensure that agencies regulating activities that may affect the quality of the environment give primary consideration to preventing environmental damage." Save Our Peninsula Committee v. Montery County Board of Supervisors, (2001) 87 Cal.App.4th 99, 117. CEQA must be interpreted "so as to afford the fullest, broadest protection to the environment within reasonable scope of the statutory language." Friends of Mammoth v. Board of Supervisors, (1972) 8 Cal.3d 247, 259. Public agencies must regulate both public and private projects so that "major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." Pub. Res. Code §21000(g).

The Legislature chose to accomplish its environmental goals through public environmental review processes designed to assist agencies in identifying and disclosing both environmental effects and feasible alternatives and mitigations. Pub. Res. Code §21002.

Under CEQA, a "project" is defined as any activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (1) undertaken directly by any public agency, (2) supported through contracts, grants, subsidies, loans or other public assistance, or (3) involving the issuance of a lease, permit,

[11]As an aid to carrying out the statute, the State Resources Agency has issued regulations called "Guidelines for the California Environmental Quality Act ("Guidelines"), contained in Code of Regulations, Title 14, Division 6, Chapter 3, beginning at section 15000.

license, certificate, or other entitlement for use by a public agency. Pub. Res. Code §21065. The word "may" in this context means a reasonable possibility. Citizen Action to Serve All Students v. Thornley, (1990) 222 Cal.App.3d 748, 753. "Environment" means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance. Guidelines, §21060.5.

The "project" is the whole of the action, not simply its constituent parts, which has the potential for resulting in either direct or reasonably foreseeable indirect physical change in the environment. Guidelines §15378. An indirect physical change must be considered if that change is a reasonably foreseeable impact which may be caused by the project. On the other hand, a change that is "speculative or unlikely to occur is not reasonably foreseeable." Guidelines §15064(d)(3). The term "project" may include several discretionary approvals by government agencies; it does not mean each separate government approval. Guidelines §15378(c).

The EIR is the "heart" of CEQA, providing agencies with in-depth review of projects with potentially significant environmental effects. Laurel Heights, 6 Cal.4th at 1123. An EIR describes the project and its environmental setting, identifies the potential environmental impacts of the project, and identifies and analyzes mitigation measures and alternatives that may reduce significant environmental impacts. Id. Using the EIR's objective analysis, agencies "shall mitigate or avoid the significant effects on the environment... whenever it is feasible to do so. Pub. Res. Code §21002.1. The EIR serves to "demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions." No Oil, Inc. v. City of Los Angeles, (1974) 13 Cal.3d 68, 86. It is not required to be perfect, merely that it be a good faith effort at full disclosure. Kings County Farm Bureau v. City of hanford, (1990) 221 Cal.App.3d 692, 711-12. A reviewing court passes only on its sufficiency as an informational document and not the correctness of its environmental conclusions. Laurel Heights, 47 Cal.3d at 392. An EIR will be upheld if it suffices as an informational document; mandate will issue only if it fails to include relevant information which precludes informed decision-making and informed public participation.

"Choosing the precise time for CEQA compliance involves a balancing of factors. EIRs... should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design and yet late enough to provide meaningful information for environmental assessment." Guidelines, §15004(b). As a general rule, public agencies shall not undertake actions concerning a proposed project that would have a significant adverse effect or limit the choice of alternatives or mitigation measures before completion of CEQA compliance. Guidelines, §15004(b)(2). "[I]n order to achieve the salutary objectives of CEQA the determination of the earliest feasible time to [prepare the CEQA document] is to be made initially by the agency itself, which decision must be respected in the absence of manifest abuse." Mount Sutro Defense Committee v. Regents of University of California, (1978) 77 Cal.App.3d 20, 36, 40.

E. Analysis

CWIN and PCL argue that DWR is required to be the lead agency for the Monterey Amendments project EIR, which will examine all water transfers on a program level. The Kern

water transfer is part of the Monterey Amendments project. Therefore, DWR is the correct lead agency to conduct the environmental review of the Kern water transfer. According to Petitioners, while Castaic may not serve as the lead agency for "first-level" environmental review of the water transfer, it may serve as lead agency for a project level EIR for the Kern water transfer.

1. Validity of the Transfer

At the outset, the court must make clear an issue greatly discussed at hearing. Petitioners contend, and Castaic and Wheeler Ridge strongly dispute, that DWR may "invalidate" the Kern water transfer when it performs the program EIR.

Under contract and validation law, the Kern water transfer contract, entered into in 1999, is valid, has been approved by DWR, and Castaic has paid Wheeler Ridge for it. Neither the parties nor DWR can terminate the Kern transfer contract. Nothing in CEQA permits a public agency to void a contract.

In Kenneth Mebane Rranches v. Superior Court, (1992) 10 Cal.App.4th 276, a flood control district sought to condemn land outside its territory in order to mitigate the environmental impact of a project within its boundaries. The appellate court held that CEQA only requires mitigation of environmental impacts where it is feasible to do so. Where mitigation is infeasible, an agency can always approve a project notwithstanding environmental impacts if it issues a statement of overriding interests. But it cannot take actions that are not legal, and hence infeasible. 10 Cal.App. at 291-92.

Thus, in evaluating the environmental effects of the Monterey Agreement, DWR may impose mitigations that are legal. But it cannot invalidate the Kern transfer. The imposition of illegal mitigations would be infeasible. *See also* Pub. Res. Code §21004 (in mitigating significant environmental impact, agency may only employ powers provided by law).[12]

This does not mean that DWR's Monterey Amendments EIR cannot affect the Kern water transfer. DWR's EIR will consider the environmental impacts of the Kern water transfer in conjunction with the Attachment E transfers which the parties in Monterey Plus agreed were completed and final. DWR conceivably could conclude that these transfers have significant environmental impacts. As a consequence, DWR might have to impose feasible mitigation measures, adopt alternatives, or make a finding of infeasibility and adopt a statement of overriding considerations.[13] If mitigations/alternatives are adopted, they could significantly impact Castaic and Wheeler Ridge. As DWR states, "the contract amendments that effectuated the transfers under the Monterey Amendment[s] do not preclude DWR in its choice of

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[12]The parties disagree on whether the Monterey Amendments are valid and final. That is, they disagree on whether the amendments can be challenged in a reverse validation action separate and apart from CEQA. Resolution of this issue is unnecessary to the court's decision.

[13]At hearing, Petitioners' counsel stated that the parties to Monterey Agreement entered into a joint statement of the possible impacts from the Amendments, citing AR 48628-29. The joint statement at those pages of the record does not discuss possible mitigations; it merely summarizes the terms of Monterey Plus.

alternatives in the Monterey Amendment[s] EIR or mitigation measures that may need to be imposed to reduce significant impacts to less than significant." DWR Br. at 20. DWR gives an example of reducing the amount of SWP water to protect water quality standards for fish in the Delta. Id. at 20. These mitigations could undermine the Kern water transfer.[14] But DWR will not be considering whether the Kern water transfer is valid; it simply does not have the authority to void that transfer. *See* Kenneth Mebane Ranches v. Superior Court, (1994) 10 Cal.App.4th 276, 292.

2. Lead Agency Law

The lead agency under CEQA is the agency that carries out a project or has primary authority for approving a project. Pub. Res. Code 121067; Guidelines §15051; *see* PCL, 83 Cal.App.4th at 904 (DWR, not Central (a State Water Contractor), had principal responsibility for carrying out the Monterey Agreement and should have been lead agency for program EIR). The role and responsibility of the lead agency is "fundamental to the CEQA process as a whole." Guidelines §15050. The identification of the proper lead agency plays a "crucial role" in the division of responsibilities among public agencies reviewing a project. PCL, 83 Cal.App.4th at 903. When determining the appropriate lead agency, the courts look to determine which agency has principal responsibility for the core project activity. Friends of Cuyamaca Valley v. Lake Cuyamaca, (1994) 28 Cal.App.4th 419, 427. The lead agency responsibility is placed upon the agency with power to approve or disapprove the project. Lexington Hills v. State of California, (1988) 200 Cal.App.3d 415, 433. Though one agency has substantial responsibility for a project, it cannot act as lead agency if another agency bears final responsibility. *See* Fullerton Joint Union High School District v. Board of Education, (1982) 32 Cal.3d 779, 795, n.15 (State Board of Education, not county, had final responsibility for school district plan). Where the project is local, such as land use decisions, the agency that has general governmental power over a project is almost always the lead agency. Where two or more agencies are involved in a project, the agency that will carry out the project shall be the lead agency. Guidelines §15051(a).

3. The Impact of the PCL Decision

Petitioners contend that the PCL decision left no doubt that DWR is the appropriate lead agency for a program-level environmental review of the water transfers in the Monterey Agreement, contrasting DWR's statewide expertise with CCWA's "provincial experience." The Monterey Amendments restructure water distribution throughout the state, and the "allocation of water to one part of the state has potential implications for distribution throughout the system." Only DWR has principal responsibility for implementation of the Monterey Amendments. Op. Br. at 11-12; *see* PCL, 83 Cal.App.4th at 904, 908. Since the Kern water transfer is part of the Monterey Amendments, DWR must perform any EIR concerning the Kern water transfer.

Petitioners' argument is a *non-sequitur*. Nothing in PCL requires DWR to perform the environmental review for the Kern water transfer. Certainly, the PCL decision requires that DWR prepare the program EIR for the Monterey Amendments, now Monterey Plus. The

[14]The close cooperation between DWR and Castaic on the 2004 EIR reduces, but does not eliminate, the prospect that DWR will impose alternatives or mitigations.

appellate court's reason for committing this task to DWR is that CEQA requires the lead agency to be the agency with principal responsibility for the project, the project is the environmental review of the Monterey Agreement, and DWR, not CCWA, has principal responsibility for implementing the Monterey Agreement. The decision pointed out that DWR manages the SWP, and has the statewide expertise and perspective to conduct the environmental review of the Monterey Agreement, which statewide project. While CCWA may have had a substantial stake in seeing the Monterey Agreement implemented, it did not have principal responsibility for it. DWR did, and DWR is required to perform the EIR for the Monterey Agreement. 83 Cal.App.4th at 906.

However, the PCL decision does not commit DWR to conduct the EIR for the Kern water transfer, or for any site specific project conducted pursuant to the Monterey Amendments. The PCL decision plainly requires DWR to prepare the program EIR for the Monterey Amendments, and its permanent transfer of 130,000 acre feet of SWP water. But it does not even mention the Kern water transfer, which is a local water transfer of Wheeler Ridge water to a point 60 miles further south in Santa Clarita Valley. The local nature of the project makes Castaic the logical choice to act as lead agency of this transfer, and nothing in PCL requires Castaic to wait for DWR's program EIR. The Kern water transfer is simply a different project from the Monterey Amendments.

Petitioners' concession that at some point Castaic can and should act as the lead agency for the Kern water transfer EIR undermines their argument that PCL committed this task to DWR. The concession shows that Petitioners really are concerned about the timing of this project specific EIR, and not whether it was committed to DWR in the PCL decision. Petitioners contend that Castaic must wait for DWR's Monterey Amendments program EIR and tier off of it for the Kern water transfer EIR. This argument is, as Castaic describes it, that Castaic "jumped the gun" by preparing the 2004 EIR. But the argument implicitly concedes that PCL did not commit the transfer EIR to DWR.

4. The Agency with Principal Responsibility

Even if PCL did not commit environmental review of the Kern water transfer to DWR, Petitioners argue that the Kern water transfer is an integral part of the Monterey Amendments project. This is shown by Monterey Plus, which excludes the Kern water transfer from the list of transfers designated as "final" and recognizes DWR's responsibility to assess its environmental impacts as part of the programmatic review. The Kern water transfer contract itself expressly relies on the Monterey Amendments, using its provisions as authority to accomplish the Kern water transfer. Even Wheeler Ridge's amendment to its SWP contract identifies the outcome of PCL as a factor that could impact the Kern water transfer's effectiveness. All of these facts, Petitioners argue, mean that the transfer is part of the Monterey Amendments environmental review.

Petitioners further argue that the nature of a program EIR supports their position. This purpose "is to document a series of actions so related they can be characterized as one project." Friends, 95 Cal.App.4th at 1377. The Monterey Amendments, including its transfer provisions, qualify as a "series of actions so related that they can be characterized as one project." An integrated review of the entire program may provide occasion for a more exhaustive

consideration of effects and alternatives than would be practical in an EIR on an individual action, ensure consideration of cumulative actions that might be slighted on a case-by-case analysis, avoid duplicative reconsideration of basic policy considerations, and allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basis problems or cumulative impacts. Id. at 1377. These factors are all borne out by the 2004 EIR, which presents a series of issues (the amount of supplies available to several water agencies, the location and timing of SWP deliveries, and use of SWP conveyance and storage facilities) on which DWR has superior expertise and greater accountability than Castaic. DWR may not delegate to Castaic its responsibility to prepare the environmental review for the Kern water transfer.

Under lead agency law, Castaic may act as lead agency and prepare an EIR for the Kern water transfer. The Kern water transfer is a project separate in time from the Monterey Amendments, now Monterey Plus. The core of the project is a local transfer of water between Castaic and Wheeler Ridge. Castiac alone had the responsibility to determine the water needs of its service area and to obtain the necessary water for those needs. Castaic negotiated and entered into the transfer contract with Wheeler Ridge. Castaic performed the contract by obtaining private investors who paid $47 million to Wheeler Ridge's water, and by taking delivery from DWR. The transfer is valid and cannot be challenged. Thus, Castaic has the general governmental power over the transfer, and is presumptively the lead agency for its own project. Bakman v. Dept. of Transportation, (1979) 99 Cal.App.3d 665, 678-79. Indeed, the environmental review of water transfers is generally performed by a local, not state, agency. County of Amador v. El Dorado County Water Agency, (1999) 76 Cal.App.4th 931 (local agency's analysis of water transfer project); Save Our Carmel River v. Monterey Peninsula Water Management District, (2006) 141 Cal.App.4th 677, 701 (city was lead agency as recipient of water transfer); Friends of the Eel River v. Sonoma County Water Agency, (2003) 108 Cal.Appp.4th 859 (local agency's EIR for plan to increase diversions of water from river); Sierra Club v. West Side Irrigation District, (2005) 128 Cal.App.4th 690 (local agency's environmental review of two projects to transfer water rights).[15]

It is true that DWR has an overall interest in promoting effective water management on a statewide basis. Pursuant to this interest, DWR had the right to approve the Kern water transfer, and it did so. This does not equate to principal responsibility, however. DWR is required by statute to "facilitate" the voluntary transfer of water between local agencies. Water Code §109.

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[15]The Friends court implicitly decided that Castaic may act as lead agency for the Kern water transfer. The Friends court acknowledged that it was required to address all deficiencies in the EIR unless it made a finding of improper lead agency. Pub. Res. Code §21005(c). If Castaic was the improper lead agency for the 1999 EIR, the appellate court was obligated to say so. The Friends court concluded that the 1999 EIR's only deficiency was that it tiered from the defective Monterey Agreement program EIR. Thus, the decision necessarily implied that Castaic was the proper lead agency for the 1999 EIR.

Of course, this case concerns the 2004 EIR, not the 1999 EIR, and the court previously held that Petitioners were not bound by the Friends court's implied determination. But the project is the same, and the implicit appellate determination is entitled to weight.

Per the SWP contracts, DWR's approval of the Kern water transfer could not be unreasonably withheld. Thus, DWR's involvement in the transfer is to facilitate the transfer by approving it and providing the SWP schedule delivery. Moreover, the SWP is intended as a supplement, not the exclusive supply, of water. Water supply decisions must be made by local Water Contractors, who obtain water both from SWP and other sources.[16]

Given that the decision to enter into the Kern water transfer belonged solely to Castaic and Wheeler-Ridge, and that DWR's approval is necessary merely to facilitate the transfer, Casataic had principal responsibility for the transfer.[17]

5. Project Definition

Petitioners contend for the first time in their Supplemental Vineyard Reply and at oral argument that the correct project definition is not the Kern water transfer, but is really the Monterey Amendments, citing the court's earlier ruling on Castaic's motion for legal determination that the key issue is whether the Amendments are a "series of actions (including the Kern water transfer) so related that they should be characterized as a single project." Pet. Supp. Reply at 5.

The correct definition of the project -- whether it is the Monterey Amendments or the Kern water transfer -- is a different issue than whether Castaic can act as lead agency for the project. Although the court did allude to project definition in ruling on the earlier motion, Petitioners never raised this issue in their opening brief or reply. Instead, they raise it for the first time in a reply brief on the application of Vineyard to this case. On appeal, an issue raised without analysis or authority lacks foundation and need not be addressed. City of Arcadia v. State Water Resources Control Board, ("Arcadia") (2006) 135 Cal.App.4th 1392, 1429, 1431. Similarly, an issue raised for the first time in supplemental reply deprives the opposing party of an opportunity to analyzing the issue and defend their position. Petitioners have waived the correct project definition as an issue by not raising it earlier.

Assuming *arguendo* that the issue has not been waived, a project under CEQA includes an activity directly undertaken by a public agency which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. Pub. Res. Code §21065(a). The "project" must be broadly defined, so as to ensure against avoiding environmental review by "chopping a larger project into little ones" or "piecemealing." Bozung v. Local Agency Formation Commission, (1975) 13 Cal.3d 263, 283-84. The project includes "the whole of an action" that has a potential for resulting in a direct or indirect physical change in the environment. Guidelines §15378. An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a

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[16]As Wheeler Ridge points out, DWR was not the lead agency for the 1991 Devils Den transfer or any of the Attachment E transfers listed in the Monterey Agreement.

[17]Given that DWR's approval may not be unreasonably withheld, cases holding that a state agency should prepare the EIR where it has final authority to approve a project are simply inapposite. *See* Fullerton v. State Board of Education, (1982) 32 Cal.3d 779, 795, n.15 (State Board of Education had final authority to submit plan to voters for new unified school district).

proposed activity. Mcqueen v. Board of Directors, (1988) 202 cal.App.3d 1136, 1143. The agency must avoid "piecemealing" or splitting a project into two or more segments. Otherwise, the cumulative environmental impacts of each piece may not be fairly analyzed. Burbank-Glendale-Pasadena Airport Authority v Hensler, (1991) 233 Cal.App.3d 577, 592. On the other hand, CEQA was not intended to and cannot reasonably be construed to make a project of every activity of a public agency, regardless of the nature and objective of such activity...." Simi Valley Recreation & Park District v. Local Agency Formation Commission, (1975) 51 Cal.App.3d 648, 663.

In San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus, (1994) 27 Cal.App.4th 713, 731-32, the court held that the project description in an EIR was improperly restricted to a 633 single family residential units, a 40,500 square foot commercial center, and a 14 acre park, failing to include sewer expansion which the EIR acknowledged would be required as part of the development. Although a separate EIR was prepared for the sewer expansion, neither it nor the development project EIR referred to the growth-inducing effects of the two projects considered together. This failure to address cumulative impacts was a separate failure of the development EIR. 27 Cal.App.4h at 733. "[t]he danger of filing separate environmental documents for the same project is that considration of the cumulative impact on the environment of the two halves of the project may not occur. This danger was here realized." Id. at 734 (citation omitted). Because the EIR did not "adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project" informed decision-making was precluded, the EIR was inadequate. Id.

The lesson from San Joaquin and other project definition cases is that the project should be defined broadly to ensure a complete analysis of impacts resulting from future expansion or continuation of other phases of the project.

In this case, DWR is the lead agency for the Monterey Amendments program EIR. DWR's description of its project is to improve the management of SWP supplies and operations through the Monterey Amendments. Thus, the Monterey Amendments EIR is broad in scope. The EIR will look at changing the allocation of all SWP water supplies (including deletion of agriculture first shortage provisions), retiring 45,000 acre feet of agricultural water, and establishing more efficient use of SWP facilities. As part of the analysis, it will analyze the potential impacts from permanently transferring 130,000 acre feet of water from agricultural to urban contractors per the Monterey Agreement. This analysis will look at the individual transfers, including the Kern water transfer, as they fit the entire Monterey Amendments. But DWR does not intend to consider each transfer individually; it intends to evaluate the impact of all the Attachment E transfers and the Kern water transfer as a whole. DWR Br. at 17.

Castaic's 2004 EIR project description concerns the impacts of the Kern water transfer alone. Castaic's EIR does look at cumulative impacts of the project with other projects, including the Monterey Amendments, but does not purport to assess the environmental impacts of the Monterey Amendments independent of the Kern water transfer. AR 141-42.

Castaic relies on the independent utility test to argue that the Kern water transfer is a separate project the environmental impact of which may be separately analyzed from the Monterey Amendments. The "independent utility" test has been developed in NEPA cases to determine whether multiple actions are connected so as to require an agency to consider them in

a single environmental review. Wetlands Action Network v. United Sates Army Corps. Engineers, (9th Cir. 2000) 222 F.3d 1105, 1118.[18] Pursuant to the independent utility test, where each of two projects would have taken place with or without the other, each has "independent utility" and the two are not considered so connected that an agency must consider them in a single environmental review. Native Ecosystems Council v. Dombeck, (9th Cir. 2002) 304 F.3d 886, 894. *See also* DelMar Terrace Conservancy, Inc. v. City Council of the City of San Diego, (1992) 10 Cal.App.4th 712 (freeway segment was separate project serving a viable purpose even if long-term, multi-segment plan to expand freeway never occurred, and had independent utility under CEQA).

Castaic argues that it has contemplated the Kern water transfer since 1988, when it included a transfer with Kern in its 1988 Capital Program for the Santa Clarita Valley's future water needs. For economic reasons, Wheeler Ridge, too, sought to transfer its SWP water rights since approximately 1985. Castaic concludes that the Kern water transfer would have occurred with or without the Monterey Amendments. Articles 40 and 41 of the SWP contract permitted transfers between Water Contractors, subject to DWR approval. Article 53, added to the SWP contracts by the Monterey Amendments and concerning the transfer of 130,000 acre-feet, did not "enlarge, restrict, or otherwise impact" Castaic's right to acquire water from Wheeler Ridge under Articles 40 and 41. Instead, it was merely a blanket approval of certain contemplated transfers. Castaic Op. Br. at 21. The Kern water transfer was completed, paid for, and operating since 1999. Nothing about it is tied to the outcome of the Monterey Amendments. Thus, while the transfer is part of a larger scheme (the Monterey Amendments), it is a long-planned site specific project with independent utility from the Monterey Amendments.

The court cannot conclude that the Kern water transfer would have taken place without the Monterey Amendments. True, Castaic has wanted Wheeler Ridge's SWP allocation of water since the late 1980's, and Wheeler Ridge was willing to provide it. Yet, it did not happen until after the Monterey Amendments. The contract between Castaic and Wheeler Ridge states that the transfer was taking place "in accordance with" Article 53 of the Monterey Amendments, and those Amendments change the way SWP water is allocated in California. It does not say that the transfer is being made under Article 41. Petitioners contend, and the court agrees, that only through conjecture can one conclude that Castaic and Wheeler Ridge would have entered into the transfer without the Monterey Amendments, and with Article 18's agriculture first provisions in place.[19]

Though the court cannot conclude that the Kern water transfer would have occurred without the Monterey Amendments, it can conclude that the transfer will remain in effect even if the Monterey Amendments are not approved or otherwise are mitigated under CEQA. The court

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[18]Since CEQA was modeled on the federal NEPA statute, federal decisions on NEPA are persuasive authority on CEQA issues. No Oil, Inc. v. Los Angeles, (1974) 13 Cal.3d 68, 86.

[19]When Petitioners commented on the draft EIR that any pre-Monterey Amendments transfer would be subject to Article 18's agriculture first provisions, Castaic did not say that the Kern transfer would have occurred without the Monterey Amendments. It merely responded that the transfer "could occur" either pre- or post- Monterey Amendments. AR 993.

already has indicated that the Kern water transfer is final. The parties to the transfer stated at hearing that they have no intention of rescinding it even if the Monterey Amendments are mitigated and Article 18's agriculture first provisions are in effect. This position is supported by the fact that the 2004 EIR evaluates the water supply impacts of just such a pre-Monterey Amendment Article 18 scenario. AR 186. As such, it is compelling evidence that the transfer will stand.[20]

Plainly, then, the Kern water transfer is final and will remain in place whatever happens to the Monterey Amendments. As such, the transfer has "independent utility" for purposes of environmental review. It is not so connected to the larger Monterey Amendments that the two must must be considered in a single environmental review. *See* Native Ecosystems Council v. Dombeck, 304 F.3d at 894.

6. EIR Timing

Petitioners' real argument seems to be that, whenever a program EIR is anticipated, the agency preparing an EIR for a specific project must wait for the program EIR.

This is not the law. Nothing in CEQA requires Castaic to wait for DWR's program EIR. Indeed, as a general proposition, the environmental review process should be undertaken early enough in the planning process to impact planning decisions, with the timing committed to the agency's discretion. City of Vernon v. Board of Harbor, (1988) 63 Cal.App.4th 677, 690-91. The Kern water transfer occurred almost eight years ago. It has been paid for and operating for a number of years. Castaic tried to conduct a timely environmental review, but that EIR was set aside in Friends. It is not an abuse of discretion for Castaic to want to complete the environmental review and obtain finality for the transfer without waiting for DWR's program EIR of the Monterey Amendments, now Monterey Plus.

Nor does this decision frustrate the law concerning program EIRs and tiering. The purpose of a program EIR is to document a series of actions so related that they can be characterized as one project. Friends, 95 Cal.App.4th at 1377. If the program EIR is sufficiently comprehensive, the lead agency may dispense with further environmental review for later activities within the program that are adequately covered in the program EIR. Guidelines §15618(c). Thus, the program EIR may be used to focus or simplify later environmental review, or as the basis of a tiered EIR. "Tiering" means the coverage of general matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance, followed by narrower or site-specific EIRs which incorporate by reference the discussion in the prior report. *See* Pub. Resources Code §§ 21068.5, 21093 and Guideline §§ 15152, 15385. Tiering is favored "whenever feasible, as determined by the lead agency." Pub. Resources Code §21093(b). It is required where a prior EIR has been prepared and certified for a program, plan, or ordinance. Pub. Resources Code §21094(a). However, tiering is only required "where a prior environmental report has been prepared and certified for a program." Friends, 95 Cal.App.4th at 1383. It is not required, and in fact is prohibited, where the program EIR has yet to be prepared. Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412

[20]Petitioners think so too, for their principal argument is premised on the 2004 EIR's assumption that the transfer is final for all purposes.

EIR cannot tier off of *future* environmental document).

7. Vineyard

In Vineyard, the Supreme Court addressed a county prepared EIR for a large land use development project known as "Sunrise Douglas." The principal issue was the availability of long-term water supply for the project, and the environmental impacts and mitigation for such supply. The Supreme Court analyzed the various water supply cases and distilled several principles. First, the EIR for a land use project must present sufficient facts to evaluate the pros and cons of supplying the amount of water the project will need, and not simply ignore or assume a water supply solution will be found for a development project. Second, an adequate EIR for a large project must show water supply for the entire project. It is not enough to show available water for early stages. While the agency may tier and defer analysis of certain details of later phases of long-term or complex projects, deferring analysis through tiering is appropriate when the impacts or mitigation measures are not determined by the first-tier approval and are specific to later phases. Third, the future water supplies identified and analyzed must bear a likelihood of actually being available. Finally, where there is some uncertainty about availability, CEQA requires some discussion of possible replacement sources or alternatives, and their environmental consequences.

Of particular use herein, the Supreme Court discussed the EIR's reliance on an anticipated local Water Board's master plan update, which would discuss the availability of long-term water supplies to the area and their environmental impact. The Court held that the county's EIR cannot tier from a *future* environmental document. If the environmental analysis from the Water Board's anticipated master plan update was important to understanding the long-term water supply for Sunrise Douglas, it should have been performed in the Sunrise Douglas EIR even though that might result in subsequent duplication by the Water Board's master plan update. Or, the county could have deferred analysis and approval of Sunrise Douglas until the Water Board's master plan update, then tiered the Sunrise Douglas EIR from the programmatic analysis performed by the Water Board.

The Vineyard decision shows that the timing of Castaic's project specific EIR in relation to DWR's program EIR is up to Castaic. It may either wait for DWR's program EIR and tier off of it, or prepare its own EIR for the Kern water transfer first. If it chooses the latter, Castaic may not tier off an environmental document that does not yet exist. Instead, Castaic must analyze all necessary environmental impacts and mitigations. If analysis of some portion of the Monterey Amendments is important to understanding the environmental impacts of the Kern water transfer, then analysis of that issue must be included in Castaic's EIR. But if Castaic's EIR does so, it is irrelevant that the document duplicates some of what DWR would do, or even that it may be inconsistent with DWR's analysis.[21] As DWR contends, CEQA's goal is to ensure sufficient information; it contains no prohibition against too much information. DWR Br. at 21. The timing of Castaic's EIR for the Kern water transfer is up to Castaic and Castaic alone.

[21]As previously stated, the prospect of inconsistencies between Castaic's EIR and DWR's program EIR is diminished by Castaic's use of DWR modeling, DWR's comments and input into the 2004 EIR, and the general cooperation and coordination between the two agencies.

F. Contents of the 2004 EIR

Apart from the proper lead agency, Petitioners argue that the 2004 EIR is inadequate. Initially, the court believed that Castaic could have real problems on this issue. It is one thing for Castaic to act as lead agency on a water transfer before the program EIR is prepared; Vineyard and other case law say that Castaic may do so. But the EIR must be adequate and complete. Vineyard teaches that if analysis of some portion of the Monterey Amendments is important to understanding the environmental impacts of the Kern water transfer, then that analysis must be included in Castaic's EIR. PCL held that the "no project" alternative was particularly important for the Monterey Amendments, and the public was entitled to know what would happen if the Amendments were not approved and Article 18 was implemented in the event of water shortage. Commentators particularly wanted to know whether imposition of Article 18 might eliminate the "paper water" entitlements in the water contracts, reduce land planning decisions based on that paper water, and ultimately reduce growth and construction of additional SWP facilities. PCL, 83 Cal.App.4th at 892-3.

The court wondered whether Castaic would have the expertise to perform any analysis of the Monterey Amendments or the "no project" alternative that would be required in the 2004 EIR. However, the parties' briefs, and oral argument at hearing, have demonstrated that, with one exception, the 2004 EIR's contents are sufficiently presented. Indeed, Petitioners barely criticize the 2004 EIR's adequacy, except as it impacts the lead agency issue.

1. "Deception"

Petitioners' principal argument about content is that the 2004 EIR is deceptive in failing to make clear that the Kern water transfer is not "final." They contend that the 2004 EIR's project definition treats the Kern water transfer as an immutable *fait accompli* which fails to disclose that the "final status" of the transfer depends on the DWR's forthcoming review. According to Petitioners, the EIR improperly relies on the interim availability of the water to predict that DWR will "leave it in place," a point which the court in California Oak Foundation v. City of Santa Clarita, ("California Oak") (2005) 133 Cal.App.4th 1219, 1238, n.16 had no trouble dispatching, and also improperly states that it would be unnecessary and speculative to consider what the DWR might do to change the transfer (*See* AR 994). Pet. Op. Br. at 19-20. This false assumption that the transfer is immutable may result in land use decision-makers approving projects based on water availability "worth little more than a wish and a prayer." Id. at 20-21.

The court has determined that the transfer is final as a matter of law. Therefore, the EIR is not wrong in saying so. What Petitioners really contend is that the Kern water transfer, though final, can be affected by the DWR's program EIR through mitigations and imposition of alternatives. Yet, the EIR proceeds as if the transfer cannot be altered. As counsel described the issue at hearing, the 2004 EIR "talks about risk, but never directly informed the public about the fact that the transfer may be unwound through the Monterey Amendment EIR process." Thus, the EIR refers to the transfer as of an "*existing* 41,000 " acre feet of SWP Table A water (AR 15, 35) and states that "no permits or *other approvals* would be required other than" certification of the

EIR. AR 16.[22]

The EIR is the method for disclosure of environmental issues. Rural landowners Assn. V City Council, 43 Cal.App.3d 1013, 1020. CEQA's purpose is to compel agencies to make decisions with environmental consequences in mind, but CEQA does not and cannot guarantee that these decisions will always favor environmental concerns. Laurel Heights, 47 Cal.3d at 393. The EIR should provide sufficient analysis to allow decision-makers to make intelligent judgments about environmental consequences. Guidelines §15151. The evaluation of environmental effects need not be exhaustive, but the EIR's sufficiency is reviewed in the light of what is reasonably foreseeable. Id. Perfection is not required, but adequacy, completeness, and a good faith effort at full disclosure is. Id.

In California Oak, the court addressed the proposed development of a 584 acre industrial park project in the Santa Clarita. The City's EIR relied on the Kern water transfer for water supply, and the appellate court held that it did not adequately address the uncertainty in that water delivery. 133 Cal.App.4th at 1236. The City's comments "did little more than dismiss project opponents' concerns about water supply" and the EIR failed to discuss the adequacy and availability of water supply absent the Kern water transfer. Appendix K to the EIR did acknowledge uncertainty in the Kern water transfer, but this was insufficient in part because inforamtion "scattered here and there in EIR appendices" or a report "buried in an appendix" is not a substitute for good faith reasoned analysis. Id. at 1239 (citation omitted). Moreover, Appendix K contained no facts and analysis about the likelihood of deficit or alternative sources of supply, and was misleading about the fact that Castaic had an SWP "entitlement" without explaining that the entitlement consisted in part of "paper water." Id. at 1239-40. Hence the EIR failed as an informational document on water supply issues.

Castaic contends, and the other Respondents agree, that the 2004 EIR fully addresses the uncertainty of what DWR will do. At hearing, they contended that Petitioners really are arguing that the 2004 EIR is misleading because it does not anticipate Petitioners' argument.[23]

The EIR explains that planning for water supply to meet demands requires consideration of reliability of SWP supplies, because historical and statistical analysis show that the full Table A amount will not be available in some years. AR 41. The EIR explains that Castaic's Table A amount is the maximum SWP amount, and the amount of SWP water actually available to it varies from year to year. Id. The EIR acknowledges that DWR's allocations are based on that year's hydrological conditions, the amount of water stored in the SWP system, and contractor requests for water. AR 16. The EIR discusses the Monterey Agreement (AR 46-47), PCL and Monterey Plus. AR 17-18, 47. The EIR cautions land use planners who might rely on the EIR to predict future water supplies, that while Castaic will implement all feasible measures to obtain water "past water deliveries are not a guarantee of future delivery rates." AR 13.

The EIR considers the environmental impact of the project based on water allocation

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[22]At trial, Petitioners' counsel made plain that this issue of deception is distinct from the reliability of water delivery by DWR.

[23]Respondents' contention sounds like an argument that Petitioners failed to exhaust their administrative remedies. However, no failure to exhaust claim was made in their briefs.

scenarios of pre-Monterey Amendments without Article 18 cutbacks, pre-Monterey Amendments with Article 18 cutbacks, and post-Monterey Amendments. AR 56. The EIR argues that the project could have been authorized under Article 41, but instead was implemented under Article 53 of the Monterey Agreement. It adds that DWR is preparing a new EIR for the Monterey Amendment.

Since the Monterey Amendments change the way in which SWP water is allocated among contractors, the 2004 EIR provides three separate analyses of the project's impacts to water supply. AR 186-89. The EIR goes to great lengths to discuss the uncertainties in the Article 18 allocations. AR 187-89. For each scenario, the EIR estimates reliability based on wet, dry, and extended dry year conditions. AR 183-91. The EIR addresses direct impacts to water supply and water quality under the three water allocation scenarios. AR 202-05. It discusses indirect impacts from the growth-inducing effect of the project, and mitigations of these impacts through implementation of existing agency policies. AR 207-224. It discusses the cumulative impact of the project and other projects inside and outside the project area. AR 278-89. Finally, it addresses alternatives to the project, including a no project alternative. AR 293-300.

The EIR clearly demonstrates the variability of SWP deliveries, and covers what could happen as a result of the Monterey Amendments EIR. But Petitioners are correct that the EIR has a hole in it. The EIR does not directly explain that the project may be impacted by the outcome of the Monterey Amendments EIR. Instead, the 2004 EIR assumes there are three possible water delivery scenarios without any discussion of why or how they would occur: "Since the Monterey Amendments change the way in which SWP water is allocated among contractors, the 2004 EIR provides three separate analyses of the project's impacts to water supply." The reader is left to interpret how these allocations could come about, and must conclude on his or her own that they are three possible outcomes of challenges to the Monterey Amendments. Nor does the EIR explain how such challenges could cause these allocations to occur.

An EIR is an informational document which is supposed to provide the reader with the "analytic route the...agency traveled from evidence to action."Citizens of Goleta Valley v. Board of Supervisors, ("Goleta") (1990) 52 Cal.3d 553, 568. This means that the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions. Castaic is not required to predict the outcome of litigation, and may not be able to discuss the likelihood of each of the three allocations. However, it should have at least explained why the three scenarios are relevant and how they would occur.[24] The failure to do so leaves the reader wondering why they are pertinent. Consequently, the 2004 EIR fails to provide the analytic route by which the three alternatives are relevant.

Non-compliance with the disclosure requirements of CEQA may constitute a prejudicial abuse of discretion regardless of whether the agency would have taken the same action had it complied with CEQA. Pub. Res. Code §21005(a). Still, CEQA is subject to the established principle that there is no presumption of prejudicial error. Pub. Res. Code §21005(b). Only if the manner in which the agency failed to follow the law is prejudicial must the decision be set aside. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236.

[24]For example, the court has no idea how a pre-Monterey Amendments without Article 18 cutbacks would occur.

The issue is whether Castaic's failure to supply the analytical route for its consideration of the three allocations is prejudicial. Prejudice depends on whether the failure to include this information makes "any meaningful assessment" of the project's environmental effects impossible, in which case prejudice is presumed. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236 (agency approved timber harvesting plans without requiring necessary environmental information in them).[25] Even under this standard, not every CEQA failure is prejudicial. An EIR will be upheld if the error *de minimus* or clerical in nature (Save San Francisco Bay Association v. San Francisco Bay Conservation and Development Commission (1992) 10 Cal.App.4th 908, 935), the EIR analysis is comprehensive, if not perfect, despite the error (Schaeffer Land Trust v. San Jose City Council, (1989) 215 Cal.App.3d 612, 627-28), and information which should have been included to make the EIR accurate nonetheless has no material effect on informed decision-making or informed public participation (Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 747-50).

The Vineyard court reiterated that the reviewing court must focus on the nature of the defect, depending on whether the claim is predominantly one of improper procedure or a dispute over facts. Where the agency has employed the correct procedures, greater deference is given to the agency's factual conclusions, which are reviewed for substantial evidence. 40 Cal.4th at 435.

The 2004 EIR's non-compliance concerns its analytic route – why and how the three allocations are pertinent. This is not a fact issue to be supported by substantial evidence. Instead, it is a failure affecting the public's ability to make a "meaningful assessment" of the project's environmental effects. As such, it is prejudicial. *See also* Rural Land Owners Assn. v. Lodi City Council, (1983) 143 Cal.App.3d 1013, 1023 (whenever failure to comply with CEQA results in a subversion of its purposes by omitting information from the environmental review process, the error is prejudicial).[26]

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[25]One appellate court, Resource Defense Fund v. Local Agency Formation Commission, (1987) 191 Cal.App.3d 886, 897-98 has stated that "[f]ailure to comply with CEQA is necessarily prejudicial." This does not appear to be the consensus approach. *See* Dusek v. Anaheim Redevelopment Agency, (1985) 173 Cal.App.3d 1029, 1040-42 ("a minor CEQA sin or two" constituting technical defects where the public had not been misled or defrauded is not enough for prejudice).

[26]Petitioners also argue that the 2004 EIR finesses the non-final nature of the project by jumping the gun and analyzing pre-Monterey Amendments. According to Petitioners, Castaic performed a "mini-programmatic review" at AR 155-06 and App. D (AR 468-550). The charts at AR 184 and 506 show this. According to Petitioners, this is not just factual overlap; this is usurpation of DWR's responsibilities.

DWR correctly points out that Petitioners are complaining about too much information, something that CEQA does not proscribe. Petitioners have no complaint about the content of the mini-program review. To the extent that Castaic performed a task that DWR is obligated to perform, DWR may either use Castaic's analysis or perform a new one. The cooperation of DWR and Castaiac suggests that the overlapping environmental analysis will be consistent. Even if inconsistent, DWR's analysis will control for the Monterey Amendments. There is no

2. Modeling

Petitioners contend that Castaic used an obsolete DWR model, DWRSIM, for making predictions about the amount of SWP water that could be available as a result of the Kern water transfer. DWR has used CALSIM II for modeling SWP deliveries since 2000. While the EIR uses CALSIM II to look at the environmental setting, it only uses DWRSIM to look at environmental impacts. According to Petitioners, Castaic's rationale for doing so -- that DWRSIM should be used for the 1998 environmental setting -- makes no sense. Modeling is for future results, not historical analysis.

Petitioners argue that Castaic's use of an old model prejudicially overstates the reliability of SWP water delivery. App.D, Table 2-2 compares the projected 2020 deliveries based on the two different models. AR 493. The graph shows a discrepancy between the two models, particularly in the 50-70% supply range, and most glaringly in the range of drought conditions. Although the EIR does not quantify these differences, Castaic's responses to public comments presents a table that does. The table shows that the two models can differ by as much as 5000 acre-feet. Pet. Op. Br. at 23. According to Petitioners, this is not the "slight discrepancy" DWR states it is.

When a challenge is brought to studies on which an EIR is based, "the issue is not whether the studies are irrefutable or whether they could have been better. The relevant issue is only whether the studies are sufficient credible to be considered as part of the total evidence that supports the" agency's decision. Laurel Heights, 47 Cal.3d at 409 (lead agency entitled to choose and rely on expert opinion even though others may disagree). Expert testimony constitutes substantial evidence and an agency is entitled to rely on it. Uhler v. City of Encinitas, (1991) 227 Cal.App.3d 795, 805. Even where experts disagree, the agency is entitled to choose one expert's opinion over another. Laurel Heights, 47 Cal.3d at 409. The party challenging the EIR bears the burden of demonstrating that the studies on which the EIR is based "are clearly inadequate or unsupported." State Water Resources Control Board Cases, (2006) 136 Cal.App.4th 674, 795.

CEQA requires Castaic to reasonably inform the reader about the amount of water available. The EIR states that all environmental impacts from the project are driven by the amount of water delivered and the timing of delivery. AR 55. Castaic analyzed the amount of SWP water available for delivery through hydrologic modeling with computer simulations that predict the amount of water available under various hydrologic conditions. To do so, the EIR, like all EIR's had to have an environmental setting for the project. This environmental setting describes the conditions of the project as they exist at the time the Notice of Preparation is published or, if there is none, at the time the environmental analysis is commenced. This setting will normally constitute the baseline physical conditions by which an agency determines whether an impact is significant. Guidelines §15125(a).

The 2004 EIR states that its baseline 1998 environmental setting used DWRSIM, which is a model simulating the operations of the SWP, "because this is the modeling tool that was available during 1998." AR 55. DWR had used DWRSIM in 2000 to conduct a reliability study for another project. The 2004 EIR does use CALSIM II for the current environmental setting of

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usurpation of responsibility.

the project. CALSIM II was available because DWR performed a SWP Delivery Reliability Report in 2003 using CALSIM II as its model. AR 56. Although the modeling tools are different, the criteria used to input into the computer simulation has not changed significantly. Id.

The question raised by Petitioners is why use an older computer simulation model (DWRSIM) for the 1998 baseline when a newer model (CALSIM II) was available? Appendix D of the 2004 EIR, entitled "Technical Data for Hydrologic Analysis," explains that Castaic had to do so because it did not perform any model analysis of its own. Instead, Castaic relied upon DWR's expertise, and its existing model studies. *See* AR 491. DWR used DWRSIM in its 2000 study and CALSIM II in its 2003 study; Castaic relied upon those same studies and same models.

Castaic's reliance on DWR's existing studies and its expertise is an explanation, but the issue becomes whether it is an adequate one.

The answer is in Appendix D, which explains that DWRSIM has a database of monthly runoff based on historic hydrologic data for a 73 year period from 1922-74. DWRSIM takes this data and, depending on the input variables of operating constraints and water contractor demand, estimates the amount of water SWP can deliver each month over that 75 year period. Assuming that hydrologic conditions repeat, the operator can predict the amount of water available under that particular hydrologic condition and with a particular demand and operating condition. AR 491.

Appendix D then shows that DWRSIM and CALSIM II predict similar outcomes, and that the differences in their predictions can be explained. In Figures 2-1 and 2-2 of Appendix D, Castaic compares the two models' prediction of SWP water deliveries at existing demand and at predicted 2020 demand levels. AR 493. The "existing demand" for the DWRSIM model is 1998 demand. The "existing demand" for the CALSIM II model is 2001 estimated demand. The 2001 demand is higher than the 2000 demand. Consistent with reality, the model will only show delivery up to the amount of demand; SWP will not deliver more water than is asked for even if it is available. This difference in demand explains why CALSIM II shows more delivery in wet years than DWRSIM; the lower demand in 1998 limits the amount of delivery.

The difference in demand also explains in part why CALSIM II predicts a higher delivery in extremely dry conditions; 1998's lower demand means more water is left in storage from the preceding year and is available for delivery in a dry year. Appendix D says that the proof is in the pudding: comparison of DWRSIM and CALSIM II in Figure 2-2, for the year 2020 with the same level of demand for each model, shows very close prediction of SWP delivery for both models. AR 492-93.

Castaic concludes that the two models predict "generally comparable" results and their differences are minimal. AR 491, 1003. Castaic argues that, if anything, the slightly higher supplies predicted by the DWRSIM model provide a worst case scenario for purposes of growth inducing impacts; the more water the more developers will grow the Santa Clarita Valley. AR 1003-04, 1009.

Contrary to Petitioners' argument, the use of DWRSIM and not CALSIM II in the 1998 baseline study does not affect the conclusion that the study constitutes substantial evidence. Petitioners do not present expert opinion that the use of DWRSIM results in any error. They merely rely on the differences in Figures 2-1 and 2-2 of Appendix D, and Appendix D explains

the reason for the differences. As Castaic points out, Petitioners cannot point to any environmental significance to the use of DWRSIM and not CALSIM II. Therefore, Petitioners have not met their burden of demonstrating that use of DWRSIM for the 1998 baseline in the 2004 EIR was "clearly inadequate or unsupported."[27]

3. Cumulative Impacts

Petitioners contend that the 2004 EIR attempts to assess the project's impacts on the SWP without discussion why Castaic is competent to do so. As an example, the EIR rejects any significant project impact on the Delta, even though it acknowledges that differences in timing in the use of water for urban (Castaic) rather than agricultural (Wheeler Ridge) purposes would change the timing of deliveries. AR 192. Petitioners argue that the Delta is "in crisis" and there is great potential for conflict between Castaic's and DWR's respective environmental analysis. Pet. Op. Br. at 23-4.

An EIR must contain a cumulative impacts analysis of the project's environmental impact when considered in conjunction with other projects (Guidelines §15130) in order to ensure that "the entire relevant environmental picture" has been adequately considered. Laupheimer v. State of California, (1988) 200 Cal.App.3d 440, 462. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Guidelines §15130(a)(1). The EIR should not discuss impacts which do not result at least in part from the project being evaluated. Id. The analysis should reflect the severity and likelihood of occurrence of the impact. Guidelines §15130(b). In every case, there should be at least a preliminary search for potential cumulative environmental effects and a preliminary assessment of their significance. Laupheimer, 200 Cal.App.3d at 462-63. The detail required in a cumulative impacts discussion need not be as great as provided for the environmental impacts attributable to the project alone. Guidelines §15130(b). Generally, the EIR should list the projects producing cumulative impacts or provide a summary of projections contained in a prior certified or adopted environmental document which describe the regional conditions contributing to the cumulative impact. Guidelines §15130(b)(1). The 2004 EIR uses the list approach to discuss cumulative impacts of the project's environmental impact when considered in conjunction with other projects. AR 241-289.

Castaic argues that everything that happens with respect to the Kern water transfer happens south of the Delta, and the EIR thoroughly discusses that, including the impact of the timing of deliveries. AR 193-06. Thus, the EIR's conclusion that the project will have no direct

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[27]Castaic does not have statewide expertise on SWP reliability, but its consultants and DWR do. In commenting on Castaic's draft EIR, DWR stated that the differences between CALSIM II and DWRSIM "may cause slight changes in results, which may lead DWR to different conclusions....[in DWR's Monterey Amendments EIR]" AR 564. However, DWR also found that the draft EIR adequately and thoroughly discussed the project and its impacts, including the effects of the project on the environment and the SWP, using appropriate baseline conditions, and had a good discussion of the relationship between the Kern water transfer and Monterey Plus. DWR concluded that the draft EIR a "adequately discusses the reliability of the SWP, pre- and post- Monterey Amendment conditions, and SWP operations." AR 564-65.

significant impact on the SWP or related facilities is fully supported. Castaic contends that Petitioners really are attacking its ability to act as lead agent for a local project if the project has the potential for statewide impact. According to Castaic, this argument goes to the lead agency issue, and is incorrect as a matter of law. Castaic is qualified and required by CEQA to assess impacts that occur outside of its borders in evaluating the Kern water transfer. Citizens of Goleta Valley v. Board of Supervisors, (1990) 52 Cal.3d 553, 573.

The court does not know whether Petitioners really are attacking Castaic's expertise or the adequacy of its assessment of SWP impacts from the Kern transfer. The reason is that Petitioners' arguments are conclusionary and unsupported by analysis, authority, or many facts. Petitioners' obligation was to point out what is wrong with the analysis, or what has been omitted that was required. An issue raised without analysis or authority lacks foundation and need not be addressed. Arcadia, 135 Cal.App.4th at 1429, 1431. The court has no obligation to search the EIR's cumulative analysis section to look for defects. Their general objection requires only a general response that Castaic's cumulative impacts analysis is adequate.

4. The "No Project" Alternative

Petitioners argue that the 2004 EIR fails to address the "no project" alternative, an issue particularly important because it was the principal defect in the PCL Monterey Agreement EIR. As the PCL court stated, a "no project" alternative must discuss "existing conditions" and "what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." 83 Cal.App.4th at 912. The Monterey Agreement EIR did not discuss the projections related to land planning, demand for water, and other impacts of reducing entitlements pursuant to Article 18(b). Id. at 919. Petitioners contend that the 2004 EIR does discuss the water supply reliability impacts of invoking Article 18(b), but not the statewide impacts the PCL court found so crucial.

The short answer to Petitioners contention is that 2004 EIR addresses a different project than the Monterey Amendments. The "no project" alternative for any EIR requires a comparison of the impacts of approving the project with the effect of not doing so. Guidelines §15126.6.(e)(1); Mira Mar Mobile Community v. City of Oceanside, (2004) 119 Cal.App.4th 477, 488-89. The only "no project alternative" that Castaic is obligated to consider is the alternative of "no Kern water transfer." Castaic has addressed this alternative by discussing groundwater sources of water and a possible moratorium. AR 291-4. Petitioners do not quibble with this analysis. But Castaic had no obligation to consider "no Monterey Amendments" as a no project alternative.[28] Indeed, it would make no sense to evaluate "no Monterey Amendments" as an alternative to the Kern water transfer.[29]

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[28]Of course, the 2004 EIR is obligated to consider invocation of Article 18(b) as a reasonably foreseeable environmental impact, and the adequacy of it doing so has been discussed.

[29]For a similar reason, Castaic need not analyze alternative uses of the SWP water in a "no project" alternative. CEQA does not require consideration of alternatives that do not meet the project objective; *i.e.*, delivery of water to Castaic's customers. *See* Guidelines §15126.6(c).

5. Post-Hoc Rationalization

Petitioners also suggest that the 2004 EIR is a post-hoc rationalization for "a decision already made." Pet. Op. Br. at 18. Pre-judging environmental decisions in order to accomplish a project is prohibited under CEQA. An agency may not commit to a project before CEQA review is completed because a fundamental purpose of an EIR is to provide decision-makers with information they can use in deciding whether to approve a project. Therefore, post-approval environmental review has been condemned. Laurel Heights, 47 Cal.3d at 394. *See* Residents Ad Hoc Stadium Com. v. Board of Trustees, (1979) 89 Cal.App.4th 274, 285. Of course, an agency contemplating a project may be presumed to favor the project, and CEQA assumes this to be inevitable. Therefore, it builds in procedural protections to insure that the decision-maker does not fail to note the facts and arguments by opponents to the EIR. Id. at 285.

Castaic had completed the transfer and performed under it for several years prior to preparing the 2004 EIR. Plainly, it desires to keep the transfer and not change it. When the 1999 was found deficient, Castaic was required under CEQA to perform a "fresh look" at the transfer's environmental impacts. With the exception of the analytical hole discussed above, it has done so. *See* City of Vernon v. Board of Harbor, (1998) 63 Cal.App.4th 677, 1523 (adequacy of EIR overcomes contention that it was a post-hoc rationalization).

G. Conclusion

Castaic may act as the lead agency for the Kern water transfer. The 2004 EIR was properly prepared except for one defect – it fails to show the analytic route as to how and why the three allocations of pre-Monterey Amendments, pre-Monterey Amendments without Article 18, and post-Monterey Amendments are relevant and would occur. The court offers no opinion on whether this failure must be rectified by addendum (Guidelines §15164), a subsequent EIR, a supplement to EIR, or a new EIR. That determination is Castaic's to make in the first instance.

The Petition for Writ of Mandate is granted in part. A writ shall issue commanding Castaic to set aside its approval of the 2004 EIR and comply with CEQA, either through the preparation of a new EIR or other environmental documentation, such as an addendum, addressing the analytic route of the three water allocations. Castaic is not directed to set aside the Kern water transfer. Judgment shall be entered in favor of Petitioners solely on this issue.

This shall serve as the court's proposed statement of decision in compliance with CRC 232(c). If there are no written objections filed, the statement shall be final. As Respondents have prevailed on all but one issue, Castaic's council is ordered to prepare a writ of mandate and judgment consistent with this decision, and serve it on all other counsel for approval as to form. After 10 days, Castaic may file the proposed writ and judgment with the court, along with a declaration stating the nature and extent of any objections received. An OSC re: judgment shall be set for April 23, 2007.

Dated: April 2, 2007

J. Chalfant

Superior Court Judge
JAMES C. CHALFANT

ORIGINAL

FILED
LOS ANGELES SUPERIOR COURT
MAY 22 2007 F.D.
JOHN A. CLARKE, CLERK
A. Fajardo
BY A. FAJARDO, DEPUTY

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CIVIL OPERATIONS

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CASE NO.: BS 098724

Assigned for All Purposes:
Honorable James Chalfant
Department 13

(Consolidated Cases)
[Transferred from Ventura County Master File No. CIV 231588 (consolidated with Ventura County Case No. CIV 231606)]

~~[PROPOSED]~~ **JUDGMENT GRANTING PEREMPTORY WRIT OF MANDATE**

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

The above-entitled consolidated matter came on regularly for hearing on March 19, 2007, before the Honorable James C. Chalfant. Petitioner, Planning and Conservation League ("PCL") appeared by and through Antonio Rossman and Roger B. Moore of Rossman & Moore, LLP. Petitioner, California Water Impact Network ("CWIN") appeared by and through Babak Naficy of the Law Offices of Babak Naficy. Respondent, Castaic Lake Water Agency ("Castaic") appeared by and through David D. Boyer of McCormick, Kidman & Behrens, LLP; R. Bruce Tepper of R. Bruce Tepper, ALC; and James G. Moose of Remy, Thomas, Moose and Manley, LLP. Real Party in Interest California Department of Water Resources ("DWR") appeared by and through Deputy Attorney General Marilyn H. Levin, and Deputy Attorney General Deborah A. Wordham. Real Party in Interest Kern County Water Agency ("Kern") appeared by and through Clifford W. Schulz of Kronick, Moskovitz, Tiedmann & Girard, APC. Real Party in Interest Wheeler Ridge-Maricopa Water Storage District ("Wheeler-Ridge") appeared by and through Steven M. Torigiani of the Law Offices of Young Wooldridge, LLP.

At that time the Court heard arguments of counsel and examined key portions of the Administrative Record certified by Castaic and submitted by the parties. After considering the filings of all parties, the oral arguments of counsel, and the records and files in this case, the court took the matter under submission. After further deliberations and further review of applicable legal authorities and key documents in the Administrative Record, the Court prepared a proposed Statement of Decision, which was filed and served by the Court on April 2, 2007. The Court entered its final Statement of Decision (attached hereto as Exhibit "A," and incorporated herein by reference) on May 22, 2007, after reviewing Petitioners' April 17, 2007 objections to the proposed Statement of Decision.

IT IS THEREFORE ORDERED that:

1. The 2004 EIR having been properly prepared in all other respects, Judgment shall be entered in favor of Petitioners in this proceeding solely on the issue of the failure of the EIR to show the analytic route as to how and why the three allocations of pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18 (b) cutbacks and post-Monterey Amendments are relevant and would occur.

2. A Peremptory Writ of Mandate shall issue commanding Castaic to set aside its

certification of its 2004 EIR and to comply with CEQA consistent with the Statement of Decision.

3. The Peremptory Writ of Mandate shall not direct Castaic to set aside the Kern Water Transfer, nor shall it limit or control the discretion legally vested in Castaic to determine the appropriate manner to comply with CEQA .

3. The Court retains jurisdiction over this matter by way of return to the Peremptory Writ of Mandate.

DATED: 5/22/07

HONORABLE JAMES CHALFANT
JUDGE OF THE SUPERIOR COURT

Presented by: McCORMICK, KIDMAN & BEHRENS, LLP
Russell G. Behrens,
David D. Boyer

DAVID D. BOYER
Attorneys for Respondent
CASTAIC LAKE WATER AGENCY

California Water Impact Network v. Castaic Lake Water Agency
BS 098724

Statement of Decision on Petition for Writ of Mandate

FILED
LOS ANGELES SUPERIOR COURT
APR 0 2 2007
JOHN A. CLARKE, CLERK
A. Fajardo
BY A. FAJARDO, DEPUTY

Petitioners California Water Impact Network ("CWIN") and Planning and Conservation League ("PCL") petition for writ of mandate under California Environmental Quality Act ("CEQA"). The court has read and considered the moving papers, oppositions, and reply, heard oral argument, and renders the following decision.

A. Statement of the Case

Petitioner CWIN commenced its petition for writ of mandate in Ventura County Superior Court on January 24, 2005. The petition alleges that on December 23, 2004, the Castaic Lake Water Agency ("Castaic"), a public water agency and water wholesaler that treats and delivers water to water retailers in Los Angeles and Ventura Counties, approved the permanent transfer of 41,000 acre feet per year from Real Party in Interest Kern County Water Agency ("Kern") and its member unit in Kern County, Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), to Castaic (the "Kern water transfer," the "Kern transfer," or the "transfer"). Castaic also purported to certify the Environmental Impact Report ("EIR") for the project (the "2004 EIR" or the "EIR"). Petitioner claims the Kern water transfer "threatens to promote large-scale urban sprawl in Ventura and Los Angeles Counties, while diverting water from important environmental and agricultural uses in Kern County forever." Petitioner alleges that the 2004 EIR is premature, and fails to comply with CEQA.

The petition alleges a cause of action for violation of CEQA in that Real Party in Interest California Department of Water Resources ("DWR"), not Castaic, should have been the lead agency for the 2004 EIR, which does not adequately describe the background on which the project is based, fails to disclose a reliance on an invalid Urban Water Management Plan, fails to adequately describe alternatives to the project, including a "no project" alternative, fails to discuss growth inducement, and inaccurately states the availability of water availability.[1]

On January 24, 2005, PCL filed its own petition for writ of mandate against Castaic in Ventura County Superior Court. The PCL petition alleges a violation by Castaic in recording a Notice of Determination on December 23, 2004, certifying the 2004 EIR and rendering its approval of the Kern water transfer. The petition purports to allege five "causes of action" for violation of CEQA in the 2004 EIR based on Castaic stealing DWR's duty to be the lead agency for the EIR, certification of a defective EIR, approval of inadequate findings, erroneous presentation of the project as already complete, and "prejudicial abuse of discretion."

On June 22, 2005, upon motion by Castaic, the Ventura County Superior Court (the Honorable Frederick H. Bysshe, Jr.) ordered the transfer of both petitions, which had been consolidated, to Los Angeles. On March 27, 2006, the case was reassigned to this court.

On June 27, 2006, the court heard the demurrers of Castaic and Real Party in Interest Kern to the consolidated petitions. The court ruled that the petitions were timely filed and were

[1]On CWIN's oral motion, the petition's second and third causes of action have been dismissed. As a result, CWIN's petition solely concerns Castaic's compliance with CEQA in the 2004 EIR.

EXHIBIT "A"

not barred under the doctrine of *res judicata*. The court noted that the Kern water transfer agreements are valid. While principles of *collateral estoppel* barred Petitioners from re-raising issues resolved by the Second District with respect to the 1999 EIR, this conclusion did not foreclose the petitions and the demurrers were overruled.

On July 16, 2006, the court denied Castaic's motion for a legal determination under principles of *collateral estoppel* and party admission that Castaic is the proper lead agency for preparation of the EIR for the Kern water transfer. However, Petitioners are bound by their concession that Castaic may act as the lead agency at some point for an EIR on the Kern water transfer.

B. Preliminary Issues

1. Standing and Timeliness

Petitioner PCL alleges that it is a non-profit corporation devoted to environmental protection. PCL Pet. at ¶6-7. Some of PCL's members live in the area affected by the Kern water transfer. PCL Pet. at ¶8. Petitioner CWIN alleges that it is a nonprofit public benefit corporation the purpose of which is to protect California's environment. CWIN contends that it is impacted by the Kern water transfer because its members reside in and use the Santa Clara River watershed, which is impaired by the water transfer. CWIN Pet. at ¶9. Thus, Petitioners contend that they are impacted by the project and have standing to raise the issues herein. Respondents do not contest Petitioners' standing. *See* Waste Management of Alameda County, Inc. v. County of Alameda, (2000) 79 Cal.App.4th 1223, 1233-34.

The actions are timely on CEQA issues, each having been filed on January 24, 2005, within 30 days of Castaic's Notice of Determination that the 2004 EIR had been certified, filed in various counties between December 23 and December 27, 2004. *See* Pub. Res. Code §21167(c).

2. The Administrative Record

Castaic has certified the administrative record. Pub. Res. Code §21167.6; LASC 9.24(e). The record was received in evidence at trial.

Castaic and Kern, and DWR separately ask the court to judicially notice various records. Judicial notice is the acceptance by a court without formal proof of the existence of a matter of law or fact that is relevant to an issue in the case. People v. Rowland, (1992) 4 Cal.4th 238, 268, n.6. Certain documents are subject to judicial notice. Ev. Code §451, 452. Even where subject to judicial notice, however, a document must be relevant. Id.

The California Supreme Court decision in Western States Petroleum Assn. v. Superior Court, ("Western States") (1995) 9 Cal.4th 559, 573, n.4, provides that extrinsic evidence is generally not admissible for a traditional mandamus challenging a quasi-legislative agency action. The exclusion of extrinsic evidence in a traditional mandamus action is essentially the exclusion of irrelevant evidence. Extrinsic evidence is generally not admissible for a traditional mandamus challenging a quasi-legislative agency action. Id. Such evidence may be admissible in a narrowly construed exception in which (1) the evidence in question existed before the agency made the decision, and (2) the evidence could not have been presented to the agency in the first instance in the exercise of reasonable diligence. Id. at 578. The purpose of limiting extra-record evidence is that the free use of such evidence would invade the deference to which the legislative

branch is entitled under the constitutional separation of powers. If the courts freely considered extra-record evidence in mandamus cases, the highly deferential substantial evidence standard would be turned into a *de novo* standard where the courts in effect would decide not whether an administrative decision was supported by the evidence before the agency but instead whether it was the wisest and best decision according to the courts. Id. at 572.

Castaic asks the court to judicially notice: (1) the unpublished appellate decision in Friends of the Santa Clara River v. Castaic Lake Water Agency, 2003 Cal.App. Unpub. LEXIS 11239, dated December 1, 2003 ("Friends II"), and (2) the unpublished appellate decision in California Water Network v. Castaic Lake Water Agency, 2006 Cal.App. Unpub. LEXIS 2452, dated March 23, 2003.[2] The existence of these court decisions is subject to judicial notice. Ev. Code §452(d).[3]

DWR asks the court to judicially notice (1) Amendment No. 19 to the Water Supply Contract between it and Castaic dated May 28, 2003, and (2) Notice of Preparation of EIR for the Monterey Amendment dated January 24, 2003. DWR contends that these documents are official acts of a California agency subject to judicial notice under Ev. Code section 452(c) and (d). The Notice of Preparation is an official act of DWR and is judicially noticed. However, Amendment No. 19 is not. Official acts should be limited to regulations, public announcements, and other actions the existence of which is beyond dispute. A well informed person has no way of knowing whether Amendment No. 19 is authentic and valid. Nor is it a court record under section 452(d). DWR's request for judicial notice of Amendment No. 19 is denied.

C. Statement of Facts

1. SWP

In 1951, the Legislature authorized construction of a state water storage and delivery system. Planning & Conservation League v. Department of Water Resources, (2000) 83 Cal.App.4th 892, 898. The Legislature subsequently authorized the State Water Project ("SWP"), a complex system of 28 reservoirs and dams, 26 power and pumping plants, and 600 miles of canals and aqueducts to deliver 4.23 million acre-feet of water annually to Central and Southern California. The primary source for the SWP is the drainage of the Feather River, a tributary of the Sacramento River in Northern California (hereinafter, the "Delta").

DWR is the state agency charged with the statutory responsibility to build, manage, and operate the SWP. Essentially, DWR is the wholesale provider of water to middlemen agencies. In 1961, DWR entered into individual contracts with various agricultural and urban water suppliers in the State, referred to as State Water Contractors. *See* Water Code §12937. There are 29 agencies or districts that currently are State Water Contractors.

The SWP water contracts entitled the contractors to receive an annual amount of SWP

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[2]Castaic also supplied the court with copies of its decisions on demurrer and motion for legal determination in this case, which need not be judicially noticed.

[3]Real Party Wheeler purports to join in Castaic's request for judicial notice. In its ruling on the demurrers, the court informed Wheeler of the futility of a joinder as merely a cheerleading effort. No further discussion of the purported joinder is necessary.

water in exchange for a proportionate share of financing and maintaining the SWP facilities. Each water contract contains provisions for both allocation of the amount of water available each year and costs among the contractors. Each contract identifies a Table A amount, the annual maximum amount of water which DWR agrees to deliver, if available for delivery, to each SWP contractor on an annual basis. Delivery of the Table A amount is not assured, but rather provides the basis for proportional allocation of available water among contractors. The Table A amount is specified as either agricultural or urban (M&I). Each contract also includes Article 40, which permits water transfers between contractors, and Article 41, which requires DWR approval of any transfer subject to reasonable terms and conditions. AR 2356.

Each contractor annually submits a request to DWR for water delivery in the following year, up to the amount in Table A. In a year when DWR is unable to deliver the total of contractor requests, deliveries to all contractors will be reduced. The current Table A totals are 4.17 million acre-feet per year.[4] In fact, given existing facilities and contractor demands, the SWP can only deliver an average of 2.96 million acre-feet per year.

2. The Monterey Agreement

Historically, the delivery of less than Table A totals was not a significant problem because contractor demand was less than the Table A amounts. However, in the late 1980's and early 1990's, a drought led to SWP deliveries in amounts below that requested by contractors. Articles 18(a) and (b) of the SWP water contracts addressed DWR's temporary and permanent inability to deliver the water allocations listed in Table A of the contracts by requiring agricultural contractors to accept a reduction in water first before any remaining reduction was shared by urban contractors. In 1990, agricultural contractors received only half their requested water and none in 1991. Because contractors pay their proportionate share of fixed costs regardless of how much water is delivered, the agricultural contractors were paying for water they were not receiving and they were displeased. As a result, urban and agricultural water contractors clashed over DWR's delivery obligations and the proper interpretation of Article 18. AR 45-46.

In December 1994, five State Water Contractors and and DWR reached agreement on a broad set of fourteen principles (the "Monterey Agreement"). Among other things, the Monterey Agreement changed the allocation between agricultural and urban contractors of entitlements to SWP water. The Monterey Agreement eliminated Article 18 and specified that all SWP water was to be allocated in proportion to Table A amounts. Paragraph 24 of the Monterey Agreement provides for the permanent transfer of 130,000 acre-feet from certain willing agricultural contractors, including KWCA, to urban contractors, as implemented by individual agreement. AR 2515. It also provides that individual contractors may transfer entitlements among themselves beyond the 130,000 acre feet proposed, with DWR expeditiously executing any necessary documents and approving all such contracts. Other provisions of the Monterey Agreement include a revision of water allocations during shortages, eliminating the "agriculture first" provision, and retirement of 45,000 other acre-feet of entitlement by agricultural contractors.

[4]An "acre-foot" is the amount of water that would cover one acre one foot deep.

The Monterey Agreement provides that individual SWP contracts could be amended to conform to it. Over the next two years, 27 of the 29 Water Contractors amended their SWP contracts to implement the principles of the Monterey Agreement (collectively, the "Monterey Amendments").

In 1995, a State Water Contractor, Central Coast Water Authority ("Central"), acted as lead agency and certified a program EIR analyzing the environmental impacts of the Monterey Agreement. This program EIR also addressed Paragraph 24 (Article 53 in the Monterey Amendments) water transfers, including the Kern water transfer. In late 1995, PCL filed a lawsuit in Sacramento Superior Court challenging the program EIR, Planning & Conservation League v. Department of Water Resources, ("PCL").

3. The Kern Water Transfer Agreement

Castaic is a State Water Contractor created by the California Legislature. Its mandate is to purchase and deliver sufficient supplies of water to serve the needs of the Santa Clarita Valley. *See* Swanson v. Marin Municipal Water District, (1976) 56 Cal.App.3d 512, 524 (water district has obligation to augment available water to meet increasing demands). Castaic diverts its SWP water from the West Branch of the California Aqueduct. Castaic is one of the Water Contractors entering into the Monterey Amendments (Amendment 17 to Castaic's SWP contract).

Kern County Water Agency ("KCWA") is a special district formed by the Legislature in 1961. Wheeler Ridge is a special district formed in 1959 to provide supplemental water to agricultural lands in Kern County and is located immediately north and east of Castaic. KCWA has contracts with Wheeler Ridge and other member agencies, for KCWA's SWP water.[5]

In March 1999, Castaic entered into an agreement to purchase from Wheeler Ridge, subject to KCWA's consent, 41,000 acre-feet per year of SWP water (the Kern water transfer). The price for the transfer was $47 million in debt instruments purchased by private investors. The purpose of the transfer is to permit Castaic to serve the water demands of existing users, as well as meet a portion of future water demand from anticipated growth within the Castaic service area. AR 16. The Kern water transfer is the largest transfer under Article 53 of the Monterey Amendments, and it counts towards the 130,000 acre-feet limit. In their transfer agreement, both sides warranted that there was no pending or threatened litigation other than PCL that could affect the 41,000 acre feet SWP entitlement. AR 2562-63.[6]

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[5]In 1998, another KCWA member, Belridge Water Storage District, certified an EIR on the environmental effects of transferring 130,000 acre-feet of SWP water to unidentified purchasers. This EIR was not challenged.

[6]Castaic has been planning since 1987 to increase the supply of water to Santa Clarita Valley. At that time, Los Angeles County General Plan forecast substantial population growth in the Santa Clarita Valley. In 1988, Castaic adopted a Capital Program and Water Plan (the "Capital Program") to address the purchases, construction, and improvements necessary to meet the anticipated water demand. The Capital Program called for the purchase of SWP water from districts willing to sell, including Wheeler Ridge, and the storage of water for later use during drought conditions at Semitropic Groundwater Storage District's ("Semitropic") basins. AR

DWR's approval of the Kern water transfer was required under Articles, 15, 41, and 56 of the SWP contracts. On March 31, 1999, DWR approved the transfer by entering into Amendment 18 of Castaic's SWP contract. Amendment 18 adds Article 53(j), which provides that "in accordance with Article 53(a)" of the Monterey Amendments, Castaic's Table A annual entitlements were increased by 41,000 acre-feet. AR 2545-47. DWR and KCWA, which consented to the transfer of its water, also entered into Amendment 28 to KCWA's SWP contract, an amendment which reduced KCWA's entitlement by 41,000 acre-feet. Based on these amendments, DWR has allocated SWP water to Castaic since 1999 based on a total Table A amount of 95,000 acre-feet -- Castaic's original Table A 54,000 acre-feet plus the 41,000 acre-feet from the Kern water transfer.

On March 29, 1999, Castaic, acting as lead agency, certified an EIR for the Kern water transfer. This 1999 EIR tiered off the 1995 Monterey Amendment program EIR, the Belridge EIR, and Castaic's own 1988 EIR for the Capital Program. In April 1999, Castaic's EIR for the Kern water transfer was challenged in Friends of the Santa Clara River v. Cataic Lake Water Agency, BS056954 ("Friends"). On August 16, 2000, the trial court entered judgment, denying the petition in its entirety.

4. The PCL and Friends Decisions

In September 2000, the Third Appellate District in PCL found that DWR was the only entity with the "statewide perspective and expertise" to serve as lead agency for the Monterey Agreement program EIR. Because "the allocation of water to one part of the state has potential implications for distribution throughout the system," the court recognized DWR's principal responsibility to "facilitate the water transfers allowed under the Monterey Agreement." 83 Cal.App.4th at 907. The use of Central as lead agency for the Monterey Agreement program EIR was inappropriate. Id. at 907.

This lead agency error was not harmless because the EIR also was defective. Perhaps as a consequence of Central's lack of statewide expertise, the EIR failed to properly discuss a "no project" alternative, including the environmental impact of implementing the pre-Monterey Agreement Article 18(b)'s permanent water shortage provision. Id. at 918. This was particularly important because local land use planners rely on the "paper water" entitlements in Table A

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Pursuant to the Capital Program, Castaic permanently acquired 12,700 acre-feet of SWP Table A water in 1991 from Devil's Den Water District, a SWP contractor immediately north of Castaic. This transfer was subject to DWR approval, which per Article 41 of the SWP contracts could not be unreasonably withheld. DWR approved the transfer, noting that the transferred water remained labeled for "agricultural purposes" for purposes of delivery shortages.

Also pursuant to the Capital Program, in 2002 Castaic entered into a groundwater storage or "banking" agreement with Semitropic. This action was challenged under CEQA on the basis that the Monterey Agreement required DWR to conduct an environmental review. The challenge was rejected by the appellate court, which held that DWR had no jurisdiction over Castaic's management of water; DWR merely schedules SWP water delivery to Castaic. Cal. Water Network v. Castaic Lake Water Agency, (2006) 206 Cal.App. Unpub. LEXIS 2452, 9.

rather than real, deliverable water. The question was what impacts were reasonably foreseeable from eliminating Article 18(b)'s solution to permanent water shortage? Id. at 914-15. The PCL court held that the EIR, which lacked simulation models and projections relating to land use planning and demand for water, did not adequately address this issue. Id. at 919. It directed the Sacramento Superior Court to retain jurisdiction over the action until a new EIR was prepared and certified.

Based on the Third District's PCL decision, on January 10, 2002, the Second Appellate District reversed the judgment in Friends and directed the trial court to issue a writ of mandate compelling Castaic to set aside certification of its EIR. Friends, (2002) 95 Cal.App.4th 1373. The reversal was based solely on the fact that Castaic's EIR had been tiered upon the now inadequate Monterey Agreement program EIR. The Second District rejected all of the other challenges to Castaic's EIR, finding them to be without merit. The appellate court noted that Castaic may be able to cure the defect by waiting for DWR to comply with the Third District's directive in PCL by preparing a new program EIR. Castaic could issue a subsequent EIR, a supplement to EIR, or addendum to EIR, tiering upon the new Monterey Agreement EIR.

The Friends appellate decision concluded as follows: "The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until Respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under [Pub. Resources Code] section 21168.9."

On October 25, 2002, after remand from the court of appeal, the Friends trial court issued a Peremptory Writ of Mandate and Judgment on Remand, retaining jurisdiction until Castaic certifies an EIR that complies with CEQA and is consistent with the views expressed by the Second District. The trial court did not direct Castaic to set aside its approval of the Kern water transfer and denied the petitioner's request to enjoin Castaic from using any of the 41,000 acre feet of additional water allotted to it by the Kern water transfer. The trial court did state that the injunction request could be renewed upon a showing that the water was actually used for an improper purpose (irreversible new development).

5. Monterey Plus

On June 6, 2003, the Sacramento Superior Court approved a settlement between the parties in PCL. That settlement, known as "Monterey Plus," provides that the Monterey Agreement can proceed on an interim basis. In exchange, DWR agreed, among other things,[7] to prepare a new program EIR for implementation of the Monterey Agreement. This new EIR would include (1) information on water deliveries during the drought and recent historical period, (2) an analysis of a no project alternative, including the environmental impact of Article 18's water shortage provisions, (3) analysis of environmental impacts from changes in SWP operations and deliveries resulting from implementation of the Monterey Agreement, (4) analysis

[7]Some of the other provisions include biennial reports on project reliability, land use restrictions on the Kern Water Bank, new guidelines for permanent water transfers, new procedures for public involvement in contract changes, and funding for watershed restoration and new technical studies. AR 45048-49.

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of environmental impacts of seven already completed water transfers from KWCA and member units totaling 70,000 acre-feet (Attachment E), which the parties recognized were "final," and of the Kern water transfer, which the parties acknowledged was being challenged in the pending Friends litigation in Los Angeles Superior Court, and (5) analysis of the environmental impacts from implementation of Monterey Plus. AR 48557-59. With respect to the Kern water transfer, the Monterey Plus parties agreed that "jurisdiction with respect to [Friends] should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." The Monterey Plus did not require DWR to re-approve or disapprove any transfer.

6. The Friends II Decision

The Second District upheld the Friends trial court's decision not to grant injunctive relief for the Kern water transfer on December 1, 2003, in unpublished case no. B164027 ("Friends II"). PCL had filed an *amicus* brief supporting the petitioner in Friends II, pointing out that the Monterey Plus settlement now existed and arguing that the Friends decision required the trial court to rely on the status of PCL litigation, including the new Monterey Agreement program EIR DWR was to prepare, in deciding injunctive relief. The Friends II appellate court stated that PCL was wrong; it merely had suggested, not required, that the trial court could determine and rely on the status of the PCL case in deciding injunctive relief.

7. The 2004 EIR

After Friends, Castaic decided to prepare a revised EIR prior to DWR's preparation of a Monterey Amendment EIR. Castaic was driven by a concern that the Friends petitioner and others would use the decertification of its 1999 EIR to cloud its right to the transferred water, as well as Castaic's duty to its customers to complete the environmental documentation and finalize the Kern water transfer.

In June 2004, Castaic prepared and circulated a draft EIR that tiered only on Castaic's 1988 Capital Program EIR. Castaic concluded that it was the lead agency because it has the principal responsiblility for carrying out and implementing the project. Because the transfer is between neighboring SWP contractors, involving the withdrawal of water from a single branch of the Aqueduct, Castaic concluded that the transfer has no significant impacts on SWP operations or the water diverted from the Delta. *See* AR 13-14.

PCL served comments to the draft EIR on August 16, 2004. These comments criticized the use of Castaic as lead agency, arguing that Castaic's review was "premature" and "likely to operate at cross-purposes with DWR's statewide review." AR 1959. PCL contended that DWR, not Castaic, was required to be the lead agency under the PCL decision. Only DWR's expertise could analyze the changes in the amount of supplies available, the location and timing of deliveries, and changes in the SWP's conveyance and storage facilities for all of the proposed transfers, including the Kern water transfer. AR 1962. CWIN also timely expressed concern about Castaic's lack of authority to act as lead agency, and the potential for conflict with DWR's role. AR 578-580.

DWR, acting as a responsible agency under CEQA, commented on the draft EIR. It stated that the "document adequately and thoroughly discusses the proposed project and its

impacts. The [draft]EIR discusses the effects of the project on the environment and State Water Project (SW) and uses baseline conditions consistent with those being considered for inclusion in [DWR's EIR]. The draft also "adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations." DWR acknowledged that Castaic's EIR uses a model, DWRSIM, to assess the potential impact associated with the Kern transfer and that DWR's EIR will use a newer model, CALSIM II. DWR indicated that the use of a different computer model may cause slight changes in results, which may lead DWR to different conclusions than those made by Castaic in its EIR. Despite this fact, DWR concluded that the draft EIR adequately discusses the reliability of SWP, pre- and post- Monterey Amendments conditions, future conditions, and SWP operations. AR 564-65.

Castaic rejected Petitioners' concerns, and relied on DWR's comments to refute objections that its draft EIR will be inconsistent with the yet to be prepared DWR program EIR. AR 961-4. Castaic adopted findings, a mitigation monitoring program and statement of overriding considerations and certified a final EIR (the 2004 EIR).[8] The 2004 EIR describes Castaic's water program for the future needs of Santa Clarita Valley, the procedural history of the project (including the 1999 EIR), and the fact that the Kern water transfer has been implemented and ongoing since 1999. It uses two separate baselines for the project setting and evaluates environmental impacts of the Kern water transfer on the SWP, Castaic, and Wheeler Ridge. In discussing these impacts, the 2004 EIR considers three SWP scenarios: (a) with the Monterey Agreement, (b) without the Monterey Agreement, and (c) without the Monterey Agreement and with Article 18(b) permanent shortages. The EIR uses the DWRSIM model and concludes no significant direct environmental impacts will occur as a result of the project. There would, however, be indirect growth impacts as a result of water provided by the project.

8. The Petitioners Take Over from the Friends Petitioner

On January 24, 2005, CWIN and PCL filed separate petitions for writ of mandate in Ventura County concerning Castaic's compliance with CEQA in the 2004 EIR, and other issues.

On February 1, 2005, the Friends petitioner dismissed the action with prejudice. On February 7, 2005, the trial court in Friends held a hearing on Castaic's *ex parte* application to vacate the dismissal with prejudice and to discharge the writ of mandate. Castaic argued that, by dismissing, the petitioner was attempting to get the clerk, through ministerial act, to divest the court of its continuing jurisdiction over the 2004 EIR prepared in response to the court's peremptory writ of mandate. Instead, the Friends petitioner was passing the baton to CWIN and PCL for a challenge to the 2004 EIR. The trial court declined to set aside the dismissal, stating that whether the Ventura proceedings were a continuation of the Friends lawsuit was an issue of fact for the Ventura (now this) court.

On March 5, 2005, Castaic petitioned the Second Appellate District for a writ of mandate with respect to the trial court's refusal to vacate the dismissal, arguing that the trial court violated Pub. Resources Code section 21168.9 (stating that the trial court shall maintain jurisdiction over the agency's proceedings until the court has determined that the agency has complied with

[8]On December 30, 2004, Castaic filed its return to the peremptory writ of mandate in Friends.

CEQA) because it had not yet determined that the 2004 EIR complied with CEQA Yet, under CEQA, a trial court that orders preparation of a new EIR must retain jurisdiction for a final determination of the EIR's validity.

On April 14, 2005, the Second Appellate District denied Castaic's petition for "failure to demonstrate that the 'retain jurisdiction' provision of Public Resources Code section 21168.9, subdivision (b), abrogates the entitlement to voluntary dismissal conferred by Code of Civil Procedure section 581, subdivision (b)(1)."[9]

D. CEQA

1. Standard of Review

A party may seek to set aside an agency decision for failure to comply with CEQA by petitioning for either a writ of administrative mandamus (CCP §1094.5) or of traditional mandamus. CCP §1085. A petition for administrative mandamus is appropriate when the party seeks review of a "determination, finding, or decision of a public agency, made as a result of a proceeding in which by law a hearing is required to be given, evidence is required to be taken and discretion in the determination of facts is vested in a public agency, on the grounds of noncompliance with [CEQA]." Pub. Res. Code §21168. This is generally referred to as an "adjudicatory" or "quasi-judicial" decision. Western States Petroleum Assn. v. Superior Court, ("Western States") (1995) 9 Cal.4th 559, 566-67. A petition for traditional mandamus is appropriate in all other actions "to attack, review, set aside, void or annul a determination, finding, or decision of a public agency on the grounds of noncompliance with [CEQA]." Where an agency is exercising a quasi-legislative function, such as by adopting a rule or entering into a contract, it is properly viewed as a petition for traditional mandamus. Id. at 567; Pub. Res. Code §21168.5.

At issue here is a CEQA challenge to a quasi-legislative action recorded by Castaic in a December 23, 2004 Notice of Determination approving the project, certifying the 2004 EIR, and adopting findings, a mitigation monitoring program, and a statement of overriding considerations. This procedural setting, where no administrative hearing was held or required, is governed by traditional mandamus. In determining whether to grant a petition for traditional mandamus in a CEQA case, the court may consider only whether there was a prejudicial abuse of discretion. Public entities abuse their discretion under CEQA if the agency has not proceeded in a manner required by law or if its determination or decision is not supported by substantial evidence. Western States, 9 Cal.4th at 568; Pub. Res. Code §21168.5.[10]

This requires "scrutiny of the alleged defect" depending on whether the claim is predominately "improper procedure or dispute over the facts." Vineyard Area Citizens for

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[9]The Second District later dismissed Castaic's appeal from the Friends dismissal, finding that the voluntary dismissal was not appealable. *See* H.D. Arnaiz, Ltd. v. County of San Joaquin, (2002) 96 Cal.App.4th 1357, 1364-67.

[10]The standard of review for traditional mandamus in a non-CEQA case is governed by an "arbitrary and capricious" standard, not a "prejudicial abuse of discretion" standard. The CEQA standard is the more stringent inquiry. Western States, 9 Cal.4th at 574.

Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412, 435. Whether Castaic is the proper lead agency is an procedural issue of law for the court. PCL, 83 Cal.App.4th at 905-06. Similarly, as Petitioners argue (Pet. Supp. Resp. Br. at 5), whether Castaic's 2004 EIR failed to provide certain required information and, as a result, presents uncertainties about the finality of the Kern water transfer is failing "to proceed in a manner required by CEQA" and an issue of law. Vineyard, 40 Cal.4th at 435. These issues require "a critical consideration, in a factual context, of legal principles and their underlying values." Harustak v. Wilkins, (2000) 84 Cal.App.4th 208, 212.

On the other hand, whether Castaic abused its discretion in the 2004 EIR's findings must be answered with reference to the evidence in the administrative record. This standard requires deference to the agency's factual and environmental conclusions based on conflicting evidence, but not to issues of law. Laurel Heights Improvement Assn. v. Regents of University of California, ("Laurel Heights") (1988) 47 Cal.3d 376, 393, 409. Argument, speculation, and unsubstantiated opinion or narrative will not suffice.[11] Guidelines, 15384(a), (b). The findings must be supported by "substantial evidence," defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. CEQA Guidelines §15384(a). The question whether substantial evidence exists is a question of law. *See* California School Employees Association v. DMV, (1988) 203 Cal.App.3d 634, 644.

2. CEQA

The purpose of CEQA (Pub. Res. Code §21000 *et seq.*) is to maintain a quality environment for the people of California both now and in the future. Pub. Res. Code §21000(a). "[T]he overriding purpose of CEQA is to ensure that agencies regulating activities that may affect the quality of the environment give primary consideration to preventing environmental damage." Save Our Peninsula Committee v. Montery County Board of Supervisors, (2001) 87 Cal.App.4th 99, 117. CEQA must be interpreted "so as to afford the fullest, broadest protection to the environment within reasonable scope of the statutory language." Friends of Mammoth v. Board of Supervisors, (1972) 8 Cal.3d 247, 259. Public agencies must regulate both public and private projects so that "major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." Pub. Res. Code §21000(g).

The Legislature chose to accomplish its environmental goals through public environmental review processes designed to assist agencies in identifying and disclosing both environmental effects and feasible alternatives and mitigations. Pub. Res. Code §21002.

Under CEQA, a "project" is defined as any activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (1) undertaken directly by any public agency, (2) supported through contracts, grants, subsidies, loans or other public assistance, or (3) involving the issuance of a lease, permit,

[11]As an aid to carrying out the statute, the State Resources Agency has issued regulations called "Guidelines for the California Environmental Quality Act ("Guidelines"), contained in Code of Regulations, Title 14, Division 6, Chapter 3, beginning at section 15000.

license, certificate, or other entitlement for use by a public agency. Pub. Res. Code §21065. The word "may" in this context means a reasonable possibility. Citizen Action to Serve All Students v. Thornley, (1990) 222 Cal.App.3d 748, 753. "Environment" means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance. Guidelines, §21060.5.

The "project" is the whole of the action, not simply its constituent parts, which has the potential for resulting in either direct or reasonably foreseeable indirect physical change in the environment. Guidelines §15378. An indirect physical change must be considered if that change is a reasonably foreseeable impact which may be caused by the project. On the other hand, a change that is "speculative or unlikely to occur is not reasonably foreseeable." Guidelines §15064(d)(3). The term "project" may include several discretionary approvals by government agencies; it does not mean each separate government approval. Guidelines §15378(c).

The EIR is the "heart" of CEQA, providing agencies with in-depth review of projects with potentially significant environmental effects. Laurel Heights, 6 Cal.4th at 1123. An EIR describes the project and its environmental setting, identifies the potential environmental impacts of the project, and identifies and analyzes mitigation measures and alternatives that may reduce significant environmental impacts. Id. Using the EIR's objective analysis, agencies "shall mitigate or avoid the significant effects on the environment... whenever it is feasible to do so. Pub. Res. Code §21002.1. The EIR serves to "demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions." No Oil, Inc. v. City of Los Angeles, (1974) 13 Cal.3d 68, 86. It is not required to be perfect, merely that it be a good faith effort at full disclosure. Kings County Farm Bureau v. City of hanford, (1990) 221 Cal.App.3d 692, 711-12. A reviewing court passes only on its sufficiency as an informational document and not the correctness of its environmental conclusions. Laurel Heights, 47 Cal.3d at 392. An EIR will be upheld if it suffices as an informational document; mandate will issue only if it fails to include relevant information which precludes informed decision-making and informed public participation.

"Choosing the precise time for CEQA compliance involves a balancing of factors. EIRs... should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design and yet late enough to provide meaningful information for environmental assessment." Guidelines, §15004(b). As a general rule, public agencies shall not undertake actions concerning a proposed project that would have a significant adverse effect or limit the choice of alternatives or mitigation measures before completion of CEQA compliance. Guidelines, §15004(b)(2). "[I]n order to achieve the salutary objectives of CEQA the determination of the earliest feasible time to [prepare the CEQA document] is to be made initially by the agency itself, which decision must be respected in the absence of manifest abuse." Mount Sutro Defense Committee v. Regents of University of California, (1978) 77 Cal.App.3d 20, 36, 40.

E. Analysis

CWIN and PCL argue that DWR is required to be the lead agency for the Monterey Amendments project EIR, which will examine all water transfers on a program level. The Kern

water transfer is part of the Monterey Amendments project. Therefore, DWR is the correct lead agency to conduct the environmental review of the Kern water transfer. According to Petitioners, while Castaic may not serve as the lead agency for "first-level" environmental review of the water transfer, it may serve as lead agency for a project level EIR for the Kern water transfer.

1. Validity of the Transfer

At the outset, the court must make clear an issue greatly discussed at hearing. Petitioners contend, and Castaic and Wheeler Ridge strongly dispute, that DWR may "invalidate" the Kern water transfer when it performs the program EIR.

Under contract and validation law, the Kern water transfer contract, entered into in 1999, is valid, has been approved by DWR, and Castaic has paid Wheeler Ridge for it. Neither the parties nor DWR can terminate the Kern transfer contract. Nothing in CEQA permits a public agency to void a contract.

In Kenneth Mebane Rranches v. Superior Court, (1992) 10 Cal.App.4th 276, a flood control district sought to condemn land outside its territory in order to mitigate the environmental impact of a project within its boundaries. The appellate court held that CEQA only requires mitigation of environmental impacts where it is feasible to do so. Where mitigation is infeasible, an agency can always approve a project notwithstanding environmental impacts if it issues a statement of overriding interests. But it cannot take actions that are not legal, and hence infeasible. 10 Cal.App. at 291-92.

Thus, in evaluating the environmental effects of the Monterey Agreement, DWR may impose mitigations that are legal. But it cannot invalidate the Kern transfer. The imposition of illegal mitigations would be infeasible. *See also* Pub. Res. Code §21004 (in mitigating significant environmental impact, agency may only employ powers provided by law).[12]

This does not mean that DWR's Monterey Amendments EIR cannot affect the Kern water transfer. DWR's EIR will consider the environmental impacts of the Kern water transfer in conjunction with the Attachment E transfers which the parties in Monterey Plus agreed were completed and final. DWR conceivably could conclude that these transfers have significant environmental impacts. As a consequence, DWR might have to impose feasible mitigation measures, adopt alternatives, or make a finding of infeasibility and adopt a statement of overriding considerations.[13] If mitigations/alternatives are adopted, they could significantly impact Castaic and Wheeler Ridge. As DWR states, "the contract amendments that effectuated the transfers under the Monterey Amendment[s] do not preclude DWR in its choice of

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[12]The parties disagree on whether the Monterey Amendments are valid and final. That is, they disagree on whether the amendments can be challenged in a reverse validation action separate and apart from CEQA. Resolution of this issue is unnecessary to the court's decision.

[13]At hearing, Petitioners' counsel stated that the parties to Monterey Agreement entered into a joint statement of the possible impacts from the Amendments, citing AR 48628-29. The joint statement at those pages of the record does not discuss possible mitigations; it merely summarizes the terms of Monterey Plus.

alternatives in the Monterey Amendment[s] EIR or mitigation measures that may need to be imposed to reduce significant impacts to less than significant." DWR Br. at 20. DWR gives an example of reducing the amount of SWP water to protect water quality standards for fish in the Delta. Id. at 20. These mitigations could undermine the Kern water transfer.[14] But DWR will not be considering whether the Kern water transfer is valid; it simply does not have the authority to void that transfer. *See* Kenneth Mebane Ranches v. Superior Court, (1994) 10 Cal.App.4th 276, 292.

2. Lead Agency Law

The lead agency under CEQA is the agency that carries out a project or has primary authority for approving a project. Pub. Res. Code 121067; Guidelines §15051; *see* PCL, 83 Cal.App.4th at 904 (DWR, not Central (a State Water Contractor), had principal responsibility for carrying out the Monterey Agreement and should have been lead agency for program EIR). The role and responsibility of the lead agency is "fundamental to the CEQA process as a whole." Guidelines §15050. The identification of the proper lead agency plays a "crucial role" in the division of responsibilities among public agencies reviewing a project. PCL, 83 Cal.App.4th at 903. When determining the appropriate lead agency, the courts look to determine which agency has principal responsibility for the core project activity. Friends of Cuyamaca Valley v. Lake Cuyamaca, (1994) 28 Cal.App.4th 419, 427. The lead agency responsibility is placed upon the agency with power to approve or disapprove the project. Lexington Hills v. State of California, (1988) 200 Cal.App.3d 415, 433. Though one agency has substantial responsibility for a project, it cannot act as lead agency if another agency bears final responsibility. *See* Fullerton Joint Union High School District v. Board of Education, (1982) 32 Cal.3d 779, 795, n.15 (State Board of Education, not county, had final responsibility for school district plan). Where the project is local, such as land use decisions, the agency that has general governmental power over a project is almost always the lead agency. Where two or more agencies are involved in a project, the agency that will carry out the project shall be the lead agency. Guidelines §15051(a).

3. The Impact of the PCL Decision

Petitioners contend that the PCL decision left no doubt that DWR is the appropriate lead agency for a program-level environmental review of the water transfers in the Monterey Agreement, contrasting DWR's statewide expertise with CCWA's "provincial experience." The Monterey Amendments restructure water distribution throughout the state, and the "allocation of water to one part of the state has potential implications for distribution throughout the system." Only DWR has principal responsibility for implementation of the Monterey Amendments. Op. Br. at 11-12; *see* PCL, 83 Cal.App.4th at 904, 908. Since the Kern water transfer is part of the Monterey Amendments, DWR must perform any EIR concerning the Kern water transfer.

Petitioners' argument is a *non-sequitur*. Nothing in PCL requires DWR to perform the environmental review for the Kern water transfer. Certainly, the PCL decision requires that DWR prepare the program EIR for the Monterey Amendments, now Monterey Plus. The

[14]The close cooperation between DWR and Castaic on the 2004 EIR reduces, but does not eliminate, the prospect that DWR will impose alternatives or mitigations.

appellate court's reason for committing this task to DWR is that CEQA requires the lead agency to be the agency with principal responsibility for the project, the project is the environmental review of the Monterey Agreement, and DWR, not CCWA, has principal responsibility for implementing the Monterey Agreement. The decision pointed out that DWR manages the SWP, and has the statewide expertise and perspective to conduct the environmental review of the Monterey Agreement, which statewide project. While CCWA may have had a substantial stake in seeing the Monterey Agreement implemented, it did not have principal responsibility for it. DWR did, and DWR is required to perform the EIR for the Monterey Agreement. 83 Cal.App.4th at 906.

However, the PCL decision does not commit DWR to conduct the EIR for the Kern water transfer, or for any site specific project conducted pursuant to the Monterey Amendments. The PCL decision plainly requires DWR to prepare the program EIR for the Monterey Amendments, and its permanent transfer of 130,000 acre feet of SWP water. But it does not even mention the Kern water transfer, which is a local water transfer of Wheeler Ridge water to a point 60 miles further south in Santa Clarita Valley. The local nature of the project makes Castaic the logical choice to act as lead agency of this transfer, and nothing in PCL requires Castaic to wait for DWR's program EIR. The Kern water transfer is simply a different project from the Monterey Amendments.

Petitioners' concession that at some point Castaic can and should act as the lead agency for the Kern water transfer EIR undermines their argument that PCL committed this task to DWR. The concession shows that Petitioners really are concerned about the timing of this project specific EIR, and not whether it was committed to DWR in the PCL decision. Petitioners contend that Castaic must wait for DWR's Monterey Amendments program EIR and tier off of it for the Kern water transfer EIR. This argument is, as Castaic describes it, that Castaic "jumped the gun" by preparing the 2004 EIR. But the argument implicitly concedes that PCL did not commit the transfer EIR to DWR.

4. The Agency with Principal Responsibility

Even if PCL did not commit environmental review of the Kern water transfer to DWR, Petitioners argue that the Kern water transfer is an integral part of the Monterey Amendments project. This is shown by Monterey Plus, which excludes the Kern water transfer from the list of transfers designated as "final" and recognizes DWR's responsibility to assess its environmental impacts as part of the programmatic review. The Kern water transfer contract itself expressly relies on the Monterey Amendments, using its provisions as authority to accomplish the Kern water transfer. Even Wheeler Ridge's amendment to its SWP contract identifies the outcome of PCL as a factor that could impact the Kern water transfer's effectiveness. All of these facts, Petitioners argue, mean that the transfer is part of the Monterey Amendments environmental review.

Petitioners further argue that the nature of a program EIR supports their position. This purpose "is to document a series of actions so related they can be characterized as one project." Friends, 95 Cal.App.4th at 1377. The Monterey Amendments, including its transfer provisions, qualify as a "series of actions so related that they can be characterized as one project." An integrated review of the entire program may provide occasion for a more exhaustive

consideration of effects and alternatives than would be practical in an EIR on an individual action, ensure consideration of cumulative actions that might be slighted on a case-by-case analysis, avoid duplicative reconsideration of basic policy considerations, and allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basis problems or cumulative impacts. Id. at 1377. These factors are all borne out by the 2004 EIR, which presents a series of issues (the amount of supplies available to several water agencies, the location and timing of SWP deliveries, and use of SWP conveyance and storage facilities) on which DWR has superior expertise and greater accountability than Castaic. DWR may not delegate to Castaic its responsibility to prepare the environmental review for the Kern water transfer.

Under lead agency law, Castaic may act as lead agency and prepare an EIR for the Kern water transfer. The Kern water transfer is a project separate in time from the Monterey Amendments, now Monterey Plus. The core of the project is a local transfer of water between Castaic and Wheeler Ridge. Castiac alone had the responsibility to determine the water needs of its service area and to obtain the necessary water for those needs. Castaic negotiated and entered into the transfer contract with Wheeler Ridge. Castaic performed the contract by obtaining private investors who paid $47 million to Wheeler Ridge's water, and by taking delivery from DWR. The transfer is valid and cannot be challenged. Thus, Castaic has the general governmental power over the transfer, and is presumptively the lead agency for its own project. Bakman v. Dept. of Transportation, (1979) 99 Cal.App.3d 665, 678-79. Indeed, the environmental review of water transfers is generally performed by a local, not state, agency. County of Amador v. El Dorado County Water Agency, (1999) 76 Cal.App.4th 931 (local agency's analysis of water transfer project); Save Our Carmel River v. Monterey Peninsula Water Management District, (2006) 141 Cal.App.4th 677, 701 (city was lead agency as recipient of water transfer); Friends of the Eel River v. Sonoma County Water Agency, (2003) 108 Cal.Appp.4th 859 (local agency's EIR for plan to increase diversions of water from river); Sierra Club v. West Side Irrigation District, (2005) 128 Cal.App.4th 690 (local agency's environmental review of two projects to transfer water rights).[15]

It is true that DWR has an overall interest in promoting effective water management on a statewide basis. Pursuant to this interest, DWR had the right to approve the Kern water transfer, and it did so. This does not equate to principal responsibility, however. DWR is required by statute to "facilitate" the voluntary transfer of water between local agencies. Water Code §109.

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[15]The Friends court implicitly decided that Castaic may act as lead agency for the Kern water transfer. The Friends court acknowledged that it was required to address all deficiencies in the EIR unless it made a finding of improper lead agency. Pub. Res. Code §21005(c). If Castaic was the improper lead agency for the 1999 EIR, the appellate court was obligated to say so. The Friends court concluded that the 1999 EIR's only deficiency was that it tiered from the defective Monterey Agreement program EIR. Thus, the decision necessarily implied that Castaic was the proper lead agency for the 1999 EIR.

Of course, this case concerns the 2004 EIR, not the 1999 EIR, and the court previously held that Petitioners were not bound by the Friends court's implied determination. But the project is the same, and the implicit appellate determination is entitled to weight.

Per the SWP contracts, DWR's approval of the Kern water transfer could not be unreasonably withheld. Thus, DWR's involvement in the transfer is to facilitate the transfer by approving it and providing the SWP schedule delivery. Moreover, the SWP is intended as a supplement, not the exclusive supply, of water. Water supply decisions must be made by local Water Contractors, who obtain water both from SWP and other sources.[16]

Given that the decision to enter into the Kern water transfer belonged solely to Castaic and Wheeler-Ridge, and that DWR's approval is necessary merely to facilitate the transfer, Casataic had principal responsibility for the transfer.[17]

5. Project Definition

Petitioners contend for the first time in their Supplemental Vineyard Reply and at oral argument that the correct project definition is not the Kern water transfer, but is really the Monterey Amendments, citing the court's earlier ruling on Castaic's motion for legal determination that the key issue is whether the Amendments are a "series of actions (including the Kern water transfer) so related that they should be characterized as a single project." Pet. Supp. Reply at 5.

The correct definition of the project -- whether it is the Monterey Amendments or the Kern water transfer -- is a different issue than whether Castaic can act as lead agency for the project. Although the court did allude to project definition in ruling on the earlier motion, Petitioners never raised this issue in their opening brief or reply. Instead, they raise it for the first time in a reply brief on the application of Vineyard to this case. On appeal, an issue raised without analysis or authority lacks foundation and need not be addressed. City of Arcadia v. State Water Resources Control Board, ("Arcadia") (2006) 135 Cal.App.4th 1392, 1429, 1431. Similarly, an issue raised for the first time in supplemental reply deprives the opposing party of an opportunity to analyzing the issue and defend their position. Petitioners have waived the correct project definition as an issue by not raising it earlier.

Assuming *arguendo* that the issue has not been waived, a project under CEQA includes an activity directly undertaken by a public agency which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. Pub. Res. Code §21065(a). The "project" must be broadly defined, so as to ensure against avoiding environmental review by "chopping a larger project into little ones" or "piecemealing." Bozung v. Local Agency Formation Commission, (1975) 13 Cal.3d 263, 283-84. The project includes "the whole of an action" that has a potential for resulting in a direct or indirect physical change in the environment. Guidelines §15378. An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a

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[16]As Wheeler Ridge points out, DWR was not the lead agency for the 1991 Devils Den transfer or any of the Attachment E transfers listed in the Monterey Agreement.

[17]Given that DWR's approval may not be unreasonably withheld, cases holding that a state agency should prepare the EIR where it has final authority to approve a project are simply inapposite. *See* Fullerton v. State Board of Education, (1982) 32 Cal.3d 779, 795, n.15 (State Board of Education had final authority to submit plan to voters for new unified school district).

proposed activity. Mcqueen v. Board of Directors, (1988) 202 cal.App.3d 1136, 1143. The agency must avoid "piecemealing" or splitting a project into two or more segments. Otherwise, the cumulative environmental impacts of each piece may not be fairly analyzed. Burbank-Glendale-Pasadena Airport Authority v Hensler, (1991) 233 Cal.App.3d 577, 592. On the other hand, CEQA was not intended to and cannot reasonably be construed to make a project of every activity of a public agency, regardless of the nature and objective of such activity...." Simi Valley Recreation & Park District v. Local Agency Formation Commission, (1975) 51 Cal.App.3d 648, 663.

In San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus, (1994) 27 Cal.App.4th 713, 731-32, the court held that the project description in an EIR was improperly restricted to a 633 single family residential units, a 40,500 square foot commercial center, and a 14 acre park, failing to include sewer expansion which the EIR acknowledged would be required as part of the development. Although a separate EIR was prepared for the sewer expansion, neither it nor the development project EIR referred to the growth-inducing effects of the two projects considered together. This failure to address cumulative impacts was a separate failure of the development EIR. 27 Cal.App.4h at 733. "[t]he danger of filing separate environmental documents for the same project is that considration of the cumulative impact on the environment of the two halves of the project may not occur. This danger was here realized." Id. at 734 (citation omitted). Because the EIR did not "adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project" informed decision-making was precluded, the EIR was inadequate. Id.

The lesson from San Joaquin and other project definition cases is that the project should be defined broadly to ensure a complete analysis of impacts resulting from future expansion or continuation of other phases of the project.

In this case, DWR is the lead agency for the Monterey Amendments program EIR. DWR's description of its project is to improve the management of SWP supplies and operations through the Monterey Amendments. Thus, the Monterey Amendments EIR is broad in scope. The EIR will look at changing the allocation of all SWP water supplies (including deletion of agriculture first shortage provisions), retiring 45,000 acre feet of agricultural water, and establishing more efficient use of SWP facilities. As part of the analysis, it will analyze the potential impacts from permanently transferring 130,000 acre feet of water from agricultural to urban contractors per the Monterey Agreement. This analysis will look at the individual transfers, including the Kern water transfer, as they fit the entire Monterey Amendments. But DWR does not intend to consider each transfer individually; it intends to evaluate the impact of all the Attachment E transfers and the Kern water transfer as a whole. DWR Br. at 17.

Castaic's 2004 EIR project description concerns the impacts of the Kern water transfer alone. Castaic's EIR does look at cumulative impacts of the project with other projects, including the Monterey Amendments, but does not purport to assess the environmental impacts of the Monterey Amendments independent of the Kern water transfer. AR 141-42.

Castaic relies on the independent utility test to argue that the Kern water transfer is a separate project the environmental impact of which may be separately analyzed from the Monterey Amendments. The "independent utility" test has been developed in NEPA cases to determine whether multiple actions are connected so as to require an agency to consider them in

a single environmental review. Wetlands Action Network v. United Sates Army Corps. Engineers, (9th Cir. 2000) 222 F.3d 1105, 1118.[18] Pursuant to the independent utility test, where each of two projects would have taken place with or without the other, each has "independent utility" and the two are not considered so connected that an agency must consider them in a single environmental review. Native Ecosystems Council v. Dombeck, (9th Cir. 2002) 304 F.3d 886, 894. *See also* DelMar Terrace Conservancy, Inc. v. City Council of the City of San Diego, (1992) 10 Cal.App.4th 712 (freeway segment was separate project serving a viable purpose even if long-term, multi-segment plan to expand freeway never occurred, and had independent utility under CEQA).

Castaic argues that it has contemplated the Kern water transfer since 1988, when it included a transfer with Kern in its 1988 Capital Program for the Santa Clarita Valley's future water needs. For economic reasons, Wheeler Ridge, too, sought to transfer its SWP water rights since approximately 1985. Castaic concludes that the Kern water transfer would have occurred with or without the Monterey Amendments. Articles 40 and 41 of the SWP contract permitted transfers between Water Contractors, subject to DWR approval. Article 53, added to the SWP contracts by the Monterey Amendments and concerning the transfer of 130,000 acre-feet, did not "enlarge, restrict, or otherwise impact" Castaic's right to acquire water from Wheeler Ridge under Articles 40 and 41. Instead, it was merely a blanket approval of certain contemplated transfers. Castaic Op. Br. at 21. The Kern water transfer was completed, paid for, and operating since 1999. Nothing about it is tied to the outcome of the Monterey Amendments. Thus, while the transfer is part of a larger scheme (the Monterey Amendments), it is a long-planned site specific project with independent utility from the Monterey Amendments.

The court cannot conclude that the Kern water transfer would have taken place without the Monterey Amendments. True, Castaic has wanted Wheeler Ridge's SWP allocation of water since the late 1980's, and Wheeler Ridge was willing to provide it. Yet, it did not happen until after the Monterey Amendments. The contract between Castaic and Wheeler Ridge states that the transfer was taking place "in accordance with" Article 53 of the Monterey Amendments, and those Amendments change the way SWP water is allocated in California. It does not say that the transfer is being made under Article 41. Petitioners contend, and the court agrees, that only through conjecture can one conclude that Castaic and Wheeler Ridge would have entered into the transfer without the Monterey Amendments, and with Article 18's agriculture first provisions in place.[19]

Though the court cannot conclude that the Kern water transfer would have occurred without the Monterey Amendments, it can conclude that the transfer will remain in effect even if the Monterey Amendments are not approved or otherwise are mitigated under CEQA. The court

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[18]Since CEQA was modeled on the federal NEPA statute, federal decisions on NEPA are persuasive authority on CEQA issues. No Oil, Inc. v. Los Angeles, (1974) 13 Cal.3d 68, 86.

[19]When Petitioners commented on the draft EIR that any pre-Monterey Amendments transfer would be subject to Article 18's agriculture first provisions, Castaic did not say that the Kern transfer would have occurred without the Monterey Amendments. It merely responded that the transfer "could occur" either pre- or post- Monterey Amendments. AR 993.

already has indicated that the Kern water transfer is final. The parties to the transfer stated at hearing that they have no intention of rescinding it even if the Monterey Amendments are mitigated and Article 18's agriculture first provisions are in effect. This position is supported by the fact that the 2004 EIR evaluates the water supply impacts of just such a pre-Monterey Amendment Article 18 scenario. AR 186. As such, it is compelling evidence that the transfer will stand.[20]

Plainly, then, the Kern water transfer is final and will remain in place whatever happens to the Monterey Amendments. As such, the transfer has "independent utility" for purposes of environmental review. It is not so connected to the larger Monterey Amendments that the two must must be considered in a single environmental review. *See* Native Ecosystems Council v. Dombeck, 304 F.3d at 894.

6. **EIR Timing**

Petitioners' real argument seems to be that, whenever a program EIR is anticipated, the agency preparing an EIR for a specific project must wait for the program EIR.

This is not the law. Nothing in CEQA requires Castaic to wait for DWR's program EIR. Indeed, as a general proposition, the environmental review process should be undertaken early enough in the planning process to impact planning decisions, with the timing committed to the agency's discretion. City of Vernon v. Board of Harbor, (1988) 63 Cal.App.4th 677, 690-91. The Kern water transfer occurred almost eight years ago. It has been paid for and operating for a number of years. Castaic tried to conduct a timely environmental review, but that EIR was set aside in Friends. It is not an abuse of discretion for Castaic to want to complete the environmental review and obtain finality for the transfer without waiting for DWR's program EIR of the Monterey Amendments, now Monterey Plus.

Nor does this decision frustrate the law concerning program EIRs and tiering. The purpose of a program EIR is to document a series of actions so related that they can be characterized as one project. Friends, 95 Cal.App.4th at 1377. If the program EIR is sufficiently comprehensive, the lead agency may dispense with further environmental review for later activities within the program that are adequately covered in the program EIR. Guidelines §15618(c). Thus, the program EIR may be used to focus or simplify later environmental review, or as the basis of a tiered EIR. "Tiering" means the coverage of general matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance, followed by narrower or site-specific EIRs which incorporate by reference the discussion in the prior report. *See* Pub. Resources Code §§ 21068.5, 21093 and Guideline §§ 15152, 15385. Tiering is favored "whenever feasible, as determined by the lead agency." Pub. Resources Code §21093(b). It is required where a prior EIR has been prepared and certified for a program, plan, or ordinance. Pub. Resources Code §21094(a). However, tiering is only required "where a prior environmental report has been prepared and certified for a program." Friends, 95 Cal.App.4th at 1383. It is not required, and in fact is prohibited, where the program EIR has yet to be prepared. Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412

[20]Petitioners think so too, for their principal argument is premised on the 2004 EIR's assumption that the transfer is final for all purposes.

EIR cannot tier off of *future* environmental document).

7. Vineyard

In Vineyard, the Supreme Court addressed a county prepared EIR for a large land use development project known as "Sunrise Douglas." The principal issue was the availability of long-term water supply for the project, and the environmental impacts and mitigation for such supply. The Supreme Court analyzed the various water supply cases and distilled several principles. First, the EIR for a land use project must present sufficient facts to evaluate the pros and cons of supplying the amount of water the project will need, and not simply ignore or assume a water supply solution will be found for a development project. Second, an adequate EIR for a large project must show water supply for the entire project. It is not enough to show available water for early stages. While the agency may tier and defer analysis of certain details of later phases of long-term or complex projects, deferring analysis through tiering is appropriate when the impacts or mitigation measures are not determined by the first-tier approval and are specific to later phases. Third, the future water supplies identified and analyzed must bear a likelihood of actually being available. Finally, where there is some uncertainty about availability, CEQA requires some discussion of possible replacement sources or alternatives, and their environmental consequences.

Of particular use herein, the Supreme Court discussed the EIR's reliance on an anticipated local Water Board's master plan update, which would discuss the availability of long-term water supplies to the area and their environmental impact. The Court held that the county's EIR cannot tier from a *future* environmental document. If the environmental analysis from the Water Board's anticipated master plan update was important to understanding the long-term water supply for Sunrise Douglas, it should have been performed in the Sunrise Douglas EIR even though that might result in subsequent duplication by the Water Board's master plan update. Or, the county could have deferred analysis and approval of Sunrise Douglas until the Water Board's master plan update, then tiered the Sunrise Douglas EIR from the programmatic analysis performed by the Water Board.

The Vineyard decision shows that the timing of Castaic's project specific EIR in relation to DWR's program EIR is up to Castaic. It may either wait for DWR's program EIR and tier off of it, or prepare its own EIR for the Kern water transfer first. If it chooses the latter, Castaic may not tier off an environmental document that does not yet exist. Instead, Castaic must analyze all necessary environmental impacts and mitigations. If analysis of some portion of the Monterey Amendments is important to understanding the environmental impacts of the Kern water transfer, then analysis of that issue must be included in Castaic's EIR. But if Castaic's EIR does so, it is irrelevant that the document duplicates some of what DWR would do, or even that it may be inconsistent with DWR's analysis.[21] As DWR contends, CEQA's goal is to ensure sufficient information; it contains no prohibition against too much information. DWR Br. at 21. The timing of Castaic's EIR for the Kern water transfer is up to Castaic and Castaic alone.

[21] As previously stated, the prospect of inconsistencies between Castaic's EIR and DWR's program EIR is diminished by Castaic's use of DWR modeling, DWR's comments and input into the 2004 EIR, and the general cooperation and coordination between the two agencies.

F. Contents of the 2004 EIR

Apart from the proper lead agency, Petitioners argue that the 2004 EIR is inadequate. Initially, the court believed that Castaic could have real problems on this issue. It is one thing for Castaic to act as lead agency on a water transfer before the program EIR is prepared; Vineyard and other case law say that Castaic may do so. But the EIR must be adequate and complete. Vineyard teaches that if analysis of some portion of the Monterey Amendments is important to understanding the environmental impacts of the Kern water transfer, then that analysis must be included in Castaic's EIR. PCL held that the "no project" alternative was particularly important for the Monterey Amendments, and the public was entitled to know what would happen if the Amendments were not approved and Article 18 was implemented in the event of water shortage. Commentators particularly wanted to know whether imposition of Article 18 might eliminate the "paper water" entitlements in the water contracts, reduce land planning decisions based on that paper water, and ultimately reduce growth and construction of additional SWP facilities. PCL, 83 Cal.App.4th at 892-3.

The court wondered whether Castaic would have the expertise to perform any analysis of the Monterey Amendments or the "no project" alternative that would be required in the 2004 EIR. However, the parties' briefs, and oral argument at hearing, have demonstrated that, with one exception, the 2004 EIR's contents are sufficiently presented. Indeed, Petitioners barely criticize the 2004 EIR's adequacy, except as it impacts the lead agency issue.

1. "Deception"

Petitioners' principal argument about content is that the 2004 EIR is deceptive in failing to make clear that the Kern water transfer is not "final." They contend that the 2004 EIR's project definition treats the Kern water transfer as an immutable *fait accompli* which fails to disclose that the "final status" of the transfer depends on the DWR's forthcoming review. According to Petitioners, the EIR improperly relies on the interim availability of the water to predict that DWR will "leave it in place," a point which the court in California Oak Foundation v. City of Santa Clarita, ("California Oak") (2005) 133 Cal.App.4th 1219, 1238, n.16 had no trouble dispatching, and also improperly states that it would be unnecessary and speculative to consider what the DWR might do to change the transfer (*See* AR 994). Pet. Op. Br. at 19-20. This false assumption that the transfer is immutable may result in land use decision-makers approving projects based on water availability "worth little more than a wish and a prayer." Id. at 20-21.

The court has determined that the transfer is final as a matter of law. Therefore, the EIR is not wrong in saying so. What Petitioners really contend is that the Kern water transfer, though final, can be affected by the DWR's program EIR through mitigations and imposition of alternatives. Yet, the EIR proceeds as if the transfer cannot be altered. As counsel described the issue at hearing, the 2004 EIR "talks about risk, but never directly informed the public about the fact that the transfer may be unwound through the Monterey Amendment EIR process." Thus, the EIR refers to the transfer as of an "*existing* 41,000 " acre feet of SWP Table A water (AR 15, 35) and states that "no permits or *other approvals* would be required other than" certification of the

EIR. AR 16.[22]

The EIR is the method for disclosure of environmental issues. Rural landowners Assn. V City Council, 43 Cal.App.3d 1013, 1020. CEQA's purpose is to compel agencies to make decisions with environmental consequences in mind, but CEQA does not and cannot guarantee that these decisions will always favor environmental concerns. Laurel Heights, 47 Cal.3d at 393. The EIR should provide sufficient analysis to allow decision-makers to make intelligent judgments about environmental consequences. Guidelines §15151. The evaluation of environmental effects need not be exhaustive, but the EIR's sufficiency is reviewed in the light of what is reasonably foreseeable. Id. Perfection is not required, but adequacy, completeness, and a good faith effort at full disclosure is. Id.

In California Oak, the court addressed the proposed development of a 584 acre industrial park project in the Santa Clarita. The City's EIR relied on the Kern water transfer for water supply, and the appellate court held that it did not adequately address the uncertainty in that water delivery. 133 Cal.App.4th at 1236. The City's comments "did little more than dismiss project opponents' concerns about water supply" and the EIR failed to discuss the adequacy and availability of water supply absent the Kern water transfer. Appendix K to the EIR did acknowledge uncertainty in the Kern water transfer, but this was insufficient in part because inforamtion "scattered here and there in EIR appendices" or a report "buried in an appendix" is not a substitute for good faith reasoned analysis. Id. at 1239 (citation omitted). Moreover, Appendix K contained no facts and analysis about the likelihood of deficit or alternative sources of supply, and was misleading about the fact that Castaic had an SWP "entitlement" without explaining that the entitlement consisted in part of "paper water." Id. at 1239-40. Hence the EIR failed as an informational document on water supply issues.

Castaic contends, and the other Respondents agree, that the 2004 EIR fully addresses the uncertainty of what DWR will do. At hearing, they contended that Petitioners really are arguing that the 2004 EIR is misleading because it does not anticipate Petitioners' argument.[23]

The EIR explains that planning for water supply to meet demands requires consideration of reliability of SWP supplies, because historical and statistical analysis show that the full Table A amount will not be available in some years. AR 41. The EIR explains that Castaic's Table A amount is the maximum SWP amount, and the amount of SWP water actually available to it varies from year to year. Id. The EIR acknowledges that DWR's allocations are based on that year's hydrological conditions, the amount of water stored in the SWP system, and contractor requests for water. AR 16. The EIR discusses the Monterey Agreement (AR 46-47), PCL and Monterey Plus. AR 17-18, 47. The EIR cautions land use planners who might rely on the EIR to predict future water supplies, that while Castaic will implement all feasible measures to obtain water "past water deliveries are not a guarantee of future delivery rates." AR 13.

The EIR considers the environmental impact of the project based on water allocation

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[22]At trial, Petitioners' counsel made plain that this issue of deception is distinct from the reliability of water delivery by DWR.

[23]Respondents' contention sounds like an argument that Petitioners failed to exhaust their administrative remedies. However, no failure to exhaust claim was made in their briefs.

scenarios of pre-Monterey Amendments without Article 18 cutbacks, pre-Monterey Amendments with Article 18 cutbacks, and post-Monterey Amendments. AR 56. The EIR argues that the project could have been authorized under Article 41, but instead was implemented under Article 53 of the Monterey Agreement. It adds that DWR is preparing a new EIR for the Monterey Amendment.

Since the Monterey Amendments change the way in which SWP water is allocated among contractors, the 2004 EIR provides three separate analyses of the project's impacts to water supply. AR 186-89. The EIR goes to great lengths to discuss the uncertainties in the Article 18 allocations. AR 187-89. For each scenario, the EIR estimates reliability based on wet, dry, and extended dry year conditions. AR 183-91. The EIR addresses direct impacts to water supply and water quality under the three water allocation scenarios. AR 202-05. It discusses indirect impacts from the growth-inducing effect of the project, and mitigations of these impacts through implementation of existing agency policies. AR 207-224. It discusses the cumulative impact of the project and other projects inside and outside the project area. AR 278-89. Finally, it addresses alternatives to the project, including a no project alternative. AR 293-300.

The EIR clearly demonstrates the variability of SWP deliveries, and covers what could happen as a result of the Monterey Amendments EIR. But Petitioners are correct that the EIR has a hole in it. The EIR does not directly explain that the project may be impacted by the outcome of the Monterey Amendments EIR. Instead, the 2004 EIR assumes there are three possible water delivery scenarios without any discussion of why or how they would occur: "Since the Monterey Amendments change the way in which SWP water is allocated among contractors, the 2004 EIR provides three separate analyses of the project's impacts to water supply." The reader is left to interpret how these allocations could come about, and must conclude on his or her own that they are three possible outcomes of challenges to the Monterey Amendments. Nor does the EIR explain how such challenges could cause these allocations to occur.

An EIR is an informational document which is supposed to provide the reader with the "analytic route the...agency traveled from evidence to action."Citizens of Goleta Valley v. Board of Supervisors, ("Goleta") (1990) 52 Cal.3d 553, 568. This means that the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions. Castaic is not required to predict the outcome of litigation, and may not be able to discuss the likelihood of each of the three allocations. However, it should have at least explained why the three scenarios are relevant and how they would occur.[24] The failure to do so leaves the reader wondering why they are pertinent. Consequently, the 2004 EIR fails to provide the analytic route by which the three alternatives are relevant.

Non-compliance with the disclosure requirements of CEQA may constitute a prejudicial abuse of discretion regardless of whether the agency would have taken the same action had it complied with CEQA. Pub. Res. Code §21005(a). Still, CEQA is subject to the established principle that there is no presumption of prejudicial error. Pub. Res. Code §21005(b). Only if the manner in which the agency failed to follow the law is prejudicial must the decision be set aside. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236.

[24]For example, the court has no idea how a pre-Monterey Amendments without Article 18 cutbacks would occur.

The issue is whether Castaic's failure to supply the analytical route for its consideration of the three allocations is prejudicial. Prejudice depends on whether the failure to include this information makes "any meaningful assessment" of the project's environmental effects impossible, in which case prejudice is presumed. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236 (agency approved timber harvesting plans without requiring necessary environmental information in them).[25] Even under this standard, not every CEQA failure is prejudicial. An EIR will be upheld if the error *de minimus* or clerical in nature (Save San Francisco Bay Association v. San Francisco Bay Conservation and Development Commission (1992) 10 Cal.App.4th 908, 935), the EIR analysis is comprehensive, if not perfect, despite the error (Schaeffer Land Trust v. San Jose City Council, (1989) 215 Cal.App.3d 612, 627-28), and information which should have been included to make the EIR accurate nonetheless has no material effect on informed decision-making or informed public participation (Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 747-50).

The Vineyard court reiterated that the reviewing court must focus on the nature of the defect, depending on whether the claim is predominantly one of improper procedure or a dispute over facts. Where the agency has employed the correct procedures, greater deference is given to the agency's factual conclusions, which are reviewed for substantial evidence. 40 Cal.4th at 435.

The 2004 EIR's non-compliance concerns its analytic route – why and how the three allocations are pertinent. This is not a fact issue to be supported by substantial evidence. Instead, it is a failure affecting the public's ability to make a "meaningful assessment" of the project's environmental effects. As such, it is prejudicial. *See also* Rural Land Owners Assn. v. Lodi City Council, (1983) 143 Cal.App.3d 1013, 1023 (whenever failure to comply with CEQA results in a subversion of its purposes by omitting information from the environmental review process, the error is prejudicial).[26]

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[25]One appellate court, Resource Defense Fund v. Local Agency Formation Commission, (1987) 191 Cal.App.3d 886, 897-98 has stated that "[f]ailure to comply with CEQA is necessarily prejudicial." This does not appear to be the consensus approach. *See* Dusek v. Anaheim Redevelopment Agency, (1985) 173 Cal.App.3d 1029, 1040-42 ("a minor CEQA sin or two" constituting technical defects where the public had not been misled or defrauded is not enough for prejudice).

[26]Petitioners also argue that the 2004 EIR finesses the non-final nature of the project by jumping the gun and analyzing pre-Monterey Amendments. According to Petitioners, Castaic performed a "mini-programmatic review" at AR 155-06 and App. D (AR 468-550). The charts at AR 184 and 506 show this. According to Petitioners, this is not just factual overlap; this is usurpation of DWR's responsibilities.

DWR correctly points out that Petitioners are complaining about too much information, something that CEQA does not proscribe. Petitioners have no complaint about the content of the mini-program review. To the extent that Castaic performed a task that DWR is obligated to perform, DWR may either use Castaic's analysis or perform a new one. The cooperation of DWR and Castaiac suggests that the overlapping environmental analysis will be consistent. Even if inconsistent, DWR's analysis will control for the Monterey Amendments. There is no

2. Modeling

Petitioners contend that Castaic used an obsolete DWR model, DWRSIM, for making predictions about the amount of SWP water that could be available as a result of the Kern water transfer. DWR has used CALSIM II for modeling SWP deliveries since 2000. While the EIR uses CALSIM II to look at the environmental setting, it only uses DWRSIM to look at environmental impacts. According to Petitioners, Castaic's rationale for doing so -- that DWRSIM should be used for the 1998 environmental setting -- makes no sense. Modeling is for future results, not historical analysis.

Petitioners argue that Castaic's use of an old model prejudicially overstates the reliability of SWP water delivery. App.D, Table 2-2 compares the projected 2020 deliveries based on the two different models. AR 493. The graph shows a discrepancy between the two models, particularly in the 50-70% supply range, and most glaringly in the range of drought conditions. Although the EIR does not quantify these differences, Castaic's responses to public comments presents a table that does. The table shows that the two models can differ by as much as 5000 acre-feet. Pet. Op. Br. at 23. According to Petitioners, this is not the "slight discrepancy" DWR states it is.

When a challenge is brought to studies on which an EIR is based, "the issue is not whether the studies are irrefutable or whether they could have been better. The relevant issue is only whether the studies are sufficient credible to be considered as part of the total evidence that supports the" agency's decision. Laurel Heights, 47 Cal.3d at 409 (lead agency entitled to choose and rely on expert opinion even though others may disagree). Expert testimony constitutes substantial evidence and an agency is entitled to rely on it. Uhler v. City of Encinitas, (1991) 227 Cal.App.3d 795, 805. Even where experts disagree, the agency is entitled to choose one expert's opinion over another. Laurel Heights, 47 Cal.3d at 409. The party challenging the EIR bears the burden of demonstrating that the studies on which the EIR is based "are clearly inadequate or unsupported." State Water Resources Control Board Cases, (2006) 136 Cal.App.4th 674, 795.

CEQA requires Castaic to reasonably inform the reader about the amount of water available. The EIR states that all environmental impacts from the project are driven by the amount of water delivered and the timing of delivery. AR 55. Castaic analyzed the amount of SWP water available for delivery through hydrologic modeling with computer simulations that predict the amount of water available under various hydrologic conditions. To do so, the EIR, like all EIR's had to have an environmental setting for the project. This environmental setting describes the conditions of the project as they exist at the time the Notice of Preparation is published or, if there is none, at the time the environmental analysis is commenced. This setting will normally constitute the baseline physical conditions by which an agency determines whether an impact is significant. Guidelines §15125(a).

The 2004 EIR states that its baseline 1998 environmental setting used DWRSIM, which is a model simulating the operations of the SWP, "because this is the modeling tool that was available during 1998." AR 55. DWR had used DWRSIM in 2000 to conduct a reliability study for another project. The 2004 EIR does use CALSIM II for the current environmental setting of

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usurpation of responsibility.

the project. CALSIM II was available because DWR performed a SWP Delivery Reliability Report in 2003 using CALSIM II as its model. AR 56. Although the modeling tools are different, the criteria used to input into the computer simulation has not changed significantly. Id.

The question raised by Petitioners is why use an older computer simulation model (DWRSIM) for the 1998 baseline when a newer model (CALSIM II) was available? Appendix D of the 2004 EIR, entitled "Technical Data for Hydrologic Analysis," explains that Castaic had to do so because it did not perform any model analysis of its own. Instead, Castaic relied upon DWR's expertise, and its existing model studies. *See* AR 491. DWR used DWRSIM in its 2000 study and CALSIM II in its 2003 study; Castaic relied upon those same studies and same models.

Castaic's reliance on DWR's existing studies and its expertise is an explanation, but the issue becomes whether it is an adequate one.

The answer is in Appendix D, which explains that DWRSIM has a database of monthly runoff based on historic hydrologic data for a 73 year period from 1922-74. DWRSIM takes this data and, depending on the input variables of operating constraints and water contractor demand, estimates the amount of water SWP can deliver each month over that 75 year period. Assuming that hydrologic conditions repeat, the operator can predict the amount of water available under that particular hydrologic condition and with a particular demand and operating condition. AR 491.

Appendix D then shows that DWRSIM and CALSIM II predict similar outcomes, and that the differences in their predictions can be explained. In Figures 2-1 and 2-2 of Appendix D, Castaic compares the two models' prediction of SWP water deliveries at existing demand and at predicted 2020 demand levels. AR 493. The "existing demand" for the DWRSIM model is 1998 demand. The "existing demand" for the CALSIM II model is 2001 estimated demand. The 2001 demand is higher than the 2000 demand. Consistent with reality, the model will only show delivery up to the amount of demand; SWP will not deliver more water than is asked for even if it is available. This difference in demand explains why CALSIM II shows more delivery in wet years than DWRSIM; the lower demand in 1998 limits the amount of delivery.

The difference in demand also explains in part why CALSIM II predicts a higher delivery in extremely dry conditions; 1998's lower demand means more water is left in storage from the preceding year and is available for delivery in a dry year. Appendix D says that the proof is in the pudding: comparison of DWRSIM and CALSIM II in Figure 2-2, for the year 2020 with the same level of demand for each model, shows very close prediction of SWP delivery for both models. AR 492-93.

Castaic concludes that the two models predict "generally comparable" results and their differences are minimal. AR 491, 1003. Castaic argues that, if anything, the slightly higher supplies predicted by the DWRSIM model provide a worst case scenario for purposes of growth inducing impacts; the more water the more developers will grow the Santa Clarita Valley. AR 1003-04, 1009.

Contrary to Petitioners' argument, the use of DWRSIM and not CALSIM II in the 1998 baseline study does not affect the conclusion that the study constitutes substantial evidence. Petitioners do not present expert opinion that the use of DWRSIM results in any error. They merely rely on the differences in Figures 2-1 and 2-2 of Appendix D, and Appendix D explains

the reason for the differences. As Castaic points out, Petitioners cannot point to any environmental significance to the use of DWRSIM and not CALSIM II. Therefore, Petitioners have not met their burden of demonstrating that use of DWRSIM for the 1998 baseline in the 2004 EIR was "clearly inadequate or unsupported."[27]

3. Cumulative Impacts

Petitioners contend that the 2004 EIR attempts to assess the project's impacts on the SWP without discussion why Castaic is competent to do so. As an example, the EIR rejects any significant project impact on the Delta, even though it acknowledges that differences in timing in the use of water for urban (Castaic) rather than agricultural (Wheeler Ridge) purposes would change the timing of deliveries. AR 192. Petitioners argue that the Delta is "in crisis" and there is great potential for conflict between Castaic's and DWR's respective environmental analysis. Pet. Op. Br. at 23-4.

An EIR must contain a cumulative impacts analysis of the project's environmental impact when considered in conjunction with other projects (Guidelines §15130) in order to ensure that "the entire relevant environmental picture" has been adequately considered. Laupheimer v. State of California, (1988) 200 Cal.App.3d 440, 462. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Guidelines §15130(a)(1). The EIR should not discuss impacts which do not result at least in part from the project being evaluated. Id. The analysis should reflect the severity and likelihood of occurrence of the impact. Guidelines §15130(b). In every case, there should be at least a preliminary search for potential cumulative environmental effects and a preliminary assessment of their significance. Laupheimer, 200 Cal.App.3d at 462-63. The detail required in a cumulative impacts discussion need not be as great as provided for the environmental impacts attributable to the project alone. Guidelines §15130(b). Generally, the EIR should list the projects producing cumulative impacts or provide a summary of projections contained in a prior certified or adopted environmental document which describe the regional conditions contributing to the cumulative impact. Guidelines §15130(b)(1). The 2004 EIR uses the list approach to discuss cumulative impacts of the project's environmental impact when considered in conjunction with other projects. AR 241-289.

Castaic argues that everything that happens with respect to the Kern water transfer happens south of the Delta, and the EIR thoroughly discusses that, including the impact of the timing of deliveries. AR 193-06. Thus, the EIR's conclusion that the project will have no direct

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[27]Castaic does not have statewide expertise on SWP reliability, but its consultants and DWR do. In commenting on Castaic's draft EIR, DWR stated that the differences between CALSIM II and DWRSIM "may cause slight changes in results, which may lead DWR to different conclusions....[in DWR's Monterey Amendments EIR]" AR 564. However, DWR also found that the draft EIR adequately and thoroughly discussed the project and its impacts, including the effects of the project on the environment and the SWP, using appropriate baseline conditions, and had a good discussion of the relationship between the Kern water transfer and Monterey Plus. DWR concluded that the draft EIR a "adequately discusses the reliability of the SWP, pre- and post- Monterey Amendment conditions, and SWP operations." AR 564-65.

significant impact on the SWP or related facilities is fully supported. Castaic contends that Petitioners really are attacking its ability to act as lead agent for a local project if the project has the potential for statewide impact. According to Castaic, this argument goes to the lead agency issue, and is incorrect as a matter of law. Castaic is qualified and required by CEQA to assess impacts that occur outside of its borders in evaluating the Kern water transfer. Citizens of Goleta Valley v. Board of Supervisors, (1990) 52 Cal.3d 553, 573.

The court does not know whether Petitioners really are attacking Castaic's expertise or the adequacy of its assessment of SWP impacts from the Kern transfer. The reason is that Petitioners' arguments are conclusionary and unsupported by analysis, authority, or many facts. Petitioners' obligation was to point out what is wrong with the analysis, or what has been omitted that was required. An issue raised without analysis or authority lacks foundation and need not be addressed. Arcadia, 135 Cal.App.4th at 1429, 1431. The court has no obligation to search the EIR's cumulative analysis section to look for defects. Their general objection requires only a general response that Castaic's cumulative impacts analysis is adequate.

4. The "No Project" Alternative

Petitioners argue that the 2004 EIR fails to address the "no project" alternative, an issue particularly important because it was the principal defect in the PCL Monterey Agreement EIR. As the PCL court stated, a "no project" alternative must discuss "existing conditions" and "what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." 83 Cal.App.4th at 912. The Monterey Agreement EIR did not discuss the projections related to land planning, demand for water, and other impacts of reducing entitlements pursuant to Article 18(b). Id. at 919. Petitioners contend that the 2004 EIR does discuss the water supply reliability impacts of invoking Article 18(b), but not the statewide impacts the PCL court found so crucial.

The short answer to Petitioners contention is that 2004 EIR addresses a different project than the Monterey Amendments. The "no project" alternative for any EIR requires a comparison of the impacts of approving the project with the effect of not doing so. Guidelines §15126.6.(e)(1); Mira Mar Mobile Community v. City of Oceanside, (2004) 119 Cal.App.4th 477, 488-89. The only "no project alternative" that Castaic is obligated to consider is the alternative of "no Kern water transfer." Castaic has addressed this alternative by discussing groundwater sources of water and a possible moratorium. AR 291-4. Petitioners do not quibble with this analysis. But Castaic had no obligation to consider "no Monterey Amendments" as a no project alternative.[28] Indeed, it would make no sense to evaluate "no Monterey Amendments" as an alternative to the Kern water transfer.[29]

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[28]Of course, the 2004 EIR is obligated to consider invocation of Article 18(b) as a reasonably foreseeable environmental impact, and the adequacy of it doing so has been discussed.

[29]For a similar reason, Castaic need not analyze alternative uses of the SWP water in a "no project" alternative. CEQA does not require consideration of alternatives that do not meet the project objective; *i.e.*, delivery of water to Castaic's customers. *See* Guidelines §15126.6(c).

5. Post-Hoc Rationalization

Petitioners also suggest that the 2004 EIR is a post-hoc rationalization for "a decision already made.". Pet. Op. Br. at 18. Pre-judging environmental decisions in order to accomplish a project is prohibited under CEQA. An agency may not commit to a project before CEQA review is completed because a fundamental purpose of an EIR is to provide decision-makers with information they can use in deciding whether to approve a project. Therefore, post-approval environmental review has been condemned. Laurel Heights, 47 Cal.3d at 394. *See* Residents Ad Hoc Stadium Com. v. Board of Trustees, (1979) 89 Cal.App.4th 274, 285. Of course, an agency contemplating a project may be presumed to favor the project, and CEQA assumes this to be inevitable. Therefore, it builds in procedural protections to insure that the decision-maker does not fail to note the facts and arguments by opponents to the EIR. Id. at 285.

Castaic had completed the transfer and performed under it for several years prior to preparing the 2004 EIR. Plainly, it desires to keep the transfer and not change it. When the 1999 was found deficient, Castaic was required under CEQA to perform a "fresh look" at the transfer's environmental impacts. With the exception of the analytical hole discussed above, it has done so. *See* City of Vernon v. Board of Harbor, (1998) 63 Cal.App.4th 677, 1523 (adequacy of EIR overcomes contention that it was a post-hoc rationalization).

G. Conclusion

Castaic may act as the lead agency for the Kern water transfer. The 2004 EIR was properly prepared except for one defect – it fails to show the analytic route as to how and why the three allocations of pre-Monterey Amendments, pre-Monterey Amendments without Article 18, and post-Monterey Amendments are relevant and would occur. The court offers no opinion on whether this failure must be rectified by addendum (Guidelines §15164), a subsequent EIR, a supplement to EIR, or a new EIR. That determination is Castaic's to make in the first instance.

The Petition for Writ of Mandate is granted in part. A writ shall issue commanding Castaic to set aside its approval of the 2004 EIR and comply with CEQA, either through the preparation of a new EIR or other environmental documentation, such as an addendum, addressing the analytic route of the three water allocations. Castaic is not directed to set aside the Kern water transfer. Judgment shall be entered in favor of Petitioners solely on this issue.

This shall serve as the court's proposed statement of decision in compliance with CRC 232(c). If there are no written objections filed, the statement shall be final. As Respondents have prevailed on all but one issue, Castaic's council is ordered to prepare a writ of mandate and judgment consistent with this decision, and serve it on all other counsel for approval as to form. After 10 days, Castaic may file the proposed writ and judgment with the court, along with a declaration stating the nature and extent of any objections received. An OSC re: judgment shall be set for April 23, 2007.

Dated: April 2, 2007

J. Chalfant

Superior Court Judge
JAMES C. CHALFANT

PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 695 Town Center Drive, Suite 400, Costa Mesa, California 92626.

On May 14, 2007, I served the foregoing document described as: **[PROPOSED] JUDGMENT GRANTING PEREMPTORY WRIT OF MANDATE** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list:

SEE ATTACHED LIST

[XX] (BY MAIL) I am "readily familiar" with the firm's practice of collection and processing correspondence by mailing. Under that practice it would be deposited with U.S. postal service on that same day with postage fully prepaid at Costa Mesa, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

[ ] (BY OVERNIGHT MAIL) I caused such document to be delivered by overnight mail to the offices of the addressee(s).

[ ] (BY PERSONAL DELIVERY) I caused such envelope to be delivered by hand to the offices of the addressee.

[ ] (BY FACSIMILE) I transmitted said document by fax transmission to the fax number(s) indicated

[**XX**] (BY E-MAIL) I transmitted said document by e-mail transmission to the e-mail addresses indicated

[**XX**] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on May 14, 2007, at Costa Mesa, California.

Victoria A. Robinson

VICTORIA A. ROBINSON

PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 695 Town Center Drive, Suite 400, Costa Mesa, California 92626.

On May 18, 2007, I served the foregoing document described as: **[PROPOSED] JUDGMENT GRANTING PEREMPTORY WRIT OF MANDATE** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list:

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[XX] (BY E-MAIL) I transmitted said document by e-mail transmission to the e-mail addresses indicated

[XX] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on May 18, 2007, at Costa Mesa, California.

Monifa Wilson

MONIFA WILSON

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LOS ANGELES SUPERIOR COURT
MAY 22 2007
JOHN A. CLARKE, CLERK
A. Fajardo
BY A. FAJARDO, DEPUTY

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MAY 18 2007
CIVIL OPERATIONS

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CASE NO.: BS 098724

Assigned for All Purposes:
Honorable James Chalfant
Department 13

(Consolidated Cases)
[Transferred from Ventura County Master File No. CIV 231588 (consolidated with Ventura County Case No. CIV 231606)]

~~[PROPOSED]~~ PEREMPTORY WRIT OF MANDATE

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

THE PEOPLE OF THE STATE OF CALIFORNIA

To Castaic Lake Water Agency, Respondent:

Judgment having been entered in this proceeding ordering that a peremptory writ of mandate be issued from this Court based on the Statement of Decision,

YOU ARE HEREBY COMMANDED within 30 days of service of this Writ to:

1. Set aside your December 22, 2004 certification of the Final Environmental Impact Report ("EIR") for a Supplemental Water Project Transfer of 41,000 acre-feet per year ("afy") of State Water Project ("SWP") Table A Amount ("2004 EIR"), ~~but only with respect to addressing the analytic route of the three water allocations in the 2004 EIR, *i.e.*, pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18 (b) cutbacks and post-Monterey Amendments~~.
2. Comply with the California Environmental Quality Act [Public Resources Code § 21000, *et seq.* ("CEQA")] in the preparation of additional environmental documentation consistent with the Statement of Decision addressing the analytic route of the three water allocations in the 2004 EIR, *i.e.*, pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18 (b) cutbacks and post-Monterey Amendments.
3. Nothing in this Writ shall be construed as commanding Castaic to set aside the Kern Water Transfer.

Nothing in this Writ, except for the commands set forth in paragraphs 1, 2 and 3, shall be construed to limit or control the discretion legally vested in you to determine the appropriate manner to comply with CEQA.

YOU ARE FURTHER COMMANDED to make and file a return to this Writ, setting forth what you have done to comply. This Court shall retain jurisdiction over your proceedings by way of that return until this Court has determined that you have complied with the commands and directions set forth in this Writ.

DATED: 5/22/07

CLERK OF THE SUPERIOR COURT

Let the forgoing writ issue.

J. Chalfant

HONORABLE JAMES CHALFANT
JUDGE OF THE SUPERIOR COURT

Presented by: McCORMICK, KIDMAN & BEHRENS, LLP
Russell G. Behrens,
David D. Boyer

DAVID D. BOYER
Attorneys for Respondent
CASTAIC LAKE WATER AGENCY

PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 695 Town Center Drive, Suite 400, Costa Mesa, California 92626.

On May 14, 2007, I served the foregoing document described as: **[PROPOSED] PEREMPTORY WRIT OF MANDATE** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list:

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[ ] (BY OVERNIGHT MAIL) I caused such document to be delivered by overnight mail to the offices of the addressee(s).

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[XX] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on May 14, 2007, at Costa Mesa, California.

Victoria A. Robinson

VICTORIA A. ROBINSON

MAILING LIST
Los Angeles County Superior Court Case No. BS 098724

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE, a California non-profit corporation;

Petitioner,

v.

CASTAIC LAKE WATER AGENCY, a public agency under the laws of California;
Respondent;

KERN COUNTY WATER AGENCY, a public agency under the laws of California; WHEELER-RIDGE MARICOPA WATER STORAGE DISTRICT, a public agency under the laws of California; DEPARTMENT OF WATER RESOURCES, a public agency of the State of California
Real Parties in Interest.

No. BS098724
(transferred from Ventura County, CIV231588 c/w CIV231606)

PETITIONERS' NOTICE OF PARTIAL APPEAL

Dept.: 13
Judge: Honorable James Chalfant
(assigned for all purposes)

Action filed: January 24, 2005
Action transferred: August 8, 2005
Trial date: March 19, 2007

CALIFORNIA WATER IMPACT NETWORK, a California non-profit corporation;

Petitioner,

v.

CASTAIC LAKE WATER AGENCY, a public agency under the laws of California;
Respondent;

KERN COUNTY WATER AGENCY, a public agency under the laws of California; WHEELER-RIDGE MARICOPA WATER STORAGE DISTRICT, a public agency under the laws of California; DEPARTMENT OF WATER RESOURCES, a public agency of the State of California
Real Parties in Interest.

Please take notice that the petitioners in the above-referenced action, Planning and Conservation League and California Water Impact Network, appeal from the following severable parts of the this Court's Judgment Granting Writ of Mandate filed on May 22, 2007 ("judgment") and served on all parties in respondents' May 23, 2007 notice of entry of judgment:

1. The part of the Court's judgment (Judgment, page 1, lines 23-26) holding that respondent Castaic Lake Water Agency's 2004 EIR for the "Kern water transfer" project identified in the Court's statement of decision (Judgment, exh. A, page 1) was "properly prepared in all other respects" besides the issue identified as the basis for entry of judgment for petitioners in the Court's decision ("the failure of the EIR to show the analytic route as to how and why the three allocations of pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18(b) cutbacks and post-Monterey Amendments are relevant and would occur").

2. The part of the Court's judgment (Judgment, page 1, lines 19-21) adopting its April 2, 2007 proposed statement of decision as its final decision, to the extent the statement of decision fails to honor petitioners' objections to that proposed statement filed on April 17, 2007.

3. The part of the Court's judgment (Judgment, page 2, lines 2-3), not directing respondent Castaic Lake Water Agency to set aside the Kern Water Transfer.

Petitioners do not appeal the Court's judgment in any other respect.

Dated: July 9, 2007

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[EXEMPT FROM FILING AND OTHER FEES, GOV. CODE § 6103]

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK,

Petitioner,

vs.

CASE NO.: BS 098724

Assigned for All Purposes:
Honorable James C. Chalfant
Department 13

(Consolidated Cases)
[Transferred from Ventura County Master File No. CIV 231588 (consolidated with Ventura County Case No. CIV 231606)]

NOTICE OF CROSS-APPEAL

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

TO THE CLERK OF THE ABOVE-ENTITLED COURT:

NOTICE IS HEREBY GIVEN that Respondent Castaic Lake Water Agency cross-appeals from the Judgment Granting Peremptory Writ of Mandate, as well as the Peremptory Writ of Mandate, entered on May 22, 2007, in the above entitled court.

Petitioners Planning and Conservation League and California Water Impact Network filed a Notice of Partial Appeal [*sic*] on July 12, 2007.

A full and complete copy of the Judgment is attached as Exhibit 1 to this Notice.

A full and complete copy of the Peremptory Writ of Mandate is attached as Exhibit 2 to this Notice.

Dated: July 19, 2007

McCORMICK, KIDMAN & BEHRENS, LLP
REMY, THOMAS, MOOSE AND MANLEY, LLP
R. BRUCE TEPPER, ALC

By: DAVID D. BOYER
Attorneys for Respondents
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ORIGINAL

FILED
LOS ANGELES SUPERIOR COURT
MAY 22 2007 F.D.
JOHN A. CLARKE, CLERK
A. Fajardo
BY A. FAJARDO, DEPUTY

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CIVIL OPERATIONS

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CASE NO.: BS 098724

Assigned for All Purposes:
Honorable James Chalfant
Department 13

(Consolidated Cases)
[Transferred from Ventura County Master File No. CIV 231588 (consolidated with Ventura County Case No. CIV 231606)]

~~[PROPOSED]~~ **JUDGMENT GRANTING PEREMPTORY WRIT OF MANDATE**

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

EXHIBIT 1

The above-entitled consolidated matter came on regularly for hearing on March 19, 2007, before the Honorable James C. Chalfant. Petitioner, Planning and Conservation League ("PCL") appeared by and through Antonio Rossman and Roger B. Moore of Rossman & Moore, LLP. Petitioner, California Water Impact Network ("CWIN") appeared by and through Babak Naficy of the Law Offices of Babak Naficy. Respondent, Castaic Lake Water Agency ("Castaic") appeared by and through David D. Boyer of McCormick, Kidman & Behrens, LLP; R. Bruce Tepper of R. Bruce Tepper, ALC; and James G. Moose of Remy, Thomas, Moose and Manley, LLP. Real Party in Interest California Department of Water Resources ("DWR") appeared by and through Deputy Attorney General Marilyn H. Levin, and Deputy Attorney General Deborah A. Wordham. Real Party in Interest Kern County Water Agency ("Kern") appeared by and through Clifford W. Schulz of Kronick, Moskovitz, Tiedmann & Girard, APC. Real Party in Interest Wheeler Ridge-Maricopa Water Storage District ("Wheeler-Ridge") appeared by and through Steven M. Torigiani of the Law Offices of Young Wooldridge, LLP.

At that time the Court heard arguments of counsel and examined key portions of the Administrative Record certified by Castaic and submitted by the parties. After considering the filings of all parties, the oral arguments of counsel, and the records and files in this case, the court took the matter under submission. After further deliberations and further review of applicable legal authorities and key documents in the Administrative Record, the Court prepared a proposed Statement of Decision, which was filed and served by the Court on April 2, 2007. The Court entered its final Statement of Decision (attached hereto as Exhibit "A," and incorporated herein by reference) on May 22, 2007, after reviewing Petitioners' April 17, 2007 objections to the proposed Statement of Decision.

IT IS THEREFORE ORDERED that:

1. The 2004 EIR having been properly prepared in all other respects, Judgment shall be entered in favor of Petitioners in this proceeding solely on the issue of the failure of the EIR to show the analytic route as to how and why the three allocations of pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18 (b) cutbacks and post-Monterey Amendments are relevant and would occur.

2. A Peremptory Writ of Mandate shall issue commanding Castaic to set aside its

certification of its 2004 EIR and to comply with CEQA consistent with the Statement of Decision.

3. The Peremptory Writ of Mandate shall not direct Castaic to set aside the Kern Water Transfer, nor shall it limit or control the discretion legally vested in Castaic to determine the appropriate manner to comply with CEQA .

3. The Court retains jurisdiction over this matter by way of return to the Peremptory Writ of Mandate.

DATED: 5/22/07

HONORABLE JAMES CHALFANT
JUDGE OF THE SUPERIOR COURT

Presented by: McCORMICK, KIDMAN & BEHRENS, LLP
Russell G. Behrens,
David D. Boyer

DAVID D. BOYER
Attorneys for Respondent
CASTAIC LAKE WATER AGENCY

California Water Impact Network v. Castaic Lake Water Agency
BS 098724

Statement of Decision on Petition for Writ of Mandate

FILED
LOS ANGELES SUPERIOR COURT
APR 0 2 2007
JOHN A. CLARKE, CLERK
A. Fajardo
BY A. FAJARDO, DEPUTY

Petitioners California Water Impact Network ("CWIN") and Planning and Conservation League ("PCL") petition for writ of mandate under California Environmental Quality Act ("CEQA"). The court has read and considered the moving papers, oppositions, and reply, heard oral argument, and renders the following decision.

A. Statement of the Case

Petitioner CWIN commenced its petition for writ of mandate in Ventura County Superior Court on January 24, 2005. The petition alleges that on December 23, 2004, the Castaic Lake Water Agency ("Castaic"), a public water agency and water wholesaler that treats and delivers water to water retailers in Los Angeles and Ventura Counties, approved the permanent transfer of 41,000 acre feet per year from Real Party in Interest Kern County Water Agency ("Kern") and its member unit in Kern County, Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), to Castaic (the "Kern water transfer," the "Kern transfer," or the "transfer"). Castaic also purported to certify the Environmental Impact Report ("EIR") for the project (the "2004 EIR" or the "EIR"). Petitioner claims the Kern water transfer "threatens to promote large-scale urban sprawl in Ventura and Los Angeles Counties, while diverting water from important environmental and agricultural uses in Kern County forever." Petitioner alleges that the 2004 EIR is premature, and fails to comply with CEQA.

The petition alleges a cause of action for violation of CEQA in that Real Party in Interest California Department of Water Resources ("DWR"), not Castaic, should have been the lead agency for the 2004 EIR, which does not adequately describe the background on which the project is based, fails to disclose a reliance on an invalid Urban Water Management Plan, fails to adequately describe alternatives to the project, including a "no project" alternative, fails to discuss growth inducement, and inaccurately states the availability of water availability.[1]

On January 24, 2005, PCL filed its own petition for writ of mandate against Castaic in Ventura County Superior Court. The PCL petition alleges a violation by Castaic in recording a Notice of Determination on December 23, 2004, certifying the 2004 EIR and rendering its approval of the Kern water transfer. The petition purports to allege five "causes of action" for violation of CEQA in the 2004 EIR based on Castaic stealing DWR's duty to be the lead agency for the EIR, certification of a defective EIR, approval of inadequate findings, erroneous presentation of the project as already complete, and "prejudicial abuse of discretion."

On June 22, 2005, upon motion by Castaic, the Ventura County Superior Court (the Honorable Frederick H. Bysshe, Jr.) ordered the transfer of both petitions, which had been consolidated, to Los Angeles. On March 27, 2006, the case was reassigned to this court.

On June 27, 2006, the court heard the demurrers of Castaic and Real Party in Interest Kern to the consolidated petitions. The court ruled that the petitions were timely filed and were

[1]On CWIN's oral motion, the petition's second and third causes of action have been dismissed. As a result, CWIN's petition solely concerns Castaic's compliance with CEQA in the 2004 EIR.

EXHIBIT "A"

not barred under the doctrine of *res judicata*. The court noted that the Kern water transfer agreements are valid. While principles of *collateral estoppel* barred Petitioners from re-raising issues resolved by the Second District with respect to the 1999 EIR, this conclusion did not foreclose the petitions and the demurrers were overruled.

On July 16, 2006, the court denied Castaic's motion for a legal determination under principles of *collateral estoppel* and party admission that Castaic is the proper lead agency for preparation of the EIR for the Kern water transfer. However, Petitioners are bound by their concession that Castaic may act as the lead agency at some point for an EIR on the Kern water transfer.

B. Preliminary Issues

1. Standing and Timeliness

Petitioner PCL alleges that it is a non-profit corporation devoted to environmental protection. PCL Pet. at ¶6-7. Some of PCL's members live in the area affected by the Kern water transfer. PCL Pet. at ¶8. Petitioner CWIN alleges that it is a nonprofit public benefit corporation the purpose of which is to protect California's environment. CWIN contends that it is impacted by the Kern water transfer because its members reside in and use the Santa Clara River watershed, which is impaired by the water transfer. CWIN Pet. at ¶9. Thus, Petitioners contend that they are impacted by the project and have standing to raise the issues herein. Respondents do not contest Petitioners' standing. *See* Waste Management of Alameda County, Inc. v. County of Alameda, (2000) 79 Cal.App.4th 1223, 1233-34.

The actions are timely on CEQA issues, each having been filed on January 24, 2005, within 30 days of Castaic's Notice of Determination that the 2004 EIR had been certified, filed in various counties between December 23 and December 27, 2004. *See* Pub. Res. Code §21167(c).

2. The Administrative Record

Castaic has certified the administrative record. Pub. Res. Code §21167.6; LASC 9.24(e). The record was received in evidence at trial.

Castaic and Kern, and DWR separately ask the court to judicially notice various records. Judicial notice is the acceptance by a court without formal proof of the existence of a matter of law or fact that is relevant to an issue in the case. People v. Rowland, (1992) 4 Cal.4th 238, 268, n.6. Certain documents are subject to judicial notice. Ev. Code §451, 452. Even where subject to judicial notice, however, a document must be relevant. Id.

The California Supreme Court decision in Western States Petroleum Assn. v. Superior Court, ("Western States") (1995) 9 Cal.4th 559, 573, n.4, provides that extrinsic evidence is generally not admissible for a traditional mandamus challenging a quasi-legislative agency action. The exclusion of extrinsic evidence in a traditional mandamus action is essentially the exclusion of irrelevant evidence. Extrinsic evidence is generally not admissible for a traditional mandamus challenging a quasi-legislative agency action. Id. Such evidence may be admissible in a narrowly construed exception in which (1) the evidence in question existed before the agency made the decision, and (2) the evidence could not have been presented to the agency in the first instance in the exercise of reasonable diligence. Id. at 578. The purpose of limiting extra-record evidence is that the free use of such evidence would invade the deference to which the legislative

branch is entitled under the constitutional separation of powers. If the courts freely considered extra-record evidence in mandamus cases, the highly deferential substantial evidence standard would be turned into a *de novo* standard where the courts in effect would decide not whether an administrative decision was supported by the evidence before the agency but instead whether it was the wisest and best decision according to the courts. Id. at 572.

Castaic asks the court to judicially notice: (1) the unpublished appellate decision in Friends of the Santa Clara River v. Castaic Lake Water Agency, 2003 Cal.App. Unpub. LEXIS 11239, dated December 1, 2003 ("Friends II"), and (2) the unpublished appellate decision in California Water Network v. Castaic Lake Water Agency, 2006 Cal.App. Unpub. LEXIS 2452, dated March 23, 2003.[2] The existence of these court decisions is subject to judicial notice. Ev. Code §452(d).[3]

DWR asks the court to judicially notice (1) Amendment No. 19 to the Water Supply Contract between it and Castaic dated May 28, 2003, and (2) Notice of Preparation of EIR for the Monterey Amendment dated January 24, 2003. DWR contends that these documents are official acts of a California agency subject to judicial notice under Ev. Code section 452(c) and (d). The Notice of Preparation is an official act of DWR and is judicially noticed. However, Amendment No. 19 is not. Official acts should be limited to regulations, public announcements, and other actions the existence of which is beyond dispute. A well informed person has no way of knowing whether Amendment No. 19 is authentic and valid. Nor is it a court record under section 452(d). DWR's request for judicial notice of Amendment No. 19 is denied.

C. Statement of Facts

1. SWP

In 1951, the Legislature authorized construction of a state water storage and delivery system. Planning & Conservation League v. Department of Water Resources, (2000) 83 Cal.App.4th 892, 898. The Legislature subsequently authorized the State Water Project ("SWP"), a complex system of 28 reservoirs and dams, 26 power and pumping plants, and 600 miles of canals and aqueducts to deliver 4.23 million acre-feet of water annually to Central and Southern California. The primary source for the SWP is the drainage of the Feather River, a tributary of the Sacramento River in Northern California (hereinafter, the "Delta").

DWR is the state agency charged with the statutory responsibility to build, manage, and operate the SWP. Essentially, DWR is the wholesale provider of water to middlemen agencies. In 1961, DWR entered into individual contracts with various agricultural and urban water suppliers in the State, referred to as State Water Contractors. *See* Water Code §12937. There are 29 agencies or districts that currently are State Water Contractors.

The SWP water contracts entitled the contractors to receive an annual amount of SWP

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[2]Castaic also supplied the court with copies of its decisions on demurrer and motion for legal determination in this case, which need not be judicially noticed.

[3]Real Party Wheeler purports to join in Castaic's request for judicial notice. In its ruling on the demurrers, the court informed Wheeler of the futility of a joinder as merely a cheerleading effort. No further discussion of the purported joinder is necessary.

water in exchange for a proportionate share of financing and maintaining the SWP facilities. Each water contract contains provisions for both allocation of the amount of water available each year and costs among the contractors. Each contract identifies a Table A amount, the annual maximum amount of water which DWR agrees to deliver, if available for delivery, to each SWP contractor on an annual basis. Delivery of the Table A amount is not assured, but rather provides the basis for proportional allocation of available water among contractors. The Table A amount is specified as either agricultural or urban (M&I). Each contract also includes Article 40, which permits water transfers between contractors, and Article 41, which requires DWR approval of any transfer subject to reasonable terms and conditions. AR 2356.

Each contractor annually submits a request to DWR for water delivery in the following year, up to the amount in Table A. In a year when DWR is unable to deliver the total of contractor requests, deliveries to all contractors will be reduced. The current Table A totals are 4.17 million acre-feet per year.[4] In fact, given existing facilities and contractor demands, the SWP can only deliver an average of 2.96 million acre-feet per year.

2. The Monterey Agreement

Historically, the delivery of less than Table A totals was not a significant problem because contractor demand was less than the Table A amounts. However, in the late 1980's and early 1990's, a drought led to SWP deliveries in amounts below that requested by contractors. Articles 18(a) and (b) of the SWP water contracts addressed DWR's temporary and permanent inability to deliver the water allocations listed in Table A of the contracts by requiring agricultural contractors to accept a reduction in water first before any remaining reduction was shared by urban contractors. In 1990, agricultural contractors received only half their requested water and none in 1991. Because contractors pay their proportionate share of fixed costs regardless of how much water is delivered, the agricultural contractors were paying for water they were not receiving and they were displeased. As a result, urban and agricultural water contractors clashed over DWR's delivery obligations and the proper interpretation of Article 18. AR 45-46.

In December 1994, five State Water Contractors and and DWR reached agreement on a broad set of fourteen principles (the "Monterey Agreement"). Among other things, the Monterey Agreement changed the allocation between agricultural and urban contractors of entitlements to SWP water. The Monterey Agreement eliminated Article 18 and specified that all SWP water was to be allocated in proportion to Table A amounts. Paragraph 24 of the Monterey Agreement provides for the permanent transfer of 130,000 acre-feet from certain willing agricultural contractors, including KWCA, to urban contractors, as implemented by individual agreement. AR 2515. It also provides that individual contractors may transfer entitlements among themselves beyond the 130,000 acre feet proposed, with DWR expeditiously executing any necessary documents and approving all such contracts. Other provisions of the Monterey Agreement include a revision of water allocations during shortages, eliminating the "agriculture first" provision, and retirement of 45,000 other acre-feet of entitlement by agricultural contractors.

[4] An "acre-foot" is the amount of water that would cover one acre one foot deep.

The Monterey Agreement provides that individual SWP contracts could be amended to conform to it. Over the next two years, 27 of the 29 Water Contractors amended their SWP contracts to implement the principles of the Monterey Agreement (collectively, the "Monterey Amendments").

In 1995, a State Water Contractor, Central Coast Water Authority ("Central"), acted as lead agency and certified a program EIR analyzing the environmental impacts of the Monterey Agreement. This program EIR also addressed Paragraph 24 (Article 53 in the Monterey Amendments) water transfers, including the Kern water transfer. In late 1995, PCL filed a lawsuit in Sacramento Superior Court challenging the program EIR, Planning & Conservation League v. Department of Water Resources, ("PCL").

3. The Kern Water Transfer Agreement

Castaic is a State Water Contractor created by the California Legislature. Its mandate is to purchase and deliver sufficient supplies of water to serve the needs of the Santa Clarita Valley. *See* Swanson v. Marin Municipal Water District, (1976) 56 Cal.App.3d 512, 524 (water district has obligation to augment available water to meet increasing demands). Castaic diverts its SWP water from the West Branch of the California Aqueduct. Castaic is one of the Water Contractors entering into the Monterey Amendments (Amendment 17 to Castaic's SWP contract).

Kern County Water Agency ("KCWA") is a special district formed by the Legislature in 1961. Wheeler Ridge is a special district formed in 1959 to provide supplemental water to agricultural lands in Kern County and is located immediately north and east of Castaic. KCWA has contracts with Wheeler Ridge and other member agencies, for KCWA's SWP water.[5]

In March 1999, Castaic entered into an agreement to purchase from Wheeler Ridge, subject to KCWA's consent, 41,000 acre-feet per year of SWP water (the Kern water transfer). The price for the transfer was $47 million in debt instruments purchased by private investors. The purpose of the transfer is to permit Castaic to serve the water demands of existing users, as well as meet a portion of future water demand from anticipated growth within the Castaic service area. AR 16. The Kern water transfer is the largest transfer under Article 53 of the Monterey Amendments, and it counts towards the 130,000 acre-feet limit. In their transfer agreement, both sides warranted that there was no pending or threatened litigation other than PCL that could affect the 41,000 acre feet SWP entitlement. AR 2562-63.[6]

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[5]In 1998, another KCWA member, Belridge Water Storage District, certified an EIR on the environmental effects of transferring 130,000 acre-feet of SWP water to unidentified purchasers. This EIR was not challenged.

[6]Castaic has been planning since 1987 to increase the supply of water to Santa Clarita Valley. At that time, Los Angeles County General Plan forecast substantial population growth in the Santa Clarita Valley. In 1988, Castaic adopted a Capital Program and Water Plan (the "Capital Program") to address the purchases, construction, and improvements necessary to meet the anticipated water demand. The Capital Program called for the purchase of SWP water from districts willing to sell, including Wheeler Ridge, and the storage of water for later use during drought conditions at Semitropic Groundwater Storage District's ("Semitropic") basins. AR

DWR's approval of the Kern water transfer was required under Articles, 15, 41, and 56 of the SWP contracts. On March 31, 1999, DWR approved the transfer by entering into Amendment 18 of Castaic's SWP contract. Amendment 18 adds Article 53(j), which provides that "in accordance with Article 53(a)" of the Monterey Amendments, Castaic's Table A annual entitlements were increased by 41,000 acre-feet. AR 2545-47. DWR and KCWA, which consented to the transfer of its water, also entered into Amendment 28 to KCWA's SWP contract, an amendment which reduced KCWA's entitlement by 41,000 acre-feet. Based on these amendments, DWR has allocated SWP water to Castaic since 1999 based on a total Table A amount of 95,000 acre-feet -- Castaic's original Table A 54,000 acre-feet plus the 41,000 acre-feet from the Kern water transfer.

On March 29, 1999, Castaic, acting as lead agency, certified an EIR for the Kern water transfer. This 1999 EIR tiered off the 1995 Monterey Amendment program EIR, the Belridge EIR, and Castaic's own 1988 EIR for the Capital Program. In April 1999, Castaic's EIR for the Kern water transfer was challenged in Friends of the Santa Clara River v. Castaic Lake Water Agency, BS056954 ("Friends"). On August 16, 2000, the trial court entered judgment, denying the petition in its entirety.

4. The PCL and Friends Decisions

In September 2000, the Third Appellate District in PCL found that DWR was the only entity with the "statewide perspective and expertise" to serve as lead agency for the Monterey Agreement program EIR. Because "the allocation of water to one part of the state has potential implications for distribution throughout the system," the court recognized DWR's principal responsibility to "facilitate the water transfers allowed under the Monterey Agreement." 83 Cal.App.4th at 907. The use of Central as lead agency for the Monterey Agreement program EIR was inappropriate. Id. at 907.

This lead agency error was not harmless because the EIR also was defective. Perhaps as a consequence of Central's lack of statewide expertise, the EIR failed to properly discuss a "no project" alternative, including the environmental impact of implementing the pre-Monterey Agreement Article 18(b)'s permanent water shortage provision. Id. at 918. This was particularly important because local land use planners rely on the "paper water" entitlements in Table A

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Pursuant to the Capital Program, Castaic permanently acquired 12,700 acre-feet of SWP Table A water in 1991 from Devil's Den Water District, a SWP contractor immediately north of Castaic. This transfer was subject to DWR approval, which per Article 41 of the SWP contracts could not be unreasonably withheld. DWR approved the transfer, noting that the transferred water remained labeled for "agricultural purposes" for purposes of delivery shortages.

Also pursuant to the Capital Program, in 2002 Castaic entered into a groundwater storage or "banking" agreement with Semitropic. This action was challenged under CEQA on the basis that the Monterey Agreement required DWR to conduct an environmental review. The challenge was rejected by the appellate court, which held that DWR had no jurisdiction over Castaic's management of water; DWR merely schedules SWP water delivery to Castaic. Cal. Water Network v. Castaic Lake Water Agency, (2006) 206 Cal.App. Unpub. LEXIS 2452, 9.

rather than real, deliverable water. The question was what impacts were reasonably foreseeable from eliminating Article 18(b)'s solution to permanent water shortage? Id. at 914-15. The PCL court held that the EIR, which lacked simulation models and projections relating to land use planning and demand for water, did not adequately address this issue. Id. at 919. It directed the Sacramento Superior Court to retain jurisdiction over the action until a new EIR was prepared and certified.

Based on the Third District's PCL decision, on January 10, 2002, the Second Appellate District reversed the judgment in Friends and directed the trial court to issue a writ of mandate compelling Castaic to set aside certification of its EIR. Friends, (2002) 95 Cal.App.4th 1373. The reversal was based solely on the fact that Castaic's EIR had been tiered upon the now inadequate Monterey Agreement program EIR. The Second District rejected all of the other challenges to Castaic's EIR, finding them to be without merit. The appellate court noted that Castaic may be able to cure the defect by waiting for DWR to comply with the Third District's directive in PCL by preparing a new program EIR. Castaic could issue a subsequent EIR, a supplement to EIR, or addendum to EIR, tiering upon the new Monterey Agreement EIR.

The Friends appellate decision concluded as follows: "The judgment is reversed. The trial court shall issue a writ of mandate vacating the certification of the EIR, shall retain jurisdiction until Respondent certifies an EIR complying with CEQA consistent with the views expressed in this opinion, and shall consider such orders it deems appropriate under [Pub. Resources Code] section 21168.9."

On October 25, 2002, after remand from the court of appeal, the Friends trial court issued a Peremptory Writ of Mandate and Judgment on Remand, retaining jurisdiction until Castaic certifies an EIR that complies with CEQA and is consistent with the views expressed by the Second District. The trial court did not direct Castaic to set aside its approval of the Kern water transfer and denied the petitioner's request to enjoin Castaic from using any of the 41,000 acre feet of additional water allotted to it by the Kern water transfer. The trial court did state that the injunction request could be renewed upon a showing that the water was actually used for an improper purpose (irreversible new development).

5. Monterey Plus

On June 6, 2003, the Sacramento Superior Court approved a settlement between the parties in PCL. That settlement, known as "Monterey Plus," provides that the Monterey Agreement can proceed on an interim basis. In exchange, DWR agreed, among other things,[7] to prepare a new program EIR for implementation of the Monterey Agreement. This new EIR would include (1) information on water deliveries during the drought and recent historical period, (2) an analysis of a no project alternative, including the environmental impact of Article 18's water shortage provisions, (3) analysis of environmental impacts from changes in SWP operations and deliveries resulting from implementation of the Monterey Agreement, (4) analysis

[7]Some of the other provisions include biennial reports on project reliability, land use restrictions on the Kern Water Bank, new guidelines for permanent water transfers, new procedures for public involvement in contract changes, and funding for watershed restoration and new technical studies. AR 45048-49.

of environmental impacts of seven already completed water transfers from KWCA and member units totaling 70,000 acre-feet (Attachment E), which the parties recognized were "final," and of the Kern water transfer, which the parties acknowledged was being challenged in the pending Friends litigation in Los Angeles Superior Court, and (5) analysis of the environmental impacts from implementation of Monterey Plus. AR 48557-59. With respect to the Kern water transfer, the Monterey Plus parties agreed that "jurisdiction with respect to [Friends] should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation." The Monterey Plus did not require DWR to re-approve or disapprove any transfer.

6. The Friends II Decision

The Second District upheld the Friends trial court's decision not to grant injunctive relief for the Kern water transfer on December 1, 2003, in unpublished case no. B164027 ("Friends II"). PCL had filed an *amicus* brief supporting the petitioner in Friends II, pointing out that the Monterey Plus settlement now existed and arguing that the Friends decision required the trial court to rely on the status of PCL litigation, including the new Monterey Agreement program EIR DWR was to prepare, in deciding injunctive relief. The Friends II appellate court stated that PCL was wrong; it merely had suggested, not required, that the trial court could determine and rely on the status of the PCL case in deciding injunctive relief.

7. The 2004 EIR

After Friends, Castaic decided to prepare a revised EIR prior to DWR's preparation of a Monterey Amendment EIR. Castaic was driven by a concern that the Friends petitioner and others would use the decertification of its 1999 EIR to cloud its right to the transferred water, as well as Castaic's duty to its customers to complete the environmental documentation and finalize the Kern water transfer.

In June 2004, Castaic prepared and circulated a draft EIR that tiered only on Castaic's 1988 Capital Program EIR. Castaic concluded that it was the lead agency because it has the principal responsibility for carrying out and implementing the project. Because the transfer is between neighboring SWP contractors, involving the withdrawal of water from a single branch of the Aqueduct, Castaic concluded that the transfer has no significant impacts on SWP operations or the water diverted from the Delta. *See* AR 13-14.

PCL served comments to the draft EIR on August 16, 2004. These comments criticized the use of Castaic as lead agency, arguing that Castaic's review was "premature" and "likely to operate at cross-purposes with DWR's statewide review." AR 1959. PCL contended that DWR, not Castaic, was required to be the lead agency under the PCL decision. Only DWR's expertise could analyze the changes in the amount of supplies available, the location and timing of deliveries, and changes in the SWP's conveyance and storage facilities for all of the proposed transfers, including the Kern water transfer. AR 1962. CWIN also timely expressed concern about Castaic's lack of authority to act as lead agency, and the potential for conflict with DWR's role. AR 578-580.

DWR, acting as a responsible agency under CEQA, commented on the draft EIR. It stated that the "document adequately and thoroughly discusses the proposed project and its

impacts. The [draft]EIR discusses the effects of the project on the environment and State Water Project (SW) and uses baseline conditions consistent with those being considered for inclusion in [DWR's EIR]. The draft also "adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions, and SWP operations." DWR acknowledged that Castaic's EIR uses a model, DWRSIM, to assess the potential impact associated with the Kern transfer and that DWR's EIR will use a newer model, CALSIM II. DWR indicated that the use of a different computer model may cause slight changes in results, which may lead DWR to different conclusions than those made by Castaic in its EIR. Despite this fact, DWR concluded that the draft EIR adequately discusses the reliability of SWP, pre- and post- Monterey Amendments conditions, future conditions, and SWP operations. AR 564-65.

Castaic rejected Petitioners' concerns, and relied on DWR's comments to refute objections that its draft EIR will be inconsistent with the yet to be prepared DWR program EIR. AR 961-4. Castaic adopted findings, a mitigation monitoring program and statement of overriding considerations and certified a final EIR (the 2004 EIR).[8] The 2004 EIR describes Castaic's water program for the future needs of Santa Clarita Valley, the procedural history of the project (including the 1999 EIR), and the fact that the Kern water transfer has been implemented and ongoing since 1999. It uses two separate baselines for the project setting and evaluates environmental impacts of the Kern water transfer on the SWP, Castaic, and Wheeler Ridge. In discussing these impacts, the 2004 EIR considers three SWP scenarios: (a) with the Monterey Agreement, (b) without the Monterey Agreement, and (c) without the Monterey Agreement and with Article 18(b) permanent shortages. The EIR uses the DWRSIM model and concludes no significant direct environmental impacts will occur as a result of the project. There would, however, be indirect growth impacts as a result of water provided by the project.

8. The Petitioners Take Over from the Friends Petitioner

On January 24, 2005, CWIN and PCL filed separate petitions for writ of mandate in Ventura County concerning Castaic's compliance with CEQA in the 2004 EIR, and other issues.

On February 1, 2005, the Friends petitioner dismissed the action with prejudice. On February 7, 2005, the trial court in Friends held a hearing on Castaic's *ex parte* application to vacate the dismissal with prejudice and to discharge the writ of mandate. Castaic argued that, by dismissing, the petitioner was attempting to get the clerk, through ministerial act, to divest the court of its continuing jurisdiction over the 2004 EIR prepared in response to the court's peremptory writ of mandate. Instead, the Friends petitioner was passing the baton to CWIN and PCL for a challenge to the 2004 EIR. The trial court declined to set aside the dismissal, stating that whether the Ventura proceedings were a continuation of the Friends lawsuit was an issue of fact for the Ventura (now this) court.

On March 5, 2005, Castaic petitioned the Second Appellate District for a writ of mandate with respect to the trial court's refusal to vacate the dismissal, arguing that the trial court violated Pub. Resources Code section 21168.9 (stating that the trial court shall maintain jurisdiction over the agency's proceedings until the court has determined that the agency has complied with

[8] On December 30, 2004, Castaic filed its return to the peremptory writ of mandate in Friends.

CEQA) because it had not yet determined that the 2004 EIR complied with CEQA Yet, under CEQA, a trial court that orders preparation of a new EIR must retain jurisdiction for a final determination of the EIR's validity.

On April 14, 2005, the Second Appellate District denied Castaic's petition for "failure to demonstrate that the 'retain jurisdiction' provision of Public Resources Code section 21168.9, subdivision (b), abrogates the entitlement to voluntary dismissal conferred by Code of Civil Procedure section 581, subdivision (b)(1)."[9]

D. CEQA

1. Standard of Review

A party may seek to set aside an agency decision for failure to comply with CEQA by petitioning for either a writ of administrative mandamus (CCP §1094.5) or of traditional mandamus. CCP §1085. A petition for administrative mandamus is appropriate when the party seeks review of a "determination, finding, or decision of a public agency, made as a result of a proceeding in which by law a hearing is required to be given, evidence is required to be taken and discretion in the determination of facts is vested in a public agency, on the grounds of noncompliance with [CEQA]." Pub. Res. Code §21168. This is generally referred to as an "adjudicatory" or "quasi-judicial" decision. Western States Petroleum Assn. v. Superior Court, ("Western States") (1995) 9 Cal.4th 559, 566-67. A petition for traditional mandamus is appropriate in all other actions "to attack, review, set aside, void or annul a determination, finding, or decision of a public agency on the grounds of noncompliance with [CEQA]." Where an agency is exercising a quasi-legislative function, such as by adopting a rule or entering into a contract, it is properly viewed as a petition for traditional mandamus. Id. at 567; Pub. Res. Code §21168.5.

At issue here is a CEQA challenge to a quasi-legislative action recorded by Castaic in a December 23, 2004 Notice of Determination approving the project, certifying the 2004 EIR, and adopting findings, a mitigation monitoring program, and a statement of overriding considerations. This procedural setting, where no administrative hearing was held or required, is governed by traditional mandamus. In determining whether to grant a petition for traditional mandamus in a CEQA case, the court may consider only whether there was a prejudicial abuse of discretion. Public entities abuse their discretion under CEQA if the agency has not proceeded in a manner required by law or if its determination or decision is not supported by substantial evidence. Western States, 9 Cal.4th at 568; Pub. Res. Code §21168.5.[10]

This requires "scrutiny of the alleged defect" depending on whether the claim is predominately "improper procedure or dispute over the facts." Vineyard Area Citizens for

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[9]The Second District later dismissed Castaic's appeal from the Friends dismissal, finding that the voluntary dismissal was not appealable. *See* H.D. Arnaiz, Ltd. v. County of San Joaquin, (2002) 96 Cal.App.4th 1357, 1364-67.

[10]The standard of review for traditional mandamus in a non-CEQA case is governed by an "arbitrary and capricious" standard, not a "prejudicial abuse of discretion" standard. The CEQA standard is the more stringent inquiry. Western States, 9 Cal.4th at 574.

Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412, 435. Whether Castaic is the proper lead agency is an procedural issue of law for the court. PCL, 83 Cal.App.4th at 905-06. Similarly, as Petitioners argue (Pet. Supp. Resp. Br. at 5), whether Castaic's 2004 EIR failed to provide certain required information and, as a result, presents uncertainties about the finality of the Kern water transfer is failing "to proceed in a manner required by CEQA" and an issue of law. Vineyard, 40 Cal.4th at 435. These issues require "a critical consideration, in a factual context, of legal principles and their underlying values." Harustak v. Wilkins, (2000) 84 Cal.App.4th 208, 212.

On the other hand, whether Castaic abused its discretion in the 2004 EIR's findings must be answered with reference to the evidence in the administrative record. This standard requires deference to the agency's factual and environmental conclusions based on conflicting evidence, but not to issues of law. Laurel Heights Improvement Assn. v. Regents of University of California, ("Laurel Heights") (1988) 47 Cal.3d 376, 393, 409. Argument, speculation, and unsubstantiated opinion or narrative will not suffice.[11] Guidelines, 15384(a), (b). The findings must be supported by "substantial evidence," defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. CEQA Guidelines §15384(a). The question whether substantial evidence exists is a question of law. *See* California School Employees Association v. DMV, (1988) 203 Cal.App.3d 634, 644.

2. CEQA

The purpose of CEQA (Pub. Res. Code §21000 *et seq.*) is to maintain a quality environment for the people of California both now and in the future. Pub. Res. Code §21000(a). "[T]he overriding purpose of CEQA is to ensure that agencies regulating activities that may affect the quality of the environment give primary consideration to preventing environmental damage." Save Our Peninsula Committee v. Montery County Board of Supervisors, (2001) 87 Cal.App.4th 99, 117. CEQA must be interpreted "so as to afford the fullest, broadest protection to the environment within reasonable scope of the statutory language." Friends of Mammoth v. Board of Supervisors, (1972) 8 Cal.3d 247, 259. Public agencies must regulate both public and private projects so that "major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." Pub. Res. Code §21000(g).

The Legislature chose to accomplish its environmental goals through public environmental review processes designed to assist agencies in identifying and disclosing both environmental effects and feasible alternatives and mitigations. Pub. Res. Code §21002.

Under CEQA, a "project" is defined as any activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (1) undertaken directly by any public agency, (2) supported through contracts, grants, subsidies, loans or other public assistance, or (3) involving the issuance of a lease, permit,

[11] As an aid to carrying out the statute, the State Resources Agency has issued regulations called "Guidelines for the California Environmental Quality Act ("Guidelines"), contained in Code of Regulations, Title 14, Division 6, Chapter 3, beginning at section 15000.

license, certificate, or other entitlement for use by a public agency. Pub. Res. Code §21065. The word "may" in this context means a reasonable possibility. Citizen Action to Serve All Students v. Thornley, (1990) 222 Cal.App.3d 748, 753. "Environment" means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance. Guidelines, §21060.5.

The "project" is the whole of the action, not simply its constituent parts, which has the potential for resulting in either direct or reasonably foreseeable indirect physical change in the environment. Guidelines §15378. An indirect physical change must be considered if that change is a reasonably foreseeable impact which may be caused by the project. On the other hand, a change that is "speculative or unlikely to occur is not reasonably foreseeable." Guidelines §15064(d)(3). The term "project" may include several discretionary approvals by government agencies; it does not mean each separate government approval. Guidelines §15378(c).

The EIR is the "heart" of CEQA, providing agencies with in-depth review of projects with potentially significant environmental effects. Laurel Heights, 6 Cal.4th at 1123. An EIR describes the project and its environmental setting, identifies the potential environmental impacts of the project, and identifies and analyzes mitigation measures and alternatives that may reduce significant environmental impacts. Id. Using the EIR's objective analysis, agencies "shall mitigate or avoid the significant effects on the environment... whenever it is feasible to do so. Pub. Res. Code §21002.1. The EIR serves to "demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions." No Oil, Inc. v. City of Los Angeles, (1974) 13 Cal.3d 68, 86. It is not required to be perfect, merely that it be a good faith effort at full disclosure. Kings County Farm Bureau v. City of hanford, (1990) 221 Cal.App.3d 692, 711-12. A reviewing court passes only on its sufficiency as an informational document and not the correctness of its environmental conclusions. Laurel Heights, 47 Cal.3d at 392. An EIR will be upheld if it suffices as an informational document; mandate will issue only if it fails to include relevant information which precludes informed decision-making and informed public participation.

"Choosing the precise time for CEQA compliance involves a balancing of factors. EIRs... should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design and yet late enough to provide meaningful information for environmental assessment." Guidelines, §15004(b). As a general rule, public agencies shall not undertake actions concerning a proposed project that would have a significant adverse effect or limit the choice of alternatives or mitigation measures before completion of CEQA compliance. Guidelines, §15004(b)(2). "[I]n order to achieve the salutary objectives of CEQA the determination of the earliest feasible time to [prepare the CEQA document] is to be made initially by the agency itself, which decision must be respected in the absence of manifest abuse." Mount Sutro Defense Committee v. Regents of University of California, (1978) 77 Cal.App.3d 20, 36, 40.

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E. Analysis

CWIN and PCL argue that DWR is required to be the lead agency for the Monterey Amendments project EIR, which will examine all water transfers on a program level. The Kern

water transfer is part of the Monterey Amendments project. Therefore, DWR is the correct lead agency to conduct the environmental review of the Kern water transfer. According to Petitioners, while Castaic may not serve as the lead agency for "first-level" environmental review of the water transfer, it may serve as lead agency for a project level EIR for the Kern water transfer.

1. Validity of the Transfer

At the outset, the court must make clear an issue greatly discussed at hearing. Petitioners contend, and Castaic and Wheeler Ridge strongly dispute, that DWR may "invalidate" the Kern water transfer when it performs the program EIR.

Under contract and validation law, the Kern water transfer contract, entered into in 1999, is valid, has been approved by DWR, and Castaic has paid Wheeler Ridge for it. Neither the parties nor DWR can terminate the Kern transfer contract. Nothing in CEQA permits a public agency to void a contract.

In Kenneth Mebane Rranches v. Superior Court, (1992) 10 Cal.App.4th 276, a flood control district sought to condemn land outside its territory in order to mitigate the environmental impact of a project within its boundaries. The appellate court held that CEQA only requires mitigation of environmental impacts where it is feasible to do so. Where mitigation is infeasible, an agency can always approve a project notwithstanding environmental impacts if it issues a statement of overriding interests. But it cannot take actions that are not legal, and hence infeasible. 10 Cal.App. at 291-92.

Thus, in evaluating the environmental effects of the Monterey Agreement, DWR may impose mitigations that are legal. But it cannot invalidate the Kern transfer. The imposition of illegal mitigations would be infeasible. *See also* Pub. Res. Code §21004 (in mitigating significant environmental impact, agency may only employ powers provided by law).[12]

This does not mean that DWR's Monterey Amendments EIR cannot affect the Kern water transfer. DWR's EIR will consider the environmental impacts of the Kern water transfer in conjunction with the Attachment E transfers which the parties in Monterey Plus agreed were completed and final. DWR conceivably could conclude that these transfers have significant environmental impacts. As a consequence, DWR might have to impose feasible mitigation measures, adopt alternatives, or make a finding of infeasibility and adopt a statement of overriding considerations.[13] If mitigations/alternatives are adopted, they could significantly impact Castaic and Wheeler Ridge. As DWR states, "the contract amendments that effectuated the transfers under the Monterey Amendment[s] do not preclude DWR in its choice of

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[12]The parties disagree on whether the Monterey Amendments are valid and final. That is, they disagree on whether the amendments can be challenged in a reverse validation action separate and apart from CEQA. Resolution of this issue is unnecessary to the court's decision.

[13]At hearing, Petitioners' counsel stated that the parties to Monterey Agreement entered into a joint statement of the possible impacts from the Amendments, citing AR 48628-29. The joint statement at those pages of the record does not discuss possible mitigations; it merely summarizes the terms of Monterey Plus.

alternatives in the Monterey Amendment[s] EIR or mitigation measures that may need to be imposed to reduce significant impacts to less than significant." DWR Br. at 20. DWR gives an example of reducing the amount of SWP water to protect water quality standards for fish in the Delta. Id. at 20. These mitigations could undermine the Kern water transfer.[14] But DWR will not be considering whether the Kern water transfer is valid; it simply does not have the authority to void that transfer. *See* Kenneth Mebane Ranches v. Superior Court, (1994) 10 Cal.App.4th 276, 292.

2. Lead Agency Law

The lead agency under CEQA is the agency that carries out a project or has primary authority for approving a project. Pub. Res. Code 121067; Guidelines §15051; *see* PCL, 83 Cal.App.4th at 904 (DWR, not Central (a State Water Contractor), had principal responsibility for carrying out the Monterey Agreement and should have been lead agency for program EIR). The role and responsibility of the lead agency is "fundamental to the CEQA process as a whole." Guidelines §15050. The identification of the proper lead agency plays a "crucial role" in the division of responsibilities among public agencies reviewing a project. PCL, 83 Cal.App.4th at 903. When determining the appropriate lead agency, the courts look to determine which agency has principal responsibility for the core project activity. Friends of Cuyamaca Valley v. Lake Cuyamaca, (1994) 28 Cal.App.4th 419, 427. The lead agency responsibility is placed upon the agency with power to approve or disapprove the project. Lexington Hills v. State of California, (1988) 200 Cal.App.3d 415, 433. Though one agency has substantial responsibility for a project, it cannot act as lead agency if another agency bears final responsibility. *See* Fullerton Joint Union High School District v. Board of Education, (1982) 32 Cal.3d 779, 795, n.15 (State Board of Education, not county, had final responsibility for school district plan). Where the project is local, such as land use decisions, the agency that has general governmental power over a project is almost always the lead agency. Where two or more agencies are involved in a project, the agency that will carry out the project shall be the lead agency. Guidelines §15051(a).

3. The Impact of the PCL Decision

Petitioners contend that the PCL decision left no doubt that DWR is the appropriate lead agency for a program-level environmental review of the water transfers in the Monterey Agreement, contrasting DWR's statewide expertise with CCWA's "provincial experience." The Monterey Amendments restructure water distribution throughout the state, and the "allocation of water to one part of the state has potential implications for distribution throughout the system." Only DWR has principal responsibility for implementation of the Monterey Amendments. Op. Br. at 11-12; *see* PCL, 83 Cal.App.4th at 904, 908. Since the Kern water transfer is part of the Monterey Amendments, DWR must perform any EIR concerning the Kern water transfer.

Petitioners' argument is a *non-sequitur*. Nothing in PCL requires DWR to perform the environmental review for the Kern water transfer. Certainly, the PCL decision requires that DWR prepare the program EIR for the Monterey Amendments, now Monterey Plus. The

[14]The close cooperation between DWR and Castaic on the 2004 EIR reduces, but does not eliminate, the prospect that DWR will impose alternatives or mitigations.

appellate court's reason for committing this task to DWR is that CEQA requires the lead agency to be the agency with principal responsibility for the project, the project is the environmental review of the Monterey Agreement, and DWR, not CCWA, has principal responsibility for implementing the Monterey Agreement. The decision pointed out that DWR manages the SWP, and has the statewide expertise and perspective to conduct the environmental review of the Monterey Agreement, which statewide project. While CCWA may have had a substantial stake in seeing the Monterey Agreement implemented, it did not have principal responsibility for it. DWR did, and DWR is required to perform the EIR for the Monterey Agreement. 83 Cal.App.4th at 906.

However, the PCL decision does not commit DWR to conduct the EIR for the Kern water transfer, or for any site specific project conducted pursuant to the Monterey Amendments. The PCL decision plainly requires DWR to prepare the program EIR for the Monterey Amendments, and its permanent transfer of 130,000 acre feet of SWP water. But it does not even mention the Kern water transfer, which is a local water transfer of Wheeler Ridge water to a point 60 miles further south in Santa Clarita Valley. The local nature of the project makes Castaic the logical choice to act as lead agency of this transfer, and nothing in PCL requires Castaic to wait for DWR's program EIR. The Kern water transfer is simply a different project from the Monterey Amendments.

Petitioners' concession that at some point Castaic can and should act as the lead agency for the Kern water transfer EIR undermines their argument that PCL committed this task to DWR. The concession shows that Petitioners really are concerned about the timing of this project specific EIR, and not whether it was committed to DWR in the PCL decision. Petitioners contend that Castaic must wait for DWR's Monterey Amendments program EIR and tier off of it for the Kern water transfer EIR. This argument is, as Castaic describes it, that Castaic "jumped the gun" by preparing the 2004 EIR. But the argument implicitly concedes that PCL did not commit the transfer EIR to DWR.

4. The Agency with Principal Responsibility

Even if PCL did not commit environmental review of the Kern water transfer to DWR, Petitioners argue that the Kern water transfer is an integral part of the Monterey Amendments project. This is shown by Monterey Plus, which excludes the Kern water transfer from the list of transfers designated as "final" and recognizes DWR's responsibility to assess its environmental impacts as part of the programmatic review. The Kern water transfer contract itself expressly relies on the Monterey Amendments, using its provisions as authority to accomplish the Kern water transfer. Even Wheeler Ridge's amendment to its SWP contract identifies the outcome of PCL as a factor that could impact the Kern water transfer's effectiveness. All of these facts, Petitioners argue, mean that the transfer is part of the Monterey Amendments environmental review.

Petitioners further argue that the nature of a program EIR supports their position. This purpose "is to document a series of actions so related they can be characterized as one project." Friends, 95 Cal.App.4th at 1377. The Monterey Amendments, including its transfer provisions, qualify as a "series of actions so related that they can be characterized as one project." An integrated review of the entire program may provide occasion for a more exhaustive

consideration of effects and alternatives than would be practical in an EIR on an individual action, ensure consideration of cumulative actions that might be slighted on a case-by-case analysis, avoid duplicative reconsideration of basic policy considerations, and allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basis problems or cumulative impacts. Id. at 1377. These factors are all borne out by the 2004 EIR, which presents a series of issues (the amount of supplies available to several water agencies, the location and timing of SWP deliveries, and use of SWP conveyance and storage facilities) on which DWR has superior expertise and greater accountability than Castaic. DWR may not delegate to Castaic its responsibility to prepare the environmental review for the Kern water transfer.

Under lead agency law, Castaic may act as lead agency and prepare an EIR for the Kern water transfer. The Kern water transfer is a project separate in time from the Monterey Amendments, now Monterey Plus. The core of the project is a local transfer of water between Castaic and Wheeler Ridge. Castiac alone had the responsibility to determine the water needs of its service area and to obtain the necessary water for those needs. Castaic negotiated and entered into the transfer contract with Wheeler Ridge. Castaic performed the contract by obtaining private investors who paid $47 million to Wheeler Ridge's water, and by taking delivery from DWR. The transfer is valid and cannot be challenged. Thus, Castaic has the general governmental power over the transfer, and is presumptively the lead agency for its own project. Bakman v. Dept. of Transportation, (1979) 99 Cal.App.3d 665, 678-79. Indeed, the environmental review of water transfers is generally performed by a local, not state, agency. County of Amador v. El Dorado County Water Agency, (1999) 76 Cal.App.4th 931 (local agency's analysis of water transfer project); Save Our Carmel River v. Monterey Peninsula Water Management District, (2006) 141 Cal.App.4th 677, 701 (city was lead agency as recipient of water transfer); Friends of the Eel River v. Sonoma County Water Agency, (2003) 108 Cal.Appp.4th 859 (local agency's EIR for plan to increase diversions of water from river); Sierra Club v. West Side Irrigation District, (2005) 128 Cal.App.4th 690 (local agency's environmental review of two projects to transfer water rights).[15]

It is true that DWR has an overall interest in promoting effective water management on a statewide basis. Pursuant to this interest, DWR had the right to approve the Kern water transfer, and it did so. This does not equate to principal responsibility, however. DWR is required by statute to "facilitate" the voluntary transfer of water between local agencies. Water Code §109.

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[15]The Friends court implicitly decided that Castaic may act as lead agency for the Kern water transfer. The Friends court acknowledged that it was required to address all deficiencies in the EIR unless it made a finding of improper lead agency. Pub. Res. Code §21005(c). If Castaic was the improper lead agency for the 1999 EIR, the appellate court was obligated to say so. The Friends court concluded that the 1999 EIR's only deficiency was that it tiered from the defective Monterey Agreement program EIR. Thus, the decision necessarily implied that Castaic was the proper lead agency for the 1999 EIR.

Of course, this case concerns the 2004 EIR, not the 1999 EIR, and the court previously held that Petitioners were not bound by the Friends court's implied determination. But the project is the same, and the implicit appellate determination is entitled to weight.

Per the SWP contracts, DWR's approval of the Kern water transfer could not be unreasonably withheld. Thus, DWR's involvement in the transfer is to facilitate the transfer by approving it and providing the SWP schedule delivery. Moreover, the SWP is intended as a supplement, not the exclusive supply, of water. Water supply decisions must be made by local Water Contractors, who obtain water both from SWP and other sources.[16]

Given that the decision to enter into the Kern water transfer belonged solely to Castaic and Wheeler-Ridge, and that DWR's approval is necessary merely to facilitate the transfer, Casataic had principal responsibility for the transfer.[17]

5. Project Definition

Petitioners contend for the first time in their Supplemental Vineyard Reply and at oral argument that the correct project definition is not the Kern water transfer, but is really the Monterey Amendments, citing the court's earlier ruling on Castaic's motion for legal determination that the key issue is whether the Amendments are a "series of actions (including the Kern water transfer) so related that they should be characterized as a single project." Pet. Supp. Reply at 5.

The correct definition of the project -- whether it is the Monterey Amendments or the Kern water transfer -- is a different issue than whether Castaic can act as lead agency for the project. Although the court did allude to project definition in ruling on the earlier motion, Petitioners never raised this issue in their opening brief or reply. Instead, they raise it for the first time in a reply brief on the application of Vineyard to this case. On appeal, an issue raised without analysis or authority lacks foundation and need not be addressed. City of Arcadia v. State Water Resources Control Board, ("Arcadia") (2006) 135 Cal.App.4th 1392, 1429, 1431. Similarly, an issue raised for the first time in supplemental reply deprives the opposing party of an opportunity to analyzing the issue and defend their position. Petitioners have waived the correct project definition as an issue by not raising it earlier.

Assuming *arguendo* that the issue has not been waived, a project under CEQA includes an activity directly undertaken by a public agency which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. Pub. Res. Code §21065(a). The "project" must be broadly defined, so as to ensure against avoiding environmental review by "chopping a larger project into little ones" or "piecemealing." Bozung v. Local Agency Formation Commission, (1975) 13 Cal.3d 263, 283-84. The project includes "the whole of an action" that has a potential for resulting in a direct or indirect physical change in the environment. Guidelines §15378. An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a

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[16]As Wheeler Ridge points out, DWR was not the lead agency for the 1991 Devils Den transfer or any of the Attachment E transfers listed in the Monterey Agreement.

[17]Given that DWR's approval may not be unreasonably withheld, cases holding that a state agency should prepare the EIR where it has final authority to approve a project are simply inapposite. *See* Fullerton v. State Board of Education, (1982) 32 Cal.3d 779, 795, n.15 (State Board of Education had final authority to submit plan to voters for new unified school district).

proposed activity. Mcqueen v. Board of Directors, (1988) 202 cal.App.3d 1136, 1143. The agency must avoid "piecemealing" or splitting a project into two or more segments. Otherwise, the cumulative environmental impacts of each piece may not be fairly analyzed. Burbank-Glendale-Pasadena Airport Authority v Hensler, (1991) 233 Cal.App.3d 577, 592. On the other hand, CEQA was not intended to and cannot reasonably be construed to make a project of every activity of a public agency, regardless of the nature and objective of such activity...." Simi Valley Recreation & Park District v. Local Agency Formation Commission, (1975) 51 Cal.App.3d 648, 663.

In San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus, (1994) 27 Cal.App.4th 713, 731-32, the court held that the project description in an EIR was improperly restricted to a 633 single family residential units, a 40,500 square foot commercial center, and a 14 acre park, failing to include sewer expansion which the EIR acknowledged would be required as part of the development. Although a separate EIR was prepared for the sewer expansion, neither it nor the development project EIR referred to the growth-inducing effects of the two projects considered together. This failure to address cumulative impacts was a separate failure of the development EIR. 27 Cal.App.4h at 733. "[t]he danger of filing separate environmental documents for the same project is that considration of the cumulative impact on the environment of the two halves of the project may not occur. This danger was here realized." Id. at 734 (citation omitted). Because the EIR did not "adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project" informed decision-making was precluded, the EIR was inadequate. Id.

The lesson from San Joaquin and other project definition cases is that the project should be defined broadly to ensure a complete analysis of impacts resulting from future expansion or continuation of other phases of the project.

In this case, DWR is the lead agency for the Monterey Amendments program EIR. DWR's description of its project is to improve the management of SWP supplies and operations through the Monterey Amendments. Thus, the Monterey Amendments EIR is broad in scope. The EIR will look at changing the allocation of all SWP water supplies (including deletion of agriculture first shortage provisions), retiring 45,000 acre feet of agricultural water, and establishing more efficient use of SWP facilities. As part of the analysis, it will analyze the potential impacts from permanently transferring 130,000 acre feet of water from agricultural to urban contractors per the Monterey Agreement. This analysis will look at the individual transfers, including the Kern water transfer, as they fit the entire Monterey Amendments. But DWR does not intend to consider each transfer individually; it intends to evaluate the impact of all the Attachment E transfers and the Kern water transfer as a whole. DWR Br. at 17.

Castaic's 2004 EIR project description concerns the impacts of the Kern water transfer alone. Castaic's EIR does look at cumulative impacts of the project with other projects, including the Monterey Amendments, but does not purport to assess the environmental impacts of the Monterey Amendments independent of the Kern water transfer. AR 141-42.

Castaic relies on the independent utility test to argue that the Kern water transfer is a separate project the environmental impact of which may be separately analyzed from the Monterey Amendments. The "independent utility" test has been developed in NEPA cases to determine whether multiple actions are connected so as to require an agency to consider them in

a single environmental review. Wetlands Action Network v. United Sates Army Corps. Engineers, (9th Cir. 2000) 222 F.3d 1105, 1118.[18] Pursuant to the independent utility test, where each of two projects would have taken place with or without the other, each has "independent utility" and the two are not considered so connected that an agency must consider them in a single environmental review. Native Ecosystems Council v. Dombeck, (9th Cir. 2002) 304 F.3d 886, 894. *See also* DelMar Terrace Conservancy, Inc. v. City Council of the City of San Diego, (1992) 10 Cal.App.4th 712 (freeway segment was separate project serving a viable purpose even if long-term, multi-segment plan to expand freeway never occurred, and had independent utility under CEQA).

Castaic argues that it has contemplated the Kern water transfer since 1988, when it included a transfer with Kern in its 1988 Capital Program for the Santa Clarita Valley's future water needs. For economic reasons, Wheeler Ridge, too, sought to transfer its SWP water rights since approximately 1985. Castaic concludes that the Kern water transfer would have occurred with or without the Monterey Amendments. Articles 40 and 41 of the SWP contract permitted transfers between Water Contractors, subject to DWR approval. Article 53, added to the SWP contracts by the Monterey Amendments and concerning the transfer of 130,000 acre-feet, did not "enlarge, restrict, or otherwise impact" Castaic's right to acquire water from Wheeler Ridge under Articles 40 and 41. Instead, it was merely a blanket approval of certain contemplated transfers. Castaic Op. Br. at 21. The Kern water transfer was completed, paid for, and operating since 1999. Nothing about it is tied to the outcome of the Monterey Amendments. Thus, while the transfer is part of a larger scheme (the Monterey Amendments), it is a long-planned site specific project with independent utility from the Monterey Amendments.

The court cannot conclude that the Kern water transfer would have taken place without the Monterey Amendments. True, Castaic has wanted Wheeler Ridge's SWP allocation of water since the late 1980's, and Wheeler Ridge was willing to provide it. Yet, it did not happen until after the Monterey Amendments. The contract between Castaic and Wheeler Ridge states that the transfer was taking place "in accordance with" Article 53 of the Monterey Amendments, and those Amendments change the way SWP water is allocated in California. It does not say that the transfer is being made under Article 41. Petitioners contend, and the court agrees, that only through conjecture can one conclude that Castaic and Wheeler Ridge would have entered into the transfer without the Monterey Amendments, and with Article 18's agriculture first provisions in place.[19]

Though the court cannot conclude that the Kern water transfer would have occurred without the Monterey Amendments, it can conclude that the transfer will remain in effect even if the Monterey Amendments are not approved or otherwise are mitigated under CEQA. The court

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[18]Since CEQA was modeled on the federal NEPA statute, federal decisions on NEPA are persuasive authority on CEQA issues. No Oil, Inc. v. Los Angeles, (1974) 13 Cal.3d 68, 86.

[19]When Petitioners commented on the draft EIR that any pre-Monterey Amendments transfer would be subject to Article 18's agriculture first provisions, Castaic did not say that the Kern transfer would have occurred without the Monterey Amendments. It merely responded that the transfer "could occur" either pre- or post- Monterey Amendments. AR 993.

already has indicated that the Kern water transfer is final. The parties to the transfer stated at hearing that they have no intention of rescinding it even if the Monterey Amendments are mitigated and Article 18's agriculture first provisions are in effect. This position is supported by the fact that the 2004 EIR evaluates the water supply impacts of just such a pre-Monterey Amendment Article 18 scenario. AR 186. As such, it is compelling evidence that the transfer will stand.[20]

Plainly, then, the Kern water transfer is final and will remain in place whatever happens to the Monterey Amendments. As such, the transfer has "independent utility" for purposes of environmental review. It is not so connected to the larger Monterey Amendments that the two must must be considered in a single environmental review. *See* Native Ecosystems Council v. Dombeck, 304 F.3d at 894.

6. EIR Timing

Petitioners' real argument seems to be that, whenever a program EIR is anticipated, the agency preparing an EIR for a specific project must wait for the program EIR.

This is not the law. Nothing in CEQA requires Castaic to wait for DWR's program EIR. Indeed, as a general proposition, the environmental review process should be undertaken early enough in the planning process to impact planning decisions, with the timing committed to the agency's discretion. City of Vernon v. Board of Harbor, (1988) 63 Cal.App.4th 677, 690-91. The Kern water transfer occurred almost eight years ago. It has been paid for and operating for a number of years. Castaic tried to conduct a timely environmental review, but that EIR was set aside in Friends. It is not an abuse of discretion for Castaic to want to complete the environmental review and obtain finality for the transfer without waiting for DWR's program EIR of the Monterey Amendments, now Monterey Plus.

Nor does this decision frustrate the law concerning program EIRs and tiering. The purpose of a program EIR is to document a series of actions so related that they can be characterized as one project. Friends, 95 Cal.App.4th at 1377. If the program EIR is sufficiently comprehensive, the lead agency may dispense with further environmental review for later activities within the program that are adequately covered in the program EIR. Guidelines §15618(c). Thus, the program EIR may be used to focus or simplify later environmental review, or as the basis of a tiered EIR. "Tiering" means the coverage of general matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance, followed by narrower or site-specific EIRs which incorporate by reference the discussion in the prior report. *See* Pub. Resources Code §§ 21068.5, 21093 and Guideline §§ 15152, 15385. Tiering is favored "whenever feasible, as determined by the lead agency." Pub. Resources Code §21093(b). It is required where a prior EIR has been prepared and certified for a program, plan, or ordinance. Pub. Resources Code §21094(a). However, tiering is only required "where a prior environmental report has been prepared and certified for a program." Friends, 95 Cal.App.4th at 1383. It is not required, and in fact is prohibited, where the program EIR has yet to be prepared. Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412

[20]Petitioners think so too, for their principal argument is premised on the 2004 EIR's assumption that the transfer is final for all purposes.

EIR cannot tier off of *future* environmental document).

7. Vineyard

In Vineyard, the Supreme Court addressed a county prepared EIR for a large land use development project known as "Sunrise Douglas." The principal issue was the availability of long-term water supply for the project, and the environmental impacts and mitigation for such supply. The Supreme Court analyzed the various water supply cases and distilled several principles. First, the EIR for a land use project must present sufficient facts to evaluate the pros and cons of supplying the amount of water the project will need, and not simply ignore or assume a water supply solution will be found for a development project. Second, an adequate EIR for a large project must show water supply for the entire project. It is not enough to show available water for early stages. While the agency may tier and defer analysis of certain details of later phases of long-term or complex projects, deferring analysis through tiering is appropriate when the impacts or mitigation measures are not determined by the first-tier approval and are specific to later phases. Third, the future water supplies identified and analyzed must bear a likelihood of actually being available. Finally, where there is some uncertainty about availability, CEQA requires some discussion of possible replacement sources or alternatives, and their environmental consequences.

Of particular use herein, the Supreme Court discussed the EIR's reliance on an anticipated local Water Board's master plan update, which would discuss the availability of long-term water supplies to the area and their environmental impact. The Court held that the county's EIR cannot tier from a *future* environmental document. If the environmental analysis from the Water Board's anticipated master plan update was important to understanding the long-term water supply for Sunrise Douglas, it should have been performed in the Sunrise Douglas EIR even though that might result in subsequent duplication by the Water Board's master plan update. Or, the county could have deferred analysis and approval of Sunrise Douglas until the Water Board's master plan update, then tiered the Sunrise Douglas EIR from the programmatic analysis performed by the Water Board.

The Vineyard decision shows that the timing of Castaic's project specific EIR in relation to DWR's program EIR is up to Castaic. It may either wait for DWR's program EIR and tier off of it, or prepare its own EIR for the Kern water transfer first. If it chooses the latter, Castaic may not tier off an environmental document that does not yet exist. Instead, Castaic must analyze all necessary environmental impacts and mitigations. If analysis of some portion of the Monterey Amendments is important to understanding the environmental impacts of the Kern water transfer, then analysis of that issue must be included in Castaic's EIR. But if Castaic's EIR does so, it is irrelevant that the document duplicates some of what DWR would do, or even that it may be inconsistent with DWR's analysis.[21] As DWR contends, CEQA's goal is to ensure sufficient information; it contains no prohibition against too much information. DWR Br. at 21. The timing of Castaic's EIR for the Kern water transfer is up to Castaic and Castaic alone.

[21] As previously stated, the prospect of inconsistencies between Castaic's EIR and DWR's program EIR is diminished by Castaic's use of DWR modeling, DWR's comments and input into the 2004 EIR, and the general cooperation and coordination between the two agencies.

F. Contents of the 2004 EIR

Apart from the proper lead agency, Petitioners argue that the 2004 EIR is inadequate. Initially, the court believed that Castaic could have real problems on this issue. It is one thing for Castaic to act as lead agency on a water transfer before the program EIR is prepared; Vineyard and other case law say that Castaic may do so. But the EIR must be adequate and complete. Vineyard teaches that if analysis of some portion of the Monterey Amendments is important to understanding the environmental impacts of the Kern water transfer, then that analysis must be included in Castaic's EIR. PCL held that the "no project" alternative was particularly important for the Monterey Amendments, and the public was entitled to know what would happen if the Amendments were not approved and Article 18 was implemented in the event of water shortage. Commentators particularly wanted to know whether imposition of Article 18 might eliminate the "paper water" entitlements in the water contracts, reduce land planning decisions based on that paper water, and ultimately reduce growth and construction of additional SWP facilities. PCL, 83 Cal.App.4th at 892-3.

The court wondered whether Castaic would have the expertise to perform any analysis of the Monterey Amendments or the "no project" alternative that would be required in the 2004 EIR. However, the parties' briefs, and oral argument at hearing, have demonstrated that, with one exception, the 2004 EIR's contents are sufficiently presented. Indeed, Petitioners barely criticize the 2004 EIR's adequacy, except as it impacts the lead agency issue.

1. "Deception"

Petitioners' principal argument about content is that the 2004 EIR is deceptive in failing to make clear that the Kern water transfer is not "final." They contend that the 2004 EIR's project definition treats the Kern water transfer as an immutable *fait accompli* which fails to disclose that the "final status" of the transfer depends on the DWR's forthcoming review. According to Petitioners, the EIR improperly relies on the interim availability of the water to predict that DWR will "leave it in place," a point which the court in California Oak Foundation v. City of Santa Clarita, ("California Oak") (2005) 133 Cal.App.4th 1219, 1238, n.16 had no trouble dispatching, and also improperly states that it would be unnecessary and speculative to consider what the DWR might do to change the transfer (*See* AR 994). Pet. Op. Br. at 19-20. This false assumption that the transfer is immutable may result in land use decision-makers approving projects based on water availability "worth little more than a wish and a prayer." Id. at 20-21.

The court has determined that the transfer is final as a matter of law. Therefore, the EIR is not wrong in saying so. What Petitioners really contend is that the Kern water transfer, though final, can be affected by the DWR's program EIR through mitigations and imposition of alternatives. Yet, the EIR proceeds as if the transfer cannot be altered. As counsel described the issue at hearing, the 2004 EIR "talks about risk, but never directly informed the public about the fact that the transfer may be unwound through the Monterey Amendment EIR process." Thus, the EIR refers to the transfer as of an "*existing* 41,000 " acre feet of SWP Table A water (AR 15, 35) and states that "no permits or *other approvals* would be required other than" certification of the

EIR. AR 16.[22]

The EIR is the method for disclosure of environmental issues. Rural landowners Assn. V City Council, 43 Cal.App.3d 1013, 1020. CEQA's purpose is to compel agencies to make decisions with environmental consequences in mind, but CEQA does not and cannot guarantee that these decisions will always favor environmental concerns. Laurel Heights, 47 Cal.3d at 393. The EIR should provide sufficient analysis to allow decision-makers to make intelligent judgments about environmental consequences. Guidelines §15151. The evaluation of environmental effects need not be exhaustive, but the EIR's sufficiency is reviewed in the light of what is reasonably foreseeable. Id. Perfection is not required, but adequacy, completeness, and a good faith effort at full disclosure is. Id.

In California Oak, the court addressed the proposed development of a 584 acre industrial park project in the Santa Clarita. The City's EIR relied on the Kern water transfer for water supply, and the appellate court held that it did not adequately address the uncertainty in that water delivery. 133 Cal.App.4th at 1236. The City's comments "did little more than dismiss project opponents' concerns about water supply" and the EIR failed to discuss the adequacy and availability of water supply absent the Kern water transfer. Appendix K to the EIR did acknowledge uncertainty in the Kern water transfer, but this was insufficient in part because inforamtion "scattered here and there in EIR appendices" or a report "buried in an appendix" is not a substitute for good faith reasoned analysis. Id. at 1239 (citation omitted). Moreover, Appendix K contained no facts and analysis about the likelihood of deficit or alternative sources of supply, and was misleading about the fact that Castaic had an SWP "entitlement" without explaining that the entitlement consisted in part of "paper water." Id. at 1239-40. Hence the EIR failed as an informational document on water supply issues.

Castaic contends, and the other Respondents agree, that the 2004 EIR fully addresses the uncertainty of what DWR will do. At hearing, they contended that Petitioners really are arguing that the 2004 EIR is misleading because it does not anticipate Petitioners' argument.[23]

The EIR explains that planning for water supply to meet demands requires consideration of reliability of SWP supplies, because historical and statistical analysis show that the full Table A amount will not be available in some years. AR 41. The EIR explains that Castaic's Table A amount is the maximum SWP amount, and the amount of SWP water actually available to it varies from year to year. Id. The EIR acknowledges that DWR's allocations are based on that year's hydrological conditions, the amount of water stored in the SWP system, and contractor requests for water. AR 16. The EIR discusses the Monterey Agreement (AR 46-47), PCL and Monterey Plus. AR 17-18, 47. The EIR cautions land use planners who might rely on the EIR to predict future water supplies, that while Castaic will implement all feasible measures to obtain water "past water deliveries are not a guarantee of future delivery rates." AR 13.

The EIR considers the environmental impact of the project based on water allocation

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[22]At trial, Petitioners' counsel made plain that this issue of deception is distinct from the reliability of water delivery by DWR.

[23]Respondents' contention sounds like an argument that Petitioners failed to exhaust their administrative remedies. However, no failure to exhaust claim was made in their briefs.

scenarios of pre-Monterey Amendments without Article 18 cutbacks, pre-Monterey Amendments with Article 18 cutbacks, and post-Monterey Amendments. AR 56. The EIR argues that the project could have been authorized under Article 41, but instead was implemented under Article 53 of the Monterey Agreement. It adds that DWR is preparing a new EIR for the Monterey Amendment.

Since the Monterey Amendments change the way in which SWP water is allocated among contractors, the 2004 EIR provides three separate analyses of the project's impacts to water supply. AR 186-89. The EIR goes to great lengths to discuss the uncertainties in the Article 18 allocations. AR 187-89. For each scenario, the EIR estimates reliability based on wet, dry, and extended dry year conditions. AR 183-91. The EIR addresses direct impacts to water supply and water quality under the three water allocation scenarios. AR 202-05. It discusses indirect impacts from the growth-inducing effect of the project, and mitigations of these impacts through implementation of existing agency policies. AR 207-224. It discusses the cumulative impact of the project and other projects inside and outside the project area. AR 278-89. Finally, it addresses alternatives to the project, including a no project alternative. AR 293-300.

The EIR clearly demonstrates the variability of SWP deliveries, and covers what could happen as a result of the Monterey Amendments EIR. But Petitioners are correct that the EIR has a hole in it. The EIR does not directly explain that the project may be impacted by the outcome of the Monterey Amendments EIR. Instead, the 2004 EIR assumes there are three possible water delivery scenarios without any discussion of why or how they would occur: "Since the Monterey Amendments change the way in which SWP water is allocated among contractors, the 2004 EIR provides three separate analyses of the project's impacts to water supply." The reader is left to interpret how these allocations could come about, and must conclude on his or her own that they are three possible outcomes of challenges to the Monterey Amendments. Nor does the EIR explain how such challenges could cause these allocations to occur.

An EIR is an informational document which is supposed to provide the reader with the "analytic route the...agency traveled from evidence to action." Citizens of Goleta Valley v. Board of Supervisors, ("Goleta") (1990) 52 Cal.3d 553, 568. This means that the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions. Castaic is not required to predict the outcome of litigation, and may not be able to discuss the likelihood of each of the three allocations. However, it should have at least explained why the three scenarios are relevant and how they would occur.[24] The failure to do so leaves the reader wondering why they are pertinent. Consequently, the 2004 EIR fails to provide the analytic route by which the three alternatives are relevant.

Non-compliance with the disclosure requirements of CEQA may constitute a prejudicial abuse of discretion regardless of whether the agency would have taken the same action had it complied with CEQA. Pub. Res. Code §21005(a). Still, CEQA is subject to the established principle that there is no presumption of prejudicial error. Pub. Res. Code §21005(b). Only if the manner in which the agency failed to follow the law is prejudicial must the decision be set aside. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236.

[24]For example, the court has no idea how a pre-Monterey Amendments without Article 18 cutbacks would occur.

The issue is whether Castaic's failure to supply the analytical route for its consideration of the three allocations is prejudicial. Prejudice depends on whether the failure to include this information makes "any meaningful assessment" of the project's environmental effects impossible, in which case prejudice is presumed. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236 (agency approved timber harvesting plans without requiring necessary environmental information in them).[25] Even under this standard, not every CEQA failure is prejudicial. An EIR will be upheld if the error *de minimus* or clerical in nature (Save San Francisco Bay Association v. San Francisco Bay Conservation and Development Commission (1992) 10 Cal.App.4th 908, 935), the EIR analysis is comprehensive, if not perfect, despite the error (Schaeffer Land Trust v. San Jose City Council, (1989) 215 Cal.App.3d 612, 627-28), and information which should have been included to make the EIR accurate nonetheless has no material effect on informed decision-making or informed public participation (Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 747-50).

The Vineyard court reiterated that the reviewing court must focus on the nature of the defect, depending on whether the claim is predominantly one of improper procedure or a dispute over facts. Where the agency has employed the correct procedures, greater deference is given to the agency's factual conclusions, which are reviewed for substantial evidence. 40 Cal.4th at 435.

The 2004 EIR's non-compliance concerns its analytic route – why and how the three allocations are pertinent. This is not a fact issue to be supported by substantial evidence. Instead, it is a failure affecting the public's ability to make a "meaningful assessment" of the project's environmental effects. As such, it is prejudicial. *See also* Rural Land Owners Assn. v. Lodi City Council, (1983) 143 Cal.App.3d 1013, 1023 (whenever failure to comply with CEQA results in a subversion of its purposes by omitting information from the environmental review process, the error is prejudicial).[26]

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[25]One appellate court, Resource Defense Fund v. Local Agency Formation Commission, (1987) 191 Cal.App.3d 886, 897-98 has stated that "[f]ailure to comply with CEQA is necessarily prejudicial." This does not appear to be the consensus approach. *See* Dusek v. Anaheim Redevelopment Agency, (1985) 173 Cal.App.3d 1029, 1040-42 ("a minor CEQA sin or two" constituting technical defects where the public had not been misled or defrauded is not enough for prejudice).

[26]Petitioners also argue that the 2004 EIR finesses the non-final nature of the project by jumping the gun and analyzing pre-Monterey Amendments. According to Petitioners, Castaic performed a "mini-programmatic review" at AR 155-06 and App. D (AR 468-550). The charts at AR 184 and 506 show this. According to Petitioners, this is not just factual overlap; this is usurpation of DWR's responsibilities.

DWR correctly points out that Petitioners are complaining about too much information, something that CEQA does not proscribe. Petitioners have no complaint about the content of the mini-program review. To the extent that Castaic performed a task that DWR is obligated to perform, DWR may either use Castaic's analysis or perform a new one. The cooperation of DWR and Castaiac suggests that the overlapping environmental analysis will be consistent. Even if inconsistent, DWR's analysis will control for the Monterey Amendments. There is no

the project. CALSIM II was available because DWR performed a SWP Delivery Reliability Report in 2003 using CALSIM II as its model. AR 56. Although the modeling tools are different, the criteria used to input into the computer simulation has not changed significantly. Id.

The question raised by Petitioners is why use an older computer simulation model (DWRSIM) for the 1998 baseline when a newer model (CALSIM II) was available? Appendix D of the 2004 EIR, entitled "Technical Data for Hydrologic Analysis," explains that Castaic had to do so because it did not perform any model analysis of its own. Instead, Castaic relied upon DWR's expertise, and its existing model studies. *See* AR 491. DWR used DWRSIM in its 2000 study and CALSIM II in its 2003 study; Castaic relied upon those same studies and same models.

Castaic's reliance on DWR's existing studies and its expertise is an explanation, but the issue becomes whether it is an adequate one.

The answer is in Appendix D, which explains that DWRSIM has a database of monthly runoff based on historic hydrologic data for a 73 year period from 1922-74. DWRSIM takes this data and, depending on the input variables of operating constraints and water contractor demand, estimates the amount of water SWP can deliver each month over that 75 year period. Assuming that hydrologic conditions repeat, the operator can predict the amount of water available under that particular hydrologic condition and with a particular demand and operating condition. AR 491.

Appendix D then shows that DWRSIM and CALSIM II predict similar outcomes, and that the differences in their predictions can be explained. In Figures 2-1 and 2-2 of Appendix D, Castaic compares the two models' prediction of SWP water deliveries at existing demand and at predicted 2020 demand levels. AR 493. The "existing demand" for the DWRSIM model is 1998 demand. The "existing demand" for the CALSIM II model is 2001 estimated demand. The 2001 demand is higher than the 2000 demand. Consistent with reality, the model will only show delivery up to the amount of demand; SWP will not deliver more water than is asked for even if it is available. This difference in demand explains why CALSIM II shows more delivery in wet years than DWRSIM; the lower demand in 1998 limits the amount of delivery.

The difference in demand also explains in part why CALSIM II predicts a higher delivery in extremely dry conditions; 1998's lower demand means more water is left in storage from the preceding year and is available for delivery in a dry year. Appendix D says that the proof is in the pudding: comparison of DWRSIM and CALSIM II in Figure 2-2, for the year 2020 with the same level of demand for each model, shows very close prediction of SWP delivery for both models. AR 492-93.

Castaic concludes that the two models predict "generally comparable" results and their differences are minimal. AR 491, 1003. Castaic argues that, if anything, the slightly higher supplies predicted by the DWRSIM model provide a worst case scenario for purposes of growth inducing impacts; the more water the more developers will grow the Santa Clarita Valley. AR 1003-04, 1009.

Contrary to Petitioners' argument, the use of DWRSIM and not CALSIM II in the 1998 baseline study does not affect the conclusion that the study constitutes substantial evidence. Petitioners do not present expert opinion that the use of DWRSIM results in any error. They merely rely on the differences in Figures 2-1 and 2-2 of Appendix D, and Appendix D explains

the reason for the differences. As Castaic points out, Petitioners cannot point to any environmental significance to the use of DWRSIM and not CALSIM II. Therefore, Petitioners have not met their burden of demonstrating that use of DWRSIM for the 1998 baseline in the 2004 EIR was "clearly inadequate or unsupported."[27]

3. Cumulative Impacts

Petitioners contend that the 2004 EIR attempts to assess the project's impacts on the SWP without discussion why Castaic is competent to do so. As an example, the EIR rejects any significant project impact on the Delta, even though it acknowledges that differences in timing in the use of water for urban (Castaic) rather than agricultural (Wheeler Ridge) purposes would change the timing of deliveries. AR 192. Petitioners argue that the Delta is "in crisis" and there is great potential for conflict between Castaic's and DWR's respective environmental analysis. Pet. Op. Br. at 23-4.

An EIR must contain a cumulative impacts analysis of the project's environmental impact when considered in conjunction with other projects (Guidelines §15130) in order to ensure that "the entire relevant environmental picture" has been adequately considered. Laupheimer v. State of California, (1988) 200 Cal.App.3d 440, 462. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Guidelines §15130(a)(1). The EIR should not discuss impacts which do not result at least in part from the project being evaluated. Id. The analysis should reflect the severity and likelihood of occurrence of the impact. Guidelines §15130(b). In every case, there should be at least a preliminary search for potential cumulative environmental effects and a preliminary assessment of their significance. Laupheimer, 200 Cal.App.3d at 462-63. The detail required in a cumulative impacts discussion need not be as great as provided for the environmental impacts attributable to the project alone. Guidelines §15130(b). Generally, the EIR should list the projects producing cumulative impacts or provide a summary of projections contained in a prior certified or adopted environmental document which describe the regional conditions contributing to the cumulative impact. Guidelines §15130(b)(1). The 2004 EIR uses the list approach to discuss cumulative impacts of the project's environmental impact when considered in conjunction with other projects. AR 241-289.

Castaic argues that everything that happens with respect to the Kern water transfer happens south of the Delta, and the EIR thoroughly discusses that, including the impact of the timing of deliveries. AR 193-06. Thus, the EIR's conclusion that the project will have no direct

---

[27]Castaic does not have statewide expertise on SWP reliability, but its consultants and DWR do. In commenting on Castaic's draft EIR, DWR stated that the differences between CALSIM II and DWRSIM "may cause slight changes in results, which may lead DWR to different conclusions....[in DWR's Monterey Amendments EIR]" AR 564. However, DWR also found that the draft EIR adequately and thoroughly discussed the project and its impacts, including the effects of the project on the environment and the SWP, using appropriate baseline conditions, and had a good discussion of the relationship between the Kern water transfer and Monterey Plus. DWR concluded that the draft EIR a "adequately discusses the reliability of the SWP, pre- and post- Monterey Amendment conditions, and SWP operations." AR 564-65.

significant impact on the SWP or related facilities is fully supported. Castaic contends that Petitioners really are attacking its ability to act as lead agent for a local project if the project has the potential for statewide impact. According to Castaic, this argument goes to the lead agency issue, and is incorrect as a matter of law. Castaic is qualified and required by CEQA to assess impacts that occur outside of its borders in evaluating the Kern water transfer. Citizens of Goleta Valley v. Board of Supervisors, (1990) 52 Cal.3d 553, 573.

The court does not know whether Petitioners really are attacking Castaic's expertise or the adequacy of its assessment of SWP impacts from the Kern transfer. The reason is that Petitioners' arguments are conclusionary and unsupported by analysis, authority, or many facts. Petitioners' obligation was to point out what is wrong with the analysis, or what has been omitted that was required. An issue raised without analysis or authority lacks foundation and need not be addressed. Arcadia, 135 Cal.App.4th at 1429, 1431. The court has no obligation to search the EIR's cumulative analysis section to look for defects. Their general objection requires only a general response that Castaic's cumulative impacts analysis is adequate.

4. The "No Project" Alternative

Petitioners argue that the 2004 EIR fails to address the "no project" alternative, an issue particularly important because it was the principal defect in the PCL Monterey Agreement EIR. As the PCL court stated, a "no project" alternative must discuss "existing conditions" and "what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." 83 Cal.App.4th at 912. The Monterey Agreement EIR did not discuss the projections related to land planning, demand for water, and other impacts of reducing entitlements pursuant to Article 18(b). Id. at 919. Petitioners contend that the 2004 EIR does discuss the water supply reliability impacts of invoking Article 18(b), but not the statewide impacts the PCL court found so crucial.

The short answer to Petitioners contention is that 2004 EIR addresses a different project than the Monterey Amendments. The "no project" alternative for any EIR requires a comparison of the impacts of approving the project with the effect of not doing so. Guidelines §15126.6.(e)(1); Mira Mar Mobile Community v. City of Oceanside, (2004) 119 Cal.App.4th 477, 488-89. The only "no project alternative" that Castaic is obligated to consider is the alternative of "no Kern water transfer." Castaic has addressed this alternative by discussing groundwater sources of water and a possible moratorium. AR 291-4. Petitioners do not quibble with this analysis. But Castaic had no obligation to consider "no Monterey Amendments" as a no project alternative.[28] Indeed, it would make no sense to evaluate "no Monterey Amendments" as an alternative to the Kern water transfer.[29]

---

[28]Of course, the 2004 EIR is obligated to consider invocation of Article 18(b) as a reasonably foreseeable environmental impact, and the adequacy of it doing so has been discussed.

[29]For a similar reason, Castaic need not analyze alternative uses of the SWP water in a "no project" alternative. CEQA does not require consideration of alternatives that do not meet the project objective; *i.e.*, delivery of water to Castaic's customers. *See* Guidelines §15126.6(c).

5. Post-Hoc Rationalization

Petitioners also suggest that the 2004 EIR is a post-hoc rationalization for "a decision already made." Pet. Op. Br. at 18. Pre-judging environmental decisions in order to accomplish a project is prohibited under CEQA. An agency may not commit to a project before CEQA review is completed because a fundamental purpose of an EIR is to provide decision-makers with information they can use in deciding whether to approve a project. Therefore, post-approval environmental review has been condemned. Laurel Heights, 47 Cal.3d at 394. *See* Residents Ad Hoc Stadium Com. v. Board of Trustees, (1979) 89 Cal.App.4th 274, 285. Of course, an agency contemplating a project may be presumed to favor the project, and CEQA assumes this to be inevitable. Therefore, it builds in procedural protections to insure that the decision-maker does not fail to note the facts and arguments by opponents to the EIR. Id. at 285.

Castaic had completed the transfer and performed under it for several years prior to preparing the 2004 EIR. Plainly, it desires to keep the transfer and not change it. When the 1999 was found deficient, Castaic was required under CEQA to perform a "fresh look" at the transfer's environmental impacts. With the exception of the analytical hole discussed above, it has done so. *See* City of Vernon v. Board of Harbor, (1998) 63 Cal.App.4th 677, 1523 (adequacy of EIR overcomes contention that it was a post-hoc rationalization).

G. Conclusion

Castaic may act as the lead agency for the Kern water transfer. The 2004 EIR was properly prepared except for one defect – it fails to show the analytic route as to how and why the three allocations of pre-Monterey Amendments, pre-Monterey Amendments without Article 18, and post-Monterey Amendments are relevant and would occur. The court offers no opinion on whether this failure must be rectified by addendum (Guidelines §15164), a subsequent EIR, a supplement to EIR, or a new EIR. That determination is Castaic's to make in the first instance.

The Petition for Writ of Mandate is granted in part. A writ shall issue commanding Castaic to set aside its approval of the 2004 EIR and comply with CEQA, either through the preparation of a new EIR or other environmental documentation, such as an addendum, addressing the analytic route of the three water allocations. Castaic is not directed to set aside the Kern water transfer. Judgment shall be entered in favor of Petitioners solely on this issue.

This shall serve as the court's proposed statement of decision in compliance with CRC 232(c). If there are no written objections filed, the statement shall be final. As Respondents have prevailed on all but one issue, Castaic's council is ordered to prepare a writ of mandate and judgment consistent with this decision, and serve it on all other counsel for approval as to form. After 10 days, Castaic may file the proposed writ and judgment with the court, along with a declaration stating the nature and extent of any objections received. An OSC re: judgment shall be set for April 23, 2007.

Dated: April 2, 2007

J. Chalfant

Superior Court Judge
JAMES C. CHALFANT

PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 695 Town Center Drive, Suite 400, Costa Mesa, California 92626.

On May 14, 2007, I served the foregoing document described as: **[PROPOSED] JUDGMENT GRANTING PEREMPTORY WRIT OF MANDATE** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list:

SEE ATTACHED LIST

[XX] (BY MAIL) I am "readily familiar" with the firm's practice of collection and processing correspondence by mailing. Under that practice it would be deposited with U.S. postal service on that same day with postage fully prepaid at Costa Mesa, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

[ ] (BY OVERNIGHT MAIL) I caused such document to be delivered by overnight mail to the offices of the addressee(s).

[ ] (BY PERSONAL DELIVERY) I caused such envelope to be delivered by hand to the offices of the addressee.

[ ] (BY FACSIMILE) I transmitted said document by fax transmission to the fax number(s) indicated

[XX] (BY E-MAIL) I transmitted said document by e-mail transmission to the e-mail addresses indicated

[XX] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on May 14, 2007, at Costa Mesa, California.

VICTORIA A. ROBINSON

PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 695 Town Center Drive, Suite 400, Costa Mesa, California 92626.

On May 18, 2007, I served the foregoing document described as: **[PROPOSED] JUDGMENT GRANTING PEREMPTORY WRIT OF MANDATE** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list:

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[XX] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on May 18, 2007, at Costa Mesa, California.

Monifa Wilson

MONIFA WILSON

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Los Angeles County Superior Court Case No. BS 098724

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COPY

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MAY 22 2007

LOS ANGELES
SUPERIOR COURT

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CASE NO.: BS 098724

Assigned for All Purposes:
Honorable James Chalfant
Department 13

(Consolidated Cases)
[Transferred from Ventura County Master File No. CIV 231588 (consolidated with Ventura County Case No. CIV 231606)]

~~[PROPOSED]~~ **PEREMPTORY WRIT OF MANDATE**

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

EXHIBIT 2

THE PEOPLE OF THE STATE OF CALIFORNIA

To Castaic Lake Water Agency, Respondent:

Judgment having been entered in this proceeding ordering that a peremptory writ of mandate be issued from this Court based on the Statement of Decision,

YOU ARE HEREBY COMMANDED within 30 days of service of this Writ to:

1. Set aside your December 22, 2004 certification of the Final Environmental Impact Report ("EIR") for a Supplemental Water Project Transfer of 41,000 acre-feet per year ("afy") of State Water Project ("SWP") Table A Amount ("2004 EIR"), ~~but only with respect to addressing the analytic route of the three water allocations in the 2004 EIR, *i.e.*, pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18 (b) cutbacks and post-Monterey Amendments~~.
2. Comply with the California Environmental Quality Act [Public Resources Code § 21000, *et seq.* ("CEQA")] in the preparation of additional environmental documentation consistent with the Statement of Decision addressing the analytic route of the three water allocations in the 2004 EIR, *i.e.*, pre-Monterey Amendments without Article 18(b) cutbacks, pre-Monterey Amendments with Article 18 (b) cutbacks and post-Monterey Amendments.
3. Nothing in this Writ shall be construed as commanding Castaic to set aside the Kern Water Transfer.

Nothing in this Writ, except for the commands set forth in paragraphs 1, 2 and 3, shall be construed to limit or control the discretion legally vested in you to determine the appropriate manner to comply with CEQA.

YOU ARE FURTHER COMMANDED to make and file a return to this Writ, setting forth what you have done to comply. This Court shall retain jurisdiction over your proceedings by way of that return until this Court has determined that you have complied with the commands and directions set forth in this Writ.

DATED: MAY 22 2007

CLERK OF THE SUPERIOR COURT

Let the forgoing writ issue.

/s/ JAMES C. CHALFANT
HONORABLE JAMES CHALFANT
JUDGE OF THE SUPERIOR COURT

Presented by: McCORMICK, KIDMAN & BEHRENS, LLP
Russell G. Behrens,
David D. Boyer

DAVID D. BOYER
Attorneys for Respondent
CASTAIC LAKE WATER AGENCY

PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 695 Town Center Drive, Suite 400, Costa Mesa, California 92626.

On May 14, 2007, I served the foregoing document described as: **[PROPOSED] PEREMPTORY WRIT OF MANDATE** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list:

SEE ATTACHED LIST

[XX] (BY MAIL) I am "readily familiar" with the firm's practice of collection and processing correspondence by mailing. Under that practice it would be deposited with U.S. postal service on that same day with postage fully prepaid at Costa Mesa, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

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[ ] (BY FACSIMILE) I transmitted said document by fax transmission to the fax number(s) indicated

[XX] (BY E-MAIL) I transmitted said document by e-mail transmission to the e-mail addresses indicated

[XX] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on May 14, 2007, at Costa Mesa, California.

Victoria A. Robinson

VICTORIA A. ROBINSON

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Los Angeles County Superior Court Case No. BS 098724

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PROOF OF SERVICE

Planning and Conservation League v. CLWA
LOS ANGELES SUPERIOR COURT Case No.: BS 098724

STATE OF CALIFORNIA)
) ss
COUNTY OF LOS ANGELES)

I am employed in the aforesaid County, State of California; I am over the age of eighteen years and not a party of the within action; my business address is 1880 Century Park East, Suite 615, Los Angeles, California 90067-1622.

On May 25, 2007, I served the foregoing document described as: **NOTICE OF RULINGS RE: OSC RE: JUDGMENT/WRIT OF MANDATE** on all parties in this action by placing true copies thereof enclosed in a sealed envelope addressed as follows:

SEE ATTACHED SERVICE LIST

X BY MAIL: I caused such envelope to be deposited in the mail at Los Angeles, California. The envelope was mailed with postage thereon fully prepaid. I am "readily familiar" with this firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with U.S. Postal Service on that same day with postage thereon fully prepaid at Los Angeles, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

____ BY PERSONAL SERVICE: I caused such envelope to be delivered by hand.

____ BY FEDERAL EXPRESS (FedEx): I personally delivered such envelope on May 25, 2007, to a FedEx drop box or office in Los Angeles, California, marked for next day/overnight delivery.

____ BY FACSIMILE: I faxed such document to the addressee at the facsimile number listed for each addressee.

I declare that I am employed in the office of a member of the bar of this Court at whose direction the service was made.

I declare under penalty of perjury under the laws of the State of California, that the foregoing is true and correct and that this declaration was executed on May 25, 2007, at Los Angeles, California.

SARAH BLACKWELL

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PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF ORANGE)

I am employed in the County of Orange, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 650 Town Center Drive, Suite 100, Costa Mesa, California 92626.

On July 20, 2007, I served the foregoing document described as: **NOTICE OF CROSS-APPEAL** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated on the attached mailing list: **SEE ATTACHED LIST**

[X] (BY MAIL) I am "readily familiar" with the firm's practice of collection and processing correspondence by mailing. Under that practice it would be deposited with U.S. postal service on that same day with postage fully prepaid at Costa Mesa, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

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[ ] (BY PERSONAL DELIVERY) I caused such envelope to be delivered by hand to the offices of the addressee.

[ ] (BY FACSIMILE) I transmitted said document by fax transmission to the fax number(s) indicated

[X] (BY E-MAIL) I transmitted said document by e-mail transmission to the e-mail . to addresses indicated below.

[X] (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on July 20, 2007, at Costa Mesa, California.

Alla Vainberg

ALLA VAINBERG

MAILING LIST
Los Angeles County Superior Court Case No. BS 098724

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STORAGE DISTRICT

[EXEMPT FROM FILING FEE - GOV'T CODE § 6103]

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE, a California non-profit corporation,

Petitioner,

vs.

CASTAIC LAKE WATER AGENCY, a public Agency under the laws of California,

Respondent,

KERN COUNTY WATER AGENCY, a public Agency under the laws of California; WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT, a public agency under the laws of California; DEPARTMENT OF WATER RESOURCES, a public agency of the State of California,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK, a California non-profit corporation,

Petitioner,

vs.

CASE NO.: BS 098724

(Consolidated Cases)
(transferred from Ventura County, CIV231588 c/w CIV231606)

Assigned for All Purposes:
Honorable James C. Chalfant
Department 13

NOTICE OF CROSS-APPEAL

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

FILED BY FACSIMILE

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CASTAIC LAKE WATER AGENCY, a public agency under the laws of California

Respondent,

KERN COUNTY WATER AGENCY, a public Agency under the laws of California; WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT, a public agency under the laws of California; DEPARTMENT OF WATER RESOURCES, a public agency of the State of California,

Real Parties in Interest.

TO THE CLERK OF THE ABOVE-ENTITLED COURT:

NOTICE IS HEREBY GIVEN that Real Party In Interest, Wheeler Ridge-Maricopa Water Storage District, cross-appeals from the Judgment Granting Peremptory Writ of Mandate, as well as the Peremptory Writ of Mandate, entered on May 22, 2007, in the above-entitled court.

Petitioners Planning and Conservation League and California Water Impact Network filed a Notice of Partial Appeal on July 12, 2007.

Respondent Castaic Lake Water Agency filed a Notice of Cross-Appeal on or about July 20, 2007, which included a full and complete copy of said Judgment attached as Exhibit "1" thereto, and a full and complete copy of said Peremptory Writ of Mandate attached as Exhibit "2" thereto. Said exhibits are incorporated herein by reference.

DATED: July 27, 2007

The Law Offices of
YOUNG WOOLDRIDGE, LLP

By: Steve Torigiani
STEVEN M. TORIGIANI,
Attorneys for Real Party In Interest,
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PROOF OF SERVICE

STATE OF CALIFORNIA)
COUNTY OF KERN)

I, BETH A. GASTINEAU, am employed in the County of Kern, State of California. I am over the age of eighteen (18) years and not a party to the within action; my business address is: 1800 30th Street, Fourth Floor, Bakersfield, CA 93301

On July 27, 2007, I served the foregoing document described as: **NOTICE OF CROSS-APPEAL** on the interested parties in this action by placing a true copy thereof enclosed in a sealed envelope addressed to all parties as indicated below:

SEE ATTACHED SERVICE LIST

[XX] **(BY MAIL)** I am "readily familiar" with the firm's practice of collection and processing correspondence by mailing. Under that practice it would be deposited with U.S. postal service on that same day with postage fully prepaid at Bakersfield, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

[ ] (BY OVERNIGHT MAIL) I caused such document to be delivered by overnight mail to the offices of the addressee(s).

[ ] (BY PERSONAL DELIVERY) I caused such envelope to be delivered by hand to the offices of the addressee.

[ ] (BY FACSIMILE) I transmitted said document by fax transmission to the fax number(s) indicated on the attached service list.

[XX] **(BY E-MAIL)** I caused said document to be delivered by electronically transmitting to the e-mail addresses as indicated on the attached service list.

[XX] **(STATE)** I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on July 27, 2007, at Bakersfield, California.

Beth A. Gastineau

BETH A. GASTINEAU

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Los Angeles County Superior Court Case No. BS 098724

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[EXEMPT FROM FILING FEE GOV'T CODE § 6103]

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES, CENTRAL DISTRICT

PLANNING AND CONSERVATION LEAGUE,

Petitioner,

v.

CASTAIC LAKE WATER AGENCY,

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

CALIFORNIA WATER IMPACT NETWORK,

Petitioner,

v.

CASTAIC LAKE WATER AGENCY,

CASE NO.: BS 098724

Assigned for All Purposes:
Honorable James C. Chalfant
Department 13

(Consolidated Cases)
[Transferred from Ventura County Master File No. CIV 231588 (consolidated with Ventura County Case No. CIV 231606)]

KERN COUNTY WATER AGENCY'S NOTICE OF CROSS-APPEAL

Action Filed: January 24, 2005
Action Transferred: August 8, 2005

Respondent,

CALIFORNIA DEPARTMENT OF WATER RESOURCES, KERN COUNTY WATER AGENCY, WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT,

Real Parties in Interest.

TO THE CLERK OF THE ABOVE-ENTITLED COURT:

NOTICE IS HEREBY GIVEN that Real Party in Interest, Kern County Water Agency cross-appeals from the Judgment Granting Peremptory Writ of Mandate as well as the Peremptory Writ of Mandate, entered on May 22, 2007 in the above entitled court.

Petitioners Planning and Conservation League and California Water Impact Network filed a Notice of Partial Appeal on July 12, 2007.

A full and complete copy of the Judgment is attached as Exhibit 1 to this Notice.

A full and complete copy of the Peremptory Writ of Mandate is attached as Exhibit 2 to this Notice.

Dated: July 26, 2007

Respectfully submitted,

KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Law Corporation

By Clifford W. Schulz
Clifford W. Schulz
Attorneys for Real Party in Interest
Kern County Water Agency

PROOF OF SERVICE

I, Lorraine Lippolis, declare:

I am a resident of the State of California and over the age of eighteen years, and not a party to the within action; my business address is 400 Capitol Mall, 27th Floor, Sacramento, CA 95814-4416. On July 26, 2007, I served the within documents:

KERN COUNTY WATER AGENCY'S NOTICE OF CROSS APPEAL

☐ by transmitting via facsimile from (916) 321-4555 the above listed document(s) without error to the fax number(s) set forth below on this date before 5:00 p.m. A copy of the transmittal/confirmation sheet is attached.

☒ by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Sacramento, California addressed as set forth below.

☒ by transmitting the document(s) by e-mail transmission to the e-mail address(es) set forth below.

☐ by causing personal delivery by messenger of the document(s) listed above to the person(s) at the address(es) set forth below.

☐ by placing the document(s) listed above in a sealed Federal Express envelope and affixing a pre-paid air bill, and causing the envelope to be delivered to a Federal Express agent for delivery

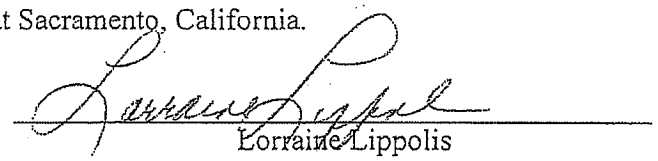
☐ by personally delivering the document(s) listed above to the person(s) at the address(es) set forth below.

Please see attached Service List

I am readily familiar with the firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on July 26, 2007, at Sacramento, California.



Lorraine Lippolis

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Los Angeles County Superior Court Case No. BS 098724

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4 of 18 DOCUMENTS

SANTA CLARITA ORGANIZATION FOR PLANNING THE ENVIRONMENT et al., Plaintiffs and Appellants, v. COUNTY OF LOS ANGELES, Defendant and Respondent; NEWHALL LAND AND FARMING COMPANY et al., Real Parties in Interest and Respondents.

No. B189116

COURT OF APPEAL OF CALIFORNIA, SECOND APPELLATE DISTRICT, DIVISION SIX

157 Cal. App. 4th 149; 2007 Cal. App. LEXIS 1938

November 26, 2007, Filed

PRIOR HISTORY: [*1]

Superior Court of Santa Barbara County, No. 1043805, James W. Brown, Judge.

Santa Clarita Organization for Planning the Environment v. County of Los Angeles, 155 Cal. App. 4th 660, 66 Cal. Rptr. 3d 559, 2007 Cal. App. LEXIS 1605 (Cal. App. 2d Dist., 2007)

DISPOSITION: The judgment is affirmed. Costs on appeal are awarded to respondents and real parties in interest.

SUMMARY:

CALIFORNIA OFFICIAL REPORTS SUMMARY

The trial court denied a petition for writ of administrative mandate challenging a county's recertification, after remand and revision, of an environmental impact report (EIR) for a residential subdivision. A previous EIR was found inadequate because it relied on water entitlements instead of actual water in analyzing water availability. The county revised the water supply analysis to include a water transfer as part of the permanent supply for the entire project. Although pending litigation could affect the water transfer, the EIR concluded that the transfer was unlikely to be invalidated. (Superior Court of Santa Barbara County, No. 1043805, James W. Brown, Judge.)

The Court of Appeal affirmed, concluding that the EIR provided an adequate analysis of future water supplies and that it complied with the requirements of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.). The record contained substantial evidence demonstrating a reasonable likelihood that water from the transfer would be available; thus, an analysis of alternative sources was not required. The court's previous opinion regarding the original EIR did not preclude certification of the revised EIR under the doctrine of law of the case because that opinion did not address the water transfer. The EIR did not have to discuss funding of mitigation measures for contaminated wells because very few wells were contaminated and there was no indication that mitigation measures would not be implemented. (Opinion by Gilbert, P. J., with Coffee and Perren, JJ., concurring.)

HEADNOTES

CALIFORNIA OFFICIAL REPORTS HEADNOTES

(1) Appellate Review § 156--Scope--Law of the Case--Principle Necessary to Decision.--Where an appellate court states in its opinion a principle or rule of law necessary to its decision, that principle or rule becomes the law of the case. The law of the case must be adhered to both in the lower court and upon subsequent appeal. This is true even if the court that issued the opinion becomes convinced in a subsequent consideration that the former opinion is erroneous.

(2) Pollution and Conservation Laws § 2.6--California Environmental Quality Act--Impact Reports--Contents and Sufficiency--Future Water

Supplies.--The informational purposes of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) are not satisfied by an environmental impact report that simply ignores or assumes a solution to the problem of supplying water to a proposed land use project. Decision makers must, under the law, be presented with sufficient facts to evaluate the pros and cons of supplying the amount of water that the project will need.

(3) Pollution and Conservation Laws § 2.6--California Environmental Quality Act--Impact Reports--Contents and Sufficiency--Future Water Supplies.--An adequate environmental impact analysis for a large project, to be built and occupied over a number of years, cannot be limited to the water supply for the first stage or the first few years. While proper tiering of environmental review allows an agency to defer analysis of certain details of later phases of long-term linked or complex projects until those phases are up for approval, the demand of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) for meaningful information is not satisfied by simply stating information will be provided in the future.

(4) Pollution and Conservation Laws § 2.6--California Environmental Quality Act--Impact Reports--Contents and Sufficiency--Future Water Supplies.--The future water supplies identified and analyzed must bear a likelihood of actually proving available; speculative sources and unrealistic allocations (paper water) are insufficient bases for decisionmaking under the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.). An environmental impact report (EIR) for a land use project must address the impacts of likely future water sources, and the EIR's discussion must include a reasoned analysis of the circumstances affecting the likelihood of the water's availability.

(5) Pollution and Conservation Laws § 2.6--California Environmental Quality Act--Impact Reports--Contents and Sufficiency--Future Water Supplies.--Where, despite a full discussion, it is impossible to confidently determine that anticipated future water sources will be available, the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) requires some discussion of possible replacement sources or alternatives to use of the anticipated water, and of the environmental consequences of those contingencies. The law's informational demands may not be met, in this context, simply by providing that future development will not proceed if the anticipated water supply fails to materialize. But when an environmental impact report makes a sincere and reasoned attempt to analyze the water sources the project is likely to use, but acknowledges the remaining uncertainty, a measure for curtailing development if the intended sources fail to materialize may play a role in the impact analysis.

(6) Pollution and Conservation Laws § 2.6--California Environmental Quality Act--Impact Reports--Contents and Sufficiency--Future Water Supplies.--An environmental impact report (EIR) for a residential subdivision adequately addressed water supply issues. The record contained substantial evidence demonstrating a reasonable likelihood that water would be available for the project's near-term and long-term needs. The record also showed that the county proceeded in a manner required by the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.). The EIR neither improperly used tiering to defer all analysis of supplies to future stages of the project, nor relied upon demonstrably illusory supplies.

[Manaster & Selmi, Cal. Environmental Law & Land Use Practice (2007) ch. 22, § 22.04; Cal. Forms of Pleading and Practice (2007), ch. 418, Pollution and Environmental Matters, § 418.35.]

COUNSEL: Law Office of Alyse M. Lazar and Alyse M. Lazar for Plaintiffs and Appellants Santa Clarita Organization for Planning the Environment and Friends of the Santa Clara River.

Rossmann & Moore, Antonio Rossmann, Roger B. Moore and David Rowen for the Planning and Conservation League as Amicus Curiae on behalf of Plaintiffs and Appellants.

Raymond Fortner, County Counsel, Richard D. Weiss, Assistant County Counsel, Tracy D. Swann, Principal Deputy County Counsel, and Lawrence Hafetz, Deputy County Counsel, for Defendant and Respondent.

Paul, Hastings, Janofsky & Walker, Robert I. McMurry, A. Catherine Norian and Edgar Khalatian for Real Parties in Interest and Respondents Newhall Land and Farming Company and Valencia Corporation.

JUDGES: Opinion by Gilbert, P. J., with Coffee and Perren, JJ., concurring.

OPINION BY: Gilbert

OPINION

GILBERT, P. J.--In *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715 [131 Cal. Rptr. 2d 186] (*Scope I*), we held that the water service portion of an environmental [*2] impact report (EIR) must analyze the actual amount of water that will be available for a project. In *Scope I*, the EIR for the West Creek residential subdivision did not comply with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). [1] It relied on contractual entitlements to water. Because this water is not of the "wet" variety, it has been called "paper water."

1 All statutory references are to the Public Resources Code unless otherwise stated.

After remand, the County of Los Angeles (County) revised and recertified the West Creek EIR. Santa Clarita Organization for Planning the Environment (SCOPE) again challenges the water services portion of the EIR. This time, SCOPE focuses on the EIR's analysis of a water transfer agreement and remediation costs for perchlorate contamination of water wells. The trial court denied SCOPE's petition for writ of administrative mandate.

After the trial court denied SCOPE's petition, our Supreme Court decided *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412 [53 Cal. Rptr. 3d 821, 150 P.3d 709] (*Vineyard*). *Vineyard* states four principles governing the analysis of the water services portion of an EIR. We [*3] conclude the West Creek EIR satisfies all four principles.

FACTS

Background

In the 1950's, the Legislature and the voters approved the State Water Project (SWP). It was designed to deliver 4.23 million acre-feet of water annually. It is managed by the Department of Water Resources (DWR).

The DWR contracted to deliver water to water agencies throughout the state. The contracts entitle the agencies to specified amounts of water calculated on the designed capacity of the SWP. Only half of the SWP was constructed. The completion of the SWP was an expectation that has not grown beyond a hope. There is no reasonable expectation that the original plan will ever be completed. This leaves a vast difference between the amount of water to which the local agencies are entitled, and the amount of water the SWP can actually deliver.

A drought in the 1990's highlighted the disparity between water entitlements and actual water. Agricultural and urban agencies disputed how shortfalls in water delivery would be allocated. The interested parties met in Monterey, and produced the "Monterey Agreement."

Under the Monterey Agreement, the DWR and the contracting water agencies agreed to a statement of 14 principles. [*4] One principle provided for the permanent sale of water among agencies. The Castaic Lake Water Agency (Castaic) purchased 41,000 acre-feet per year (afy) from the Kern County Water Agency. Castaic serves the Santa Clarita Valley area, and the 41,000 afy constitutes over 40 percent of the 95,200 afy available to Castaic.

The Monterey Agreement scuttled the term "entitlement" to describe the amount of water the SWP has contracted to deliver to local water agencies. Instead, the agreement uses the term "Table A Amount." Table A of the agreement lists the contracting agencies and the amount of water the SWP has contracted to deliver. The change is not substantive.

In *Planning & Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 [100 Cal. Rptr. 2d 173] (*PCL*), the court ordered the EIR for the Monterey Agreement decertified. The court determined that the EIR was prepared by the wrong lead agency, a water agency instead of the DWR, and failed to consider the "no project" alternative. Because the EIR for the Kern-Castaic 41,000 afy transfer was "tiered" on the Monterey Agreement EIR, the EIR for the Kern-Castaic transfer was also ordered decertified. (*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, 1387 [116 Cal. Rptr. 2d 54] [*5] (*Friends*).) Although the EIR's for the Monterey Agreement and the Kern-Castaic transfer were decertified, the projects were not enjoined. The agreements remain in effect to this day.

On July 22, 2002, the parties to the *PCL* litigation that decertified the Monterey Agreement EIR entered into a settlement agreement approved by the Sacramento County Superior Court. The settlement agreement requires the DWR as the lead agency to prepare a new EIR for the Monterey Agreement. The settlement agreement acknowledges that certain water transfers listed in attachment E to the settlement agreement are final, and the parties agree not to challenge those transfers. The Kern-Castaic transfer is not listed in attachment E. Instead, the settlement agreement provides:

"*Acknowledgement and Agreement Regarding Kern-Castaic Transfer.* With respect to ... the Kern-Castaic Transfer, the Parties recognize that such water transfer is subject to pending litigation in the Los Angeles County Superior Court following remand from the Second District Court of Appeal (See *Friends of the Santa Clara River v. Castaic Lake Water Agency*,[*supra*,] 95 Cal.App.4th 1373 [116 Cal.Rptr.2d 54] ... ; *review denied* April 17, 2002). The [*6] Parties agree that jurisdiction with respect to that litigation should remain in that court and that nothing in this Settlement Agreement is intended to predispose the remedies or other actions that may occur in that pending litigation."

In 2004, Castaic certified a revised EIR for the Kern-Castaic transfer. This EIR is not tiered on the Monterey Agreement EIR. SCOPE's opening brief states that Castaic's EIR is being challenged in Los Angeles County Superior Court by environmental groups.

West Creek

West Creek is a proposed mixed residential and commercial development in the Santa Clarita Valley area of northern Los Angeles County. The project includes 2,545 housing units, 180,000 square feet of commercial retail space and 46 acres of community facilities. The County served as the lead agency in preparing the EIR for the project. The project developers are The Newhall Land and Farming Company and Valencia Corporation (hereafter collectively Newhall).

SCOPE challenges the County's certification of the West Creek EIR. The trial court denied SCOPE's petition for a writ of administrative mandate. We reversed on the ground that the EIR's evaluation of the availability of the water supply was [*7] inadequate. (*Scope I*, *supra*, 106 Cal.App.4th 715.) The EIR relied on water entitlements instead of actual water in analyzing water availability. (*Ibid.*)

The County revised the water supply analysis, and recertified the EIR. SCOPE challenges the water supply analysis in the recertified EIR. This time it opposes the 41,000 afy Kern-Castaic water transfer.

The recertified EIR states that Castaic's total maximum SWP water allocation is 95,200 afy. The Kern-Castaic transfer accounts for 41,000 afy of that. The EIR acknowledges that the EIR for the Monterey Agreement and the original EIR for the Kern-Castaic transfer were decertified.

With regard to the status of the Kern-Castaic transfer, the EIR states:

"The [Kern-Castaic] transfer of SWP Table A Amount 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 AF of their Table A Amount could be transferred to urban contractors. The [Castaic] 41,000-AF acquisition was a part of the 130,000 AF of SWP Table A Amount, which has been transferred under the Monterey Agreement.

"... The Monterey Agreement provides [*8] ... for those transfers by the participating SWP contractors, thus facilitating transfers of Table A Amounts from agricultural to urban SWP contractors. As stated above, the environmental documentation for the Monterey Agreement has been decertified. However, the ... legal proceedings (*Planning and Conservation League v. Department of Water Resources*[, *supra*,] 83 Cal.App.4th 892 [PCL litigation]) did not invalidate ... the Monterey Agreement or enjoin[] either the Monterey Agreement or further implementation of the Monterey Agreement.

"In addition, the subsequent Settlement Agreement in the PCL litigation did not invalidate or otherwise enjoin the Monterey Agreement.

"Even in the absence of the Monterey Agreement, [Castaic's] permanent acquisition of an additional 41,000 AF of SWP Table A Amount could occur under existing SWP water supply contract provisions, subject to appropriate environmental review.

"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 Amounts from agricultural to urban SWP [*9] contractors; the amendments under the Monterey Agreement are not the exclusive means by which that Amount may be transferred. In support of that fact, in 1981 (almost 15 years before the Monterey Agreement), the entire SWP Table A Amount of the Hacienda Water District was permanently transferred to the Tulare Lake Basin Water Storage District, pursuant to an agreement approved by DWR.

"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). The Kern County Water Agency has reaffirmed its willingness to allow transfers of up to 130,000 AF of SWP table A Amounts under pre-Monterey Agreement conditions and/or under the terms of the Settlement Agreement. ...

"Finally, [Castaic] is not a party to the pending Monterey Agreement litigation (*Planning Conservation League v. Department of Water Resources*[, *supra*,] 83 Cal.App.4th 892). Although not a party, an adverse final judgment invalidating the Monterey Agreement could affect [Castaic's] completed acquisition of the 41,000 AF, which could in turn impair [Castaic's] supply [*10] of SWP water through its contracts with DWR and other SWP contractors. Nevertheless, [Castaic] believes that an adverse outcome in the Monterey Agreement litigation is not likely to adversely affect [Castaic's] water supplies over the long-term because (a) [Castaic] believes that such a result is unlikely to 'unwind' executed and completed agreements with respect to the permanent transfer of SWP water amounts; (b) existing SWP water supply contract provisions allow such transfers (without the need for the Monterey Agreement); and (c) existing law enables [Castaic] to enter into contracts outside the context of the Monterey Agreement."

The EIR also discloses that there is perchlorate contamination in six water wells that will comprise part of the water service for West Creek. The EIR identifies remediation measures, but does not identify any source of funding for those measures.

DISCUSSION

I

Newhall contends the doctrine of law of the case bars SCOPE's Kern-Castaic transfer arguments.

(1) Where an appellate court states in its opinion a principle or rule of law necessary to its decision, that principle or rule becomes the law of the case. (*Clemente v. State of California* (1985) 40 Cal.3d 202, 211 [219 Cal. Rptr. 445, 707 P.2d 818].) [*11] The law of the case must be adhered to both in the lower court and upon subsequent appeal. (*Ibid.*) This is true even if the court that issued the opinion becomes convinced in a subsequent consideration that the former opinion is erroneous. (*Ibid.*)

But our former opinion in this case (*Scope I*) stated no principle or rule of law bearing on the adequacy of the West Creek EIR's discussion of the Kern-Castaic transfer. Newhall attempts to turn silence into positive effect by citing section 21005, subdivision (c). The subdivision requires that our opinion discuss all the alleged grounds for noncompliance with CEQA. Newhall concludes that because we did not discuss the Kern-Castaic transfer in *Scope I*, we approved the transfer.

Newhall cites no authority, however, for the proposition that not discussing an issue as required by section 21005, subdivision (c), transforms that issue into law of the case. In *Friends*, *supra*, 95 Cal.App.4th at page 1387, on which Newhall relies, after finding one of appellant's contentions meritorious, the court expressly stated it considered all of appellant's other contentions and found them without merit. (*Ibid.*) *Friends* does not discuss the effect of a failure [*12] to consider an issue, and does not even mention the doctrine of law of the case. If Newhall believed we failed to discuss an issue raised in *Scope I*, its remedy was a timely petition for rehearing. (Cal. Rules of Court, rule 8.268 (formerly cited as rule 25).) The time for such a petition has long since passed.

Moreover, we discussed all issues raised in *Scope I*. SCOPE mentioned the Kern-Castaic transfer in its opening brief, but SCOPE did not raise the transfer as an issue. In fact, Newhall argued that we could not consider *Friends*, the decision that decertified the Kern-Castaic transfer EIR, because it occurred after the County approved the West Creek project. Newhall pointed out that once a project is approved, new information does not require reopening the approval. (*Scope I*, *supra*, 106

Cal.App.4th at p. 723.) SCOPE replied that it cited *Friends* only to show that SWP entitlements cannot be taken at face value. (*Ibid.*) Thus, at Newhall's urging, we did not consider in *Scope I* the issues SCOPE now raises. They arose after the County's initial approval of the project. Newhall cites no authority that prevents us from considering issues that arose prior to the recertification of the [*13] EIR. [2]

2 SCOPE contends the EIR's failure to properly analyze the Kern-Castaic transfer violated the terms of the remittitur in *Scope I*. It follows from what we have said that the contention has no merit. We did not consider the Kern-Castaic transfer in *Scope I*, and it was not within the terms of our remittitur in that case.

II

Newhall contends SCOPE waived its perchlorate contamination arguments by failing to appeal them. Newhall argues SCOPE's claim is waived because it is essentially identical to that denied by the trial court in the first challenge to the project's EIR.

But SCOPE's first challenge to the project's EIR concerned disclosure of the extent of perchlorate contamination of local water wells. SCOPE did not appeal the trial court's denial of that challenge. Here SCOPE is not challenging the EIR's disclosure of the extent of perchlorate contamination. Instead, it is challenging the mitigation measures suggested by the EIR. That issue is not substantially identical to the issue raised in the first challenge. There has been no waiver.

III

We now consider SCOPE's challenge to the West Creek EIR. An EIR approved by the appropriate governmental agency is presumed adequate, and the [*14] party challenging the EIR has the burden of showing otherwise. (*Barthelemy v. Chino Basin Mun. Water Dist.* (1995) 38 Cal.App.4th 1609, 1617 [45 Cal. Rptr. 2d 688] (*Barthelemy*).) A party may challenge an EIR by showing the agency has abused its discretion either by reaching factual conclusions unsupported by substantial evidence or by failing to proceed in the manner CEQA provides. (*Vineyard*, *supra*, 40 Cal.4th at p. 435.)

In evaluating an EIR for CEQA compliance, we must adjust our scrutiny to the nature of the alleged defect. (*Vineyard*, *supra*, 40 Cal.4th at p. 435.) Where the alleged defect is that the agency's conclusions are not supported by substantial evidence, we must accord deference to the agency's factual conclusions. (*Ibid.*) We may not weigh conflicting evidence to determine who has the better argument. (*Ibid.*) Thus we may not set aside an agency's approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable. (*Ibid.*)

Where the alleged defect is that the agency has failed to proceed in a manner provided by CEQA, our review is de novo. (*Vineyard*, *supra*, 40 Cal.4th at p. 435.) An agency that fails to require an applicant to disclose information mandated by CEQA [*15] and to include that information in the EIR, fails to proceed in a manner prescribed by CEQA. (*Vineyard*, at p. 435.) Where a party challenges an EIR because it fails to disclose evidence that conflicts with its conclusions, the party must show that the failure to disclose the conflicting evidence precludes informed decision making or informed public participation. (*Barthelemy*, *supra*, 38 Cal.App.4th at p. 1617.)

IV

SCOPE challenges the adequacy of the EIR's water supply analysis as it relates to the Kern-Castaic transfer.

Recently, our Supreme Court in *Vineyard* articulated four principles for analysis of future water supplies under CEQA:

(2) "First, CEQA's informational purposes are not satisfied by an EIR that simply ignores or assumes a solution to the problem of supplying water to a proposed land use project. Decision makers must, under the law, be presented with sufficient facts to 'evaluate the pros and cons of supplying the amount of water that the [project] will need.' [Citation.]" (*Vineyard*, *supra*, 40 Cal.4th at pp. 430-431.)

(3) "Second, an adequate environmental impact analysis for a large project, to be built and occupied over a number of years, cannot be limited to the water supply for the first stage [*16] or the first few years. While proper tiering of environmental review allows an agency to defer analysis of certain details of later phases of long-term linked or complex projects until those phases are up for approval, CEQA's demand for meaningful

information 'is not satisfied by simply stating information will be provided in the future.' [Citation.]" (*Vineyard, supra*, 40 Cal.4th at p. 431.)

(4) "Third, the future water supplies identified and analyzed must bear a likelihood of actually proving available; speculative sources and unrealistic allocations ('paper water') are insufficient bases for decisionmaking under CEQA. [Citation.] An EIR for a land use project must address the impacts of *likely* future water sources, and the EIR's discussion must include a reasoned analysis of the circumstances affecting the likelihood of the water's availability. [Citation.]" (*Vineyard, supra*, 40 Cal.4th at p. 432.)

(5) "Finally, where, despite a full discussion, it is impossible to confidently determine that anticipated future water sources will be available, CEQA requires some discussion of possible replacement sources or alternatives to use of the anticipated water, and of the environmental consequences [*17] of those contingencies. [Citation.] The law's informational demands may not be met, in this context, simply by providing that future development will not proceed if the anticipated water supply fails to materialize. But when an EIR makes a sincere and reasoned attempt to analyze the water sources the project is likely to use, but acknowledges the remaining uncertainty, a measure for curtailing development if the intended sources fail to materialize may play a role in the impact analysis. [Citation.]" (*Vineyard, supra*, 40 Cal.4th at p. 432.)

The West Creek EIR does not simply ignore or assume a solution to the problem of supplying water to the project. It identifies specific water sources, including the Kern-Castaic transfer. Nor is the EIR's water supply analysis limited to the first stage or the first few years of the project. The EIR analyzes the Kern-Castaic transfer as part of the permanent supply for the entire project.

SCOPE's concerns center on the third principle articulated in *Vineyard*, that "the future water supplies identified and analyzed must bear a likelihood of actually proving available ... ." (*Vineyard, supra*, 40 Cal.4th at p. 432.)

SCOPE challenges the EIR's conclusion [*18] that an adverse outcome in the Monterey Agreement litigation is unlikely to affect Castaic's water supplies over the long term. The EIR supports this conclusion by stating that an adverse outcome in the Monterey Agreement litigation is unlikely to "unwind" existing agreements for permanent transfer of SWP water amounts, and that existing law and contracts allow transfers without the need for the Monterey Agreement.

SCOPE argues the EIR fails to disclose that the Kern-Castaic transfer is not final and permanent. SCOPE points out that the Kern-Castaic transfer is not included among the water transfers listed as final and permanent in the Monterey Settlement Agreement.

But the Monterey Settlement Agreement makes it clear that the Kern-Castaic transfer is not listed among the final transfer agreements because its EIR is subject to pending litigation in the Los Angeles Superior Court. (Citing *Friends, supra*, 95 Cal.App.4th 1373.) SCOPE points to no evidence that the parties to the Monterey Settlement Agreement consider the transfer as anything other than permanent now that the revised EIR for the transfer has been certified. The Monterey Settlement Agreement did not make the Kern-Castaic [*19] transfer temporary. A disclosure that the Monterey Settlement Agreement does not include the Kern-Castaic transfer on its list of final transfer agreements adds nothing substantial to an understanding of water availability.

In *California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219, 1237-1238 [35 Cal. Rptr. 3d 434], the court reviewed the adequacy of the discussion of the Kern-Castaic transfer contained in an EIR for an unrelated project. The court determined the EIR was inadequate because it failed to discuss the legal uncertainty of the Kern-Castaic transfer; specifically, the uncertainty created by the decertification of the transfer's original EIR.

In contrast, here the EIR discloses that the Monterey Agreement litigation makes the Kern-Castaic transfer legally uncertain. The EIR states that a judgment invalidating the Monterey Agreement could affect Castaic's acquisition of the 41,000 acre feet of water. The EIR concludes, however, that as a practical matter an adverse outcome in the Monterey Agreement litigation is unlikely to "unwind" the transfer agreement. Contrary to SCOPE's argument, this conclusion is supported by reasoned analysis. The EIR points out that the Kern-Castaic [*20] transfer is intended to be permanent, and that the transfer can be valid even without the Monterey Agreement.

SCOPE argues the Monterey Agreement is necessary

to validate the Kern-Castaic transfer because all transfers of SWP water require the DWR's consent. SCOPE cites no authority that expressly requires the DWR's consent for water transfers. Instead, SCOPE reasons the DWR's consent is required because it controls the SWP facilities necessary for delivery of the water. Assuming DWR's consent is necessary, SCOPE cites no authority that the consent must come through the Monterey Agreement. In fact, the EIR discloses that the transfer of surplus and nonsurplus water is authorized by statute. (Wat. Code, §§ 382, 383, 1745 et seq.) The EIR also notes that at least one Table A Amount of water was permanently transferred with the DWR's consent almost 15 years prior to the Monterey Agreement.

Quite aside from the Monterey Agreement, the legislative policy of this state is to facilitate water transfers. (See Wat. Code, §§ 475, 480 et seq.) SCOPE points to no evidence whatsoever that the DWR has any inclination to disapprove the Kern-Castaic transfer even if the Monterey Agreement is ultimately [*21] invalidated.

SCOPE points to a letter from the DWR to Castaic dated July 30, 2004. The letter is in an appendix to the West Creek EIR. The letter states that the DWR staff has reviewed the draft EIR for the Kern-Castaic transfer and found that the document "adequately and thoroughly discusses the proposed project and its impacts," and provides a good discussion of the relationship between the Kern-Castaic transfer and the current Monterey Agreement process. The letter also states that the DWR is using a new model to assess the potential impacts of Table A transfers in preparing the revised Monterey Agreement EIR. It acknowledges that Castaic used an earlier model to analyze the effect of the Kern-Castaic transfer. It states that the use of the new model "may cause slight changes in results, which may lead DWR to different conclusions than the conclusions made by [Castaic] in the current EIR." Nevertheless, the letter states Castaic's draft EIR adequately discusses SWP reliability and pre- and post-Monterey Agreement conditions.

SCOPE argues the West Creek EIR is deficient in that it fails to include or discuss information that a new water model may lead the DWR to different conclusions [*22] than those made by Castaic and its draft EIR. But the letter describes any possible change in result as "slight." The letter does not state that the slight change in results will probably lead to different conclusions; it says only that it "may" lead to unspecified different conclusions. It is highly improbable that a slight change in results will lead to radically different conclusions. In fact, the letter praises the draft EIR's discussion of the proposed project and its impacts. The information contained in the letter adds nothing substantial to West Creek's EIR.

SCOPE argues the EIR is devoid of any factual discussion of the impacts of the *PCL* decision on the West Creek project. But the EIR discloses that a final judgment invalidating the Monterey Agreement could impair Castaic's supply of SWP water. The EIR goes on to state that such a result is unlikely because the Kern-Castaic transfer can be validated outside the Monterey Agreement. SCOPE cites no authority for the proposition that the West Creek EIR must discuss the factors the DWR will be required to consider in preparing a revised Monterey Agreement EIR. The Kern-Castaic transfer is not dependent on the Monterey Agreement. [*23] Such a discussion is not necessary for informed decision making or public participation.

SCOPE cites *Vineyard, supra*, 40 Cal.4th at page 440, for the proposition that it is improper for an EIR to tier from an environmental document that will be completed in the future. SCOPE points out that West Creek's EIR was certified without waiting for the DWR to complete its revised EIR for the Monterey Agreement. But West Creek's EIR was not tiered on future Monterey Agreement environmental documents. In fact, West Creek's water supply analysis is based on the premise that the Monterey Agreement litigation is unlikely to affect the Kern-Castaic transfer.

(6) West Creek's EIR satisfies the third principle of analysis stated in *Vineyard.* The record contains substantial evidence demonstrating a reasonable likelihood that water from the Kern-Castaic transfer will be available for the project's near- and long-term needs. (See *Vineyard, supra*, 40 Cal.4th at p. 437.) The record also shows the County proceeded in a manner required by CEQA. The EIR neither improperly used tiering to defer all analysis of supplies to future stages of the project, nor relied upon demonstrably illusory supplies. (40 Cal.4th at p. 437.)

SCOPE argues [*24] that West Creek's EIR is deficient because it fails to analyze the project's water supply in the absence of the 41,000 afy Kern-Castaic

transfer. When first published, *Vineyard*'s fourth principle was slightly different than the one stated in the subsequent modified opinion. Principle four then stated that an EIR requires analysis of replacement or alternative water sources where "a full discussion leaves some uncertainty regarding actual availability of the anticipated future water sources ... ." Principle four in the modified version of *Vineyard* allows slightly more flexibility in determining the issue of available future water sources. It requires analysis of replacement or alternative sources only if it is "impossible to confidently determine" that anticipated future water sources will be available.

Here West Creek's EIR acknowledges there is at least some legal uncertainty about the Kern-Castaic transfer. The EIR states in part: "An adverse final judgment invalidating the Monterey Agreement could affect [Castaic's] completed acquisition of the 41,000 AF, which could in turn impair [Castaic's] supply of SWP water through its contracts with DWR and other SWP contractors."

Some would [*25] argue it is certain that the outcome of litigation is seldom certain. But whatever the outcome of the *PCL* litigation, it is highly unlikely it will affect the Kern-Castaic water transfer. The water is now available, and for years has been available for the project under executed agreements. The recertified EIR notes that the Kern-Castaic transfer can legally occur without the Monterey Agreement. Suffice it to say, however the Monterey Agreement litigation is eventually decided, the Kern-Castaic transfer will likely not be affected. Per principle four, we can confidently determine that the water will be available.

V

SCOPE contends West Creek's EIR is deficient in that it fails to discuss the impact of the lack of funding to remediate perchlorate contamination of local water wells. SCOPE has no quarrel with the EIR's discussion of perchlorate contamination of local wells. Its contention is limited to the lack of funding for remediation measures.

In addition to SWP water, two local aquifers will serve as part of the project's water supply, the Alluvial Aquifer and the Saugus Aquifer. SCOPE argues there are 67 wells owned by water companies in these aquifers and an undisclosed number of private [*26] wells. SCOPE points to evidence that the estimated cost of remediation is $500,000 per well. No source of funding is identified in the EIR to pay for the equipment necessary for remediation.

SCOPE relies on *Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261-1262 [100 Cal. Rptr. 2d 301] (*Federation*). There the city adopted a general plan framework (GPF) as part of its general plan. The GPF identified mitigation measures, including a transportation plan designed to mitigate the transportation impacts of the GPF's growth policies. The transportation plan acknowledged that to implement the mitigation measures would require the cooperation of various public agencies, that the city's portion of the costs would exceed its revenues, and that there is "great uncertainty" whether the mitigation measures would ever be funded or implemented. Although the city adopted the mitigation measures, it made no effort to ensure they will actually be implemented or enforceable. The court determined that the city's approval of the GPF must be vacated for failing to ensure that feasible mitigation measures will actually be implemented. (*Id.* at p. 1261, citing §§ 21002.1, subd. (b), [*27] 21081.)

Here, although water agencies may have 67 wells, only six of them have been identified as being contaminated with perchlorate. Unlike the city in *Federation*, here the County did not acknowledge there is great uncertainty that mitigation measures would ever be funded or implemented. To the contrary, the EIR states in part: "Due to the high value of this local water resource, the purveyors have placed a high priority on replacing the impacted groundwater capacity by installing wellhead treatment and the construction of new wells." Here, unlike *Federation*, there is nothing to suggest the mitigation measures will not be implemented. Finally, SCOPE points to nothing in *Federation* or any other case that requires the EIR to discuss funding for mitigation measures.

DISPOSITION

The judgment is affirmed. Costs on appeal are awarded to respondents and real parties in interest.

Coffee, J., and Perren, J., concurred.

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LOS ANGELES
SUPERIOR COURT

SUPERIOR COURT OF CALIFORNIA

COUNTY OF LOS ANGELES

SIERRA CLUB, et al., Petitioner, vs. CITY OF SANTA CLARITA, et al., Respondent.	CASE NO. BS 098 722 DECISION ON SUBMITTED MATTER
NEWHALL LAND AND FARMING, Real Party in Interest.	

Having taken the matter under submission on May 31, 2005, having considered all the evidence admitted and the parties' oral and written arguments, the Court rules as follows:

Petitioners Sierra Club, Center for Biological Diversity, Friends of the Santa Clarita River, and California Water Impact Network ("Petitioners") seek a Writ of Mandate commanding Respondents City of Santa Clarita and Santa Clarita City Council ("City" or "Respondents") to set aside its decision certifying the Final Environmental Impact Report ("FEIR") and approving the Project known as Riverpark in favor of Real Party in Interest Newhall Land and Farming ("Newhall").

The Riverpark project is located on a 695.4-acre site. Originally, Riverpark proposed 1,183 residential units, consisting of 439 single-family homes and 744 apartments, and 40,000 square feet of commercial development, a trail system, a 29-acre active/passive park along the Santa Clara River, and approximately 442 acres of open space area, including most of the Santa Clara River. (2 AR, Tab 4, 340-42 [Draft EIR, § 1.0, Project Description].) Through the public hearing process, the project was revised by converting the apartments to condominiums or townhouses, reducing to 1,123 the residential units and to 16,000 square feet commercial development, and preserving additional areas of the Santa Clara River and its south fork. (10 AR, Tab 12, 11742-44 [FEIR, Project Revisions and Additional Information].) Further hearings in 2005 reduced the residential units to 1,089, consisting of 432 single family homes and 657 condominium/townhouses, and provided for the preservation of more land and river areas, totaling 788 acres (470-acres on-site) for recreation and open space. (10 AR 11742-44; 9 AR, Tab 11, 11418-22.) Included among the 318 off-site acres are the remaining portions of the south fork of the Santa Clara River owned by RPI, and 37 acres of the Santa Clara River significant ecological area ("SEA").

Project approvals included a General Plan Amendment, a Zone Change, a vesting tentative tract map, a conditional use permit to build in excess of two stories and a maximum of 50-feet, Hillside Innovative Application, a permit for vehicular gating, a variance to reduce setback requirements and to build sound walls in excess of 7 feet, Hillside Development Application, and an Oak Tree Permit. (1 AR, Tab 2, 9-114; 2 AR 259.)

The Planning Commission held 9 hearings and on 12/21/04 recommended that the City Council certify the EIR and adopt a Statement of

Overriding Considerations for impacts that could not be mitigated to a less than significant level. (1 AR, Tab 2, 9-22 [App. Reso.]; 7:2 AR, Tab 9, 8079-81 [12/21/04 Hearing Transcript]; 73 AR, Tab 652, 51639-43 [12/21/04 Staff Report].)

The City Council held 3 hearings and certified the EIR on 5/24/05, unanimously approving the project on 6/14/05. (1 AR, Tab 2, 22-26; 1 AR, Tab 3, 115-229.)

Petitioner filed within Petition for Writ of Mandate alleging non-compliance with CEQA.

To establish violation of the California Environmental Quality Act ("CEQA"), Petitioner must show an abuse of discretion in that the County either failed to proceed in the manner required by law or the determination or decision is not supported by substantial evidence. (Code Civ. Proc., § 1094.5(b); Pub. Resources Code, §§ 21168, 21168.5.) When CEQA non-compliance is alleged, the Court reviews the entire record to see if substantial evidence supports the challenged determinations.

"Substantial evidence" is defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (14 Cal. Code Regs., § 15384(a); Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 393.) Substantial evidence may include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts, but not argument, speculation, unsubstantiated opinion, or clearly erroneous evidence. (Pub. Resources Code, §§ 21080(e)(1)(2), 21082.2(c).)

"[I]n applying the substantial evidence standard, the reviewing court must resolve reasonable doubt in favor of the administrative

finding and decision. As such, if there are conflicts in the evidence, their resolution is for the agency." (River Valley Preservation Project v. Metropolitan Transit Development Board (1995) 37 Cal. App. 4th 154, 168.) Determinations in an EIR must be upheld if supported by substantial evidence, and the mere presence of conflicting evidence in the administrative record does not invalidate them. (Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1143.) An agency's approval of an EIR may not be set aside on the ground that an opposite conclusion would have been equally or more reasonable. (Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 393.) The Court's role is not to substitute its judgment for that of the local agency representatives, but to enforce legislatively mandated CEQA requirements. (Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553, 564.) The Court passes only upon the EIR's sufficiency as an informative document, not upon the correctness of its environmental conclusions. (Laurel Heights at 392.)

I. City Properly Relied on the 41,000 AFY Water Transfer for Planning Purposes

Petitioners contend that the City is legally precluded from relying on water from the transfer of 41,000 AFY acre feet per year ("AFY") of State Water Project ("SWP") water to the local SWP wholesaler, Castaic Lake Water Agency ("CLWA") ("41,000 AFY transfer") for planning purposes, and the EIR's reliance on water supplies is not supported by substantial evidence.

The water for the Riverpark project is to be supplied by CLWA.

In 1999, CLWA entered into a contract with the Kern Delta Water District for transfer of 41,000 acre feet per year (AFY) as part of the

"Monterey Agreement."[1] The CLWA certified an EIR for the 41,000 AFY transfer tiered on the earlier program EIR that had been prepared for the Monterey Agreement.

In Planning and Conservation League v. Dept. of Water Resources (2000) 83 Cal.App.4th 892 ("PCL"), the PCL challenged the Monterey Agreement program EIR. The Court of Appeal held that the EIR should have been prepared by DWR as the lead agency, rather than by one of the contractors, and that a new EIR must be prepared and certified by DWR. The Court did not invalidate the Monterey Agreement or enjoin the water transfers effected thereunder, but directed the trial court to consider under CEQA section 21168.9 whether the Monterey Agreement should remain in place pending preparation of DWR's new EIR, and to retain jurisdiction pending certification of DWR's EIR.

In Friends of Santa Clara River v. CLWA (2002) 95 Cal.App.4th 1373 ("Friends I"), the Court of Appeal ordered CLWA's EIR decertified because it had been tiered from the Monterey Agreement EIR, adjudged inadequate: "We have examined all of appellant's other contentions and find them to be without merit. If the PCL/tiering problem had not arisen, we would have affirmed the judgment." (Friends, supra, at 1387.) The Court did not issue any ruling affecting CLWA's ability to continue to use and rely on water supplies from the 41,000 AFY Transfer, leaving it to the trial court's discretion whether to enjoin CLWA's use of the water pending its completion of a new EIR. (Friends, supra, at 1388.)

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[1]An excellent history of the SWP and the role of Department of Water Resources ("DWR") in the management of the SWP, the Monterey Agreement and amendments, and relevant litigation is set forth in Calif. Oak Foundation v. Santa Clarita, 133 Cal.App.4th 1219 (2005).

In September 2002, on remand to the Los Angeles County Superior Court, the Friends petitioners applied under CEQA section 21168.9 to enjoin CLWA from continuing to use and rely on water from the 41,000 AFY Transfer. The trial court rejected that request, and in December 2003, the Court of Appeal affirmed the trial court's ruling allowing CLWA to continue to use and rely on water from the 41,000 AFY Transfer pending completion of its new EIR. (Id.; see also, Friends of the Santa Clara River v. Castaic Lake Water Agency, 2003 WL 22839353 ("Friends II"] at Tab 7, 5 AR 4180-97.)

Meanwhile, on 5/5/03, before the trial court acted on remand, the parties to the PCL litigation entered into the Monterey Settlement Agreement.[2] Section II of that agreement provides that SWP would continue to be administered and operated in accord with both the Monterey Amendments and the terms of the Monterey Settlement Agreement. (5:1 AR, Tab 7, 4367.) The Monterey Settlement Agreement did not invalidate or vacate the Monterey Amendments, or any water transfer effected under them.

A. PCL, Friends of the Santa Clara River and California Oak do not preclude reliance on the 41,000 AFY Water Transfer

Petitioners contend that legal uncertainties surrounding the 41,000 AFY transfer due to the PCL and Friends lawsuits preclude the City from relying on water from that transfer for planning purposes. Specifically, Petitioners contend that because PCL requires the Department of Water Resources ("DWR") to prepare an EIR analyzing the

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[2]On 6/6/03, the Sacramento County Superior Court issued its Order under CEQA section 21168.9, approving both the Monterey Settlement Agreement, and the continued operation of the SWP pursuant to the Monterey Amendment and the approved Monterey Settlement Agreement. (See 6 AR, Tab 8, 6557; 8 AR, Tab 10, 9775-78 [Order].)

effects of the eight SWP water transfers completed under the Monterey Agreement, none of those transfers, including the 41,000 AFY transfer, can be relied on for planning purposes until DWR has completed and certified that EIR. Moreover, Petitioners contend that the Court of Appeal so held in California Oak Foundation v. City of Santa Clarita (2005) 133 Cal.App.4th 1219.

PCL, Friends and California Oak (discussed infra) do not preclude reliance on the 41,000 AFY transfer for planning purposes.

While the Courts of Appeal could have simply said that all EIRs requiring reliance on the 41,000 AFY transfer, must await the certification of a new FEIR by DWR (and resolution of any litigation challenging such FEIR), they have not done that.

Although the Court in Friends and California Oak observed that CLWA "may be able to cure the PCL problem by awaiting action by the [DWR] complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or addendum . . . tiering upon a newly certified Monterey Agreement EIR" (California Oak, supra, 133 Cal.App.4th at 1230, n.6), neither court said that the CLWA and City of Santa Clarita must await the DWR FEIR.

CLWA certified a new EIR on the 41,000 AFY Transfer on 12/22/04. (Tab 10, 8:2 AR 10441-480 [CLWA Resolution certifying the EIR]; see also Tab 637, 63 AR 43468-44683 [CLWA FEIR]; Tab 12, 10 AR 11750 [Final Riverpark EIR Project Revisions and Additional Information.) This new EIR analyzes the effects of the 41,000 AFY Transfer without tiering from the Monterey Agreement EIR.[3] Although CLWA's EIR is currently being

[3]The CLWA EIR concludes that the Monterey Settlement Agreement neither requires that DWR's new EIR be certified before CLWA can certify its new EIR for the 41,000 AFY Transfer, nor requires that DWR's new EIR

challenged, CEQA requires that the EIR be conclusively presumed to comply with CEQA, until a court has judged it deficient. (See. e.g., CEQA, § 21167.3(b), CEQA Guidelines, § 15231; see also, Barthelemy v. Chino Basin Water Dist., supra, 38 Cal.App.4th 1609, 1617.)

Since the prior CLWA EIR for the 41,000 AFY Transfer was overturned solely because it tiered from a later-decertified Monterey Agreement EIR, and CLWA has now certified an EIR approving the 41,000 AFY Transfer without tiering from the Monterey Agreement EIR,[4] the City reasonably included water from the 41,000 AFY Transfer in CLWA's supplies, after considering at length the current status of all litigation.[5]

B. The 41,000 AFY transfer is sufficiently certain and the Monterey Settlement Agreement does not preclude Respondents from relying on said transfer in its EIR pending DWR's preparation of its EIR.

As argued by Respondents, three provisions in the Monterey Settlement Agreement, read together, refute Petitioners' argument that the 41,000 AFY Transfer was excluded from Attachment E because it was a non-permanent transfer, which may not be used for planning purposes.

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serve as the EIR for that Transfer. (Tab 637.63 AR 43987-92 [CLWA Master Response to Comments].) These conclusions are consistent with Friends II, that the 41,000 AFY Transfer is *not* legally bound to the PCL litigation or to DWR's new EIR. (Tab 7, 5:1 AR 4195-4196.)

[4]Although DWR is in the process of certifying its own EIR pursuant to PCL and the Monterey Settlement Agreement, DWR approved CLWA's preparation of its EIR in a comment letter on the Draft EIR, and noted that CLWA's Draft EIR "adequately and thoroughly discusses the proposed project and its impacts," and "adequately discusses the reliability of the SWP, pre- and post-Monterey Amendment conditions, future conditions and SWP operations." (Tab 637, 63 AR 43482-83.)

[5]Respondents' Riverpark EIR discusses the prior litigation and devotes 8 pages to discussion of the litigation surrounding CLWA's EIR on the 41,000 AFY Transfer in its response to comments alone. (Tab 8, 6 AR 6551-6559.)

Section III(C)(4) requires DWR to conduct an "[a]nalysis of the potential environmental impacts relating to" all eight of the completed water transfers, not just of the 41,000 AFY Transfer (Tab 7. 5:1 AR 4368-69) and to analyze all of the transfers in the same manner, even though seven of them, defined in the Agreement as the "Attachment E Transfers," were beyond challenge. (Id. [Section III(C)(4)j; Tab 7, 5:1 AR 4370 [Sections III(D), III(E)].) Section III(D) precludes challenges to the Attachment E Transfers, which had been litigated in other forums or had become final without challenge by the expiration of limitation periods. (Tab 7. 5:1 AR 4370.) Section III(E) acknowledges the jurisdiction of Los Angeles Superior Court over the then-ongoing Friends litigation challenging CLWA's EIR on the 41,000 AFY Transfer (Tab 7, 6 5:1 AR 4370) pending completion of CLWA's new EIR, but does not distinguish the 41,000 AFY Transfer from the Attachment E transfers otherwise.

The Monterey Settlement Agreement does not prohibit reliance on the 41,000 AFY Transfer. All of the water transfers were effected as permanent transfers under the Agreement and are to be analyzed in the same way in DWR's new EIR, as required by Section III(C)(4).

Petitioner contends that the continued availability of the 41,000 AFY transfer is uncertain until DWR has concluded its EIR and that under California Oak, the City may not presume that the outcome of DWR's environmental review will be the continued availability of the 41,000 AFY.

DWR, however, has recognized the 41,000 AFY Transfer as a permanent transfer under the Monterey Agreement by entering into Amendment No. 18 to CLWA's agreement, which increases its Table A Amount by 41,000 AFY (Tab 10, 8:1 AR 9212-14), and has since consistently allocated water

supplies to CLWA based on that entitlement (Tab 4, 2:2 AR 1015-17 [DEIR]). Furthermore, as noted supra, DWR also submitted positive comments on CLWA's Draft EIR. (Tab 637, 63 AR 43482-83).

DWR's analysis of the 41,000 AFY Transfer in its new EIR will be part of a broader analysis of past and future permanent transfers of Table A Amounts, and will not constitute the EIR for the 41,000 AFY transfer. (5:1 AR, Tab 7, 4369.) As noted supra, PCL, Friends and the Monterey Settlement Agreement do not prohibit CLWA's preparation of its new EIR addressing the impacts of the 41,000 AFY transfer. (Tab 637, 63 AR 43987-92 [CLWA Master Response to Comments].)

California Oak, being most recent, deserves further discussion. In California Oak, the Court struck down the City's certification of an earlier EIR for an industrial project because it did not address the legal uncertainties surrounding the 41,000 AFY Transfer. California Oak did not bar the use of water from the 41,000 AFY transfer for all planning purposes. It criticized the City's failure to explain its reasoning for relying on the 41,000 AFY transfer, but held that it was up to the City to determine whether or not to rely on the 41,000 AFY transfer in its planning. The Court stated: "*[T]he question is whether the entitlement should be used for purposes of planning future development*, since its prospective availability is legally uncertain. *Although this decision must be made by the City*, the EIR is intended to serve as an informative document to make government action transparent. Transparency is impossible without a clear and complete explanation of the circumstances surrounding the reliability of the water supply." (Id. at 1237-38; emphasis supplied.) Before relying on water from the 41,000 AFY transfer for planning purposes, the City must "present a reasoned analysis of the significance . . . [or insignificance] of the

decertification of the EIR for the Castaic purchase; how demand for water would be met without the 41,000 AFY entitlement; or why it is appropriate to rely on the 41,000 AFY transfer in any event." (Id. at 1244.)

The Court in California Oak ruled that the EIR contained an inadequate discussion, in fact no discussion at all, of the uncertainty regarding the 41,000 AFY transfer in the EIR itself, but only references to it in the appendices, and responses to comments. The text of the EIR did not mention the decertification of the CLWA EIR, or that "entitlements are not really entitlements, but only 'paper' water." (California Oak, supra, 133 Cal.App.4th at 1236.) From the EIR, the Court could only assume that City concluded the 41,000 AFY would continue to be available, but found that the lack of a forthright discussion of a significant factor that could affect water supplies was antithetical to the purpose of an EIR to reveal to the public the basis on which officials approve or reject environmental action. (Id. at 1237-38). Thus, the Court held that the EIR failed to inform the public of the litigation uncertainties surrounding the 41,000 AFY transfer, and substantial evidence did not support the City's decision to rely on water from that transfer for planning purposes.

Here, by contrast, the City discussed the 41,000 AFY transfer and its uncertainties at considerable length, both in the EIR and throughout the review process. (See infra, pp. 12-16.) The PCL, Friends, Friends II, and California Oak decisions were all discussed. The City concluded that it was likely that the 41,000 AFY would be available for the project. By the time the City Council held it first Riverpark hearing on 1/25/05, the City also had before it CLWA's certified new EIR for the 41,000 AFY transfer, which was not the case in California Oak.

The Riverpark EIR adequately discloses the uncertainties regarding the 41,000 AFY transfer and discusses them forthrightly.

C. Substantial evidence supports reliance on 41,000 AFY water transfer and the EIR's analysis of the transfer is not flawed

Petitioners contend that substantial evidence does not support the City's decision to rely on water from the 41,000 AFY Transfer.

As noted, California Oak held that, as long as the city has analyzed the uncertainties surrounding this water supply, it is within the City's province to decide whether to rely on the 41,000 AFY Transfer for planning purposes.

The EIR and the Administrative Record contain substantial evidence supporting the City's decision that water from the 41,000 AFY Transfer can be relied on as part of CLWA's supplies.

CLWA, the SWP and the reliability of its water supplies, the Monterey Agreement, the PCL litigation, the Monterey Settlement Agreement, CLWA's Table A Amounts, and the Friends litigation are all extensively discussed in the EIR. The City specifically discloses that a future adverse judgment invalidating the Monterey Agreement could affect CLWA's ability to use water from the 41,000 AFY transfer and adversely affect CLWA's water supplies over the long term, but that, based on the information discussed, CLWA (the experts concerning water supply) believed that such a result "is unlikely to >unwind' executed and completed agreements with respect to the permanent transfer of SWP Water Amounts." (Tab 4,2:2 AR 1014-15; see also, Tab 8,6:2 AR 6551-59 [TR-3].) Further, the EIR notes the 41,000 AFY Transfer was completed in 1999, CLWA has paid approximately $47 million for the additional Table A Amount, the monies have been delivered, the sales price has been financed through CLWA by tax-exempt bonds, and DWR has increased CLWA's

SWP maximum Table A Amount and delivered or made available to CLWA the 95,200 AFY because it was a permanent transfer/reallocation of SWP Table A entitlement between SWP contractors." (Tab 4, 2:2 AR 1013.) Included in the EIR's Appendices and referenced in the EIR, are the 19 documents supporting the EIR's analyses, including the PCL decision, the Monterey Settlement Agreement, the Sacramento County Superior Court's "Order Pursuant to Public Resources Code Section 21168.9," the Friends decision, the Los Angeles County Superior Court's Judgment on remand in the Friends litigation, CLWA's final EIR for the 41,000 AFY Transfer, and CLWA's Resolution certifying that EIR.

The City responded to numerous comments challenging the EIR's conclusion that CLWA could rely on the 41,000 AFY Transfer for planning purposes. Due to the number of comments, and the amount of information required to respond, the City prepared a "master" response on this subject, TR-3 (Tab 8, 6:2 AR 6551-59). TR-3 reviews the information disclosed in the EIR's Water Services section regarding the 41,000 AFY Transfer and the Friends litigation, then responds to comments asserting that: (i) the PCL litigation and Monterey Settlement Agreement preclude CLWA from using or relying on that water transfer, and (ii) because the Monterey Settlement Agreement requires DWR to prepare a new EIR on the Monterey Agreement, CLWA cannot rely on the water transfer until that new EIR is completed. The City also prepared responses to individual comment letters on the 41,000 AFY Transfer[6] All of these comments and

[6]See, for example, responses to comments from the Santa Clarita Organization for Planning and the Environment (Tab 8, 6 AR 5962-66, 6689-6717), Petitioners Sierra Club (Tab 8, 6 AR 6194-6201, 6370, 6737-66, 6829-30), California Water Impact Network (Tab 8, 6 AR 6273-74, 6767-75), Friends (Tab 8, 6 AR 6387, 6835-36), and from a law firm involved in the PCL litigation (Tab 8, 6 AR 6275-78, 6776-83).

responses are included in the Riverpark Final EIR.

The City's Planning Commission also held a study session on the subject of the reliability of available water supplies. (Tab 9, 7 AR 7480-92.)

Ultimately, the City reviewed all of this information, and the views expressed in the EIR, by CLWA, and by commentators opposed to the City considering the 41,000 AFY Transfer, and determined it was appropriate for the City to rely on those SWP supplies. (Tab 2, 1 AR 9-114 [App. Reso]; Tab 3. 1 AR 174-220 [CEQA Findings].) The City explained that its determination to allow Riverpark to rely on the 41,000 AFY Transfer was supported by the information in the EIR for four main reasons: (i) nothing in the Monterey Settlement Agreement or in any court decision precludes that reliance; (ii) nothing in the Monterey Settlement Agreement precludes CLWA from preparing and certifying its revised EIR for that transfer as instructed by the Court of Appeal in the Friends decision and, in fact, the Settlement Agreement was carefully crafted to leave that EIR and any required remedies to the Los Angeles County Superior Court; (iii) the fact that DWR is preparing an EIR that will analyze all of the water transfers under the Monterey Agreement does not preclude CLWA from preparing and certifying its revised EIR, as instructed by Friends; and (iv) CLWA's Final EIR re-approving the transfer had been certified without tiering from the Monterey Agreement EIR. (Tab 8, 6:2 AR 6558-59 [TR-3]; Tab 10, 8:2 AR 10441-10480; Tab 12, 10 AR 11750.)

As directed by California Oak, the City here has analyzed in considerable detail the uncertainties surrounding the AFY water transfer and explained the basis for its reliance on that transfer. The City's

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determinations are not an abuse of discretion, but supported by substantial evidence.

Petitioners' contention that the City makes false statements about the transfer (OB 7-9) is not borne out by the record.

The City's statement reads: "Because the 41,000 AF was a permanent water transfer, because DWR includes the 41,000 AF in calculating CLWA's share of SWP Table A Amount, and because the courts have not prohibited CLWA from using or relying on those additional SWP supplies, the City has determined that it remains appropriate for the Riverpark project to include those water supplies in its water supply and demand analysis, while acknowledging and disclosing uncertainty created by litigation." (Tab 8, 6:2 AR 6768-69.)

This statement is qualified and explained by the City's extensive discussion of the legal uncertainties arising from litigation, supra, and is not misleading. The statement cannot be taken out of context and must be read in light of other statements and evidence in the record. As regards "reliance on the fact that DWR counts the 41,000 AFY in Table A amounts, DWR has acknowledged the 41,000 AFY Transfer by continuously delivering SWP water, including water from the Transfer, to CLWA for many years. The Monterey Settlement Agreement treats the 41,000 AFY Transfer identically to the Appendix E Transfers. The City's discussion of the reliability of SWP water supplies, including the 41,000 AFY Transfer water, is a discussion relating to the ability of the SWP to deliver only such supplies as are available on a year-to-year basis. (See, e.g., Tab 4, 2:2 AR 1022-30.) The City discussed the reliability of available SWP supplies under average, dry and critical dry years, and that there would be sufficient supplies to meet Riverpark's demand and cumulative demand. (Id. at 1051-70.)

Unlike California Oak, the record shows that the City considered the 41,000 AFY transfer in the EIR, including the legal uncertainties, the reliability of available supplies of SWP water in general, and concluded, based on substantial evidence, that it was appropriate to rely on those supplies for planning purposes. The City also considered and responded to numerous comments. After 12 hearings before the Planning Commission and City Council, the City certified the EIR and approved Riverpark, knowing that water supplies from the 41,000 AFY Transfer were to some degree uncertain, but explaining the reasoning for its determinations and the evidence that supported it. That is all that CEQA and California Oak require.

II. Impacts on Biological Resources were Appropriately Evaluated

Petitioner contends that the project's impact on three special-status species, the western spadefoot toad ("Toad"), the San Diego back-tailed jackrabbit ("Jackrabbit") and the holly-leaf cherry woodlands ("Holly-Leaf") must be considered significant because they are "rare" within the meaning of CEQA, the EIR's responses to comments by Department of Fish and Game ("DFG") were inadequate, as were mitigation measures for the Toad and Jackrabbit.

CEQA Guidelines section 15065(a) provides: "A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that . . . : (1) The project has the potential to . . . substantially reduce the number or restrict the range of an endangered, rare or threatened species . . . ." (Guidelines, § 15065(a); 51 AR 33996.)

Here, an EIR was prepared and the impacts on the Toad, Jackrabbit, and Holly-Leaf considered. Petitioner contends that, to assess the

significance of the project impacts on the Toad, Holly-Leaf, and Jackrabbit, the EIR was required to determine whether the species are "rare" under Guidelines section 15380(b)(2)(A), which defines "rare" as "[a]lthough not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens."

The EIR's conclusions with regard to these species are supported by substantial evidence.

Toad

The EIR concluded that impacts on the Toad would be significant and unavoidable (Tab 7, 5:2 AR 5774, 5827).

The EIR describes the Toad as a special-status species (Tab 7, 5:2 AR 5720-5730, 5737, 5831-36; see also Tab 9, 7:2 AR 8572 [Revised Draft EIR ("RDEIR")]), and defines "special-status wildlife" to include rare species, that is, State Species of Special Concern and Federal Species of Concern. (Tab 7, 5:2 AR 5728.) The EIR notes that Toads were found in three seasonal rainpools created by human disturbances in the middle of areas planned for development: in the right-of-way for the extension of Newhall Ranch Road, in the middle of Planning Area A-1, and in the middle of Planning Area B (Tab 7, 5:2 AR 5832-34). The potential impacts on the Toad were analyzed in accordance with CEQA and City thresholds and found to be significant (id. at 5750-53, 5774). Mitigation was recommended in the form of pre-construction surveys, preparation of a Resource Management and Monitoring Plan ("RMMP"), design and construction of new enhanced Toad habitat and implementation of a capture and relocation and monitoring program. Ultimately the EIR concluded that the impacts would remain significant and unavoidable, because such measures have not yet been proven to he highly effective,

and because of the possibility that not all of the individual Toads could be successfully captured and relocated (id. at 5811).

The City's responses to comments and its actions addressed DFG's concerns (Tab 8, 6:1 AR 5880-86 [DFG letter], Tab 8, 6:2 AR 6621-30 [response]), and those of other commentators (see, e.g., Tab 8, 6:1 AR 5876-77 [Santa Monica Mountains Conservancy letter], Tab 8, 6:2 AR 6610-14 [response]). The City followed DFG's recommendations, the City's "Western Spadefoot Toad Habitat Enhancement and Mitigation Plan" ("Toad Plan") was created by the City's expert biologist in consultation with DFG and was ultimately approved by DFG.

Substantial evidence in the record supports the City's decision to mitigate the impacts on the Toad rather than reconfigure the Project. Such evidence included opinion of City's expert biologist that the Toad Plan was likely to succeed, and DFG's approval of that Plan. It properly exercised its discretion to consider the remaining impacts on the Toad to be significant and unavoidable, and adopted a Statement of Overriding Considerations for the Toad. (Tab 3, 1 AR 145-150, 155-163, esp. 159 [SOC].) Arguments similar to Petitioners' arguments here were rejected in Defend the Bay v. City of Irvine (2004) 119 Cal.App.4th 1261, 1276-77.

Jackrabbit

For the Jackrabbit, the Revised DEIR determined that "[b]ecause this species is not state or federally listed as Endangered or Threatened, because it is considered relatively abundant in suitable habitat areas within its range, and because the direct loss of individual jackrabbits is expected to be low, it is expected that the regional population would not drop below a self-sustaining level with the implementation of this project," the loss of any individual

jackrabbits would not be considered a significant impact. (Tab 7, 5:2 AR 5775.)

The EIR identifies the Jackrabbit as a State and federal special-status species, and determined the significance of impacts on that species based on CEQA and City thresholds that recognize substantial adverse effects on special-status species and substantial reduction of habitat as being significant impacts (Tab 7. 5:2 AR 5750-53). Based on field surveys (see, e.g., Tab 7, 5:2 AR 5707-08 [RDEIR, § 4.6; Tab 6, 4 AR 4153-54), the EIR reported that Jackrabbits. which occur in a variety of habitats, had been sighted on-site in the riverbed, open terraces and disked fields, but that because those areas are disturbed, the overall quality of the habitat on site suitable for Jackrabbits was only moderate. (Tab 7, 5:2 AR 5735, 5739, 5775; Tab 9, 7:2 AR 8572 [RDEIR].) The EIR noted that the Project had been designed to include all NRMP applicable mitigation measures for the areas in and adjacent to the Santa Clara River (Tab 7. 5:2 AR 5754-61, and 5789-5800 [RDEIR, § 4.61; Tab 9, 7:2 AR 8576 [RDEIR]), including preconstruction surveys, capture and relocation, and riparian habitat creation enhancement. (Id. at 5757-5759, and 5793-95 [RDEIR, § 4.6]; see also, Tab 9, 7:2 AR 8541-42 [RDEIR]).

The EIR concluded that project-level impacts would be less than significant, not just because Jackrabbit is not a listed species and does not require heightened protection, but also because the species is abundant where it occurs, and, since it is mobile and would likely disperse to nearby better habitat rather than be killed as the site is developed, few individuals would be lost due to development of the site. (Tab 7, 5:2 AR 5775.) Nevertheless mitigation including preparation of an RMMP and preconstruction surveys of areas outside the NRMP areas for

the potential capture and relocation of special-status species was recommended. (Tab 7, 5:2 AR 5800-01, 5809-10; Tab 9,7:2 AR 8543-45, 8584-85 [RDEIR pages].) The EIR also concluded that the project-level and cumulative impacts on an aggregate of 280 acres of habitat, in general, necessarily including that for Jackrabbits, would be significant and unavoidable even after mitigation (Tab 7, 5:2 AR 5761-62, 5811, 5825-26, 5827). A Statement of Overriding Considerations was adopted for these impacts. (Tab 3, 1 AR 145-163.)

The City did not ignore DFG's comments, but in response to DFG, stated that it had considered the NRMP and its EIS/EIR, which had earlier analyzed impacts on the Jackrabbit within the NRMP area (in and adjacent to the Santa Clara River), and found those impacts to be significant and imposed mitigation to reduce them to a less than significant level. (Tab 8, 6:2 AR 6622-23.) Those mitigation measures, the City explained, had been incorporated into the Project as design features, and that Riverpark scaled back the activities permitted by the NRMP, so that the activities within the NRMP area would have even less of an impact on the Jackrabbit than the NRMP EIS/EIR had determined. (Tab 8, 6:2 AR 6622-24.)

Development was moved further back from the Santa Clara River to protect riparian resources, including Jackrabbit habitat (including bank stabilization in a portion of the site). A public trail that had been proposed in the riverbed was moved out to join the pedestrian/bike bridge over the Aqueduct. (Tab 8, AR 6623-24; see also Tab 2, Tab 4, Tab 12 [FEIR, Final Project Revisions]; Tab 11) The City also explained that the mitigation requiring preconstruction surveys and capture and relocation was more definitive than DFG described B more than simply forcing individuals to disperse. As to cumulative impacts, the City

noted that because the NRMP's mitigation measures had been imposed on all of the land between the eastern border of Riverpark vest to Castaic Creek, and because Riverpark had been revised to preserve even more upland, the EIR had concluded that cumulative impacts on the species would be less than significant. (Tab 8, AR 6624.)

DFG disputed the EIR's conclusions without challenging the City's survey methodology. (Tab 8, AR 5882.) As the City's response to DFG's comment letter shows, the City considered DFG's comments, but disagreed with them. The City's response did not assert that the EIR relied solely upon the NRMP EIS/EIR's analysis of impacts on the Jackrabbit. (Tab 8, AR 6622-24.) Rather, the EIR conducted its own independent analysis. (Tab 7 [RDEIR, § 4.6]; Tab 6 [survey report]; Tab 9 [RDEIR].) The City's responses to DFG contained a reasoned explanation based on scientific information. (See CEQA Guideline ' 15088.) The City was not required to accept DFG's opinions over those of its own expert. (Assn. of Irritated Residents, supra, at 1394-97; Laurel Heights I, supra, 47 Cal.3d at 393-93.)

Substantial evidence supports the EIR's conclusions on the Jackrabbit. The evidence shows the EIR conducted its own analysis of the impacts on the Jackrabbit, and did not rely solely upon the NRMP EIS/EIR for that analysis.

Holly-Leaf Cherry Scrub

The surveys conducted by the Project's expert botanist concluded that the plant community identified was not "holly-leaf cherry woodlands," but "holly-leaf cherry scrub" ("HLCS"), which is different and one not specified in DFG's List of California Terrestrial Natural Communities recognized by the California Natural Diversity Data Base (i.e. without any State or federal protection). (Tab 7, AR 5716-17; Tab

416, 53 AR 37223, 37247 and Tab 6, 4 AR 3363, 3387 [DEIR appendices, 2003 and 2002 rare plant surveys Tab 8, 6:2 AR 6627 [response to DFG comments].)

Based on the evidence, including the rare plant surveys conducted in 2002 and 2003, and supporting evidence (Tab 6, AR 3359-82, 3383-95), the EIR reported the expert botanist's identification of the plant community on-site as HLCS (Tab 7, 5:2 AR 57 16-17). The EIR properly defined the class of plants that were considered to be "special status plants" (Tab 7, 5.2 AR 5722), and did not include HLCS within that class based on the botanist's expert opinion. Based on CEQA and City thresholds, the EIR concluded that the permanent disturbance of 3.6 acres of HLCS, which did not support special-status plant or wildlife species and is not considered to be sensitive by the resource agencies, was not significant (Tab 7. 5.2 AR 5767). As noted before, the EIR concluded that the project-level and cumulative impacts from disturbing an aggregate of 280 acres of habitat, in general, necessarily including HLCS, would be a significant impact, and unavoidable even after mitigation, and, a Statement of Overriding Considerations was adopted as to this impact (Tab 3, AR 145-163).

The City's response to DFG's comments on the HLCS was not "dismissive." The City responded that based on scientific and other information the identified plant community was not "holly-leafed cherry woodland," but HLCS, because the canopy did not amount to a woodland canopy, and that DFG does not include HLCS within its list of special status plant communities. Also because only 3.6 acres of habitat would be permanently impacted by the Project, and HLCS "stand of trees" was not considered a sensitive plant community as identified by the DFG, the

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loss of the 3.6 acres would be less than significant under CEQA. (Tab 8, AR 6627.)

Substantial evidence supports the conclusions that the HLCS on site was not a special status species, and that impacts to it alone would not be significant.

III. Description of the Project and Mitigation Measures

Petitioners contend that the EIR fails as an informational document to adequately describe the project or the mitigation measures, misstates the public and agency concerns raised in comment letters, and fails to meaningfully respond to them.

The EIR adequately describes impact on the Santa Clara River and is not misleading

Petitioners contend the project will damage the river and the EIR and the City's staff reports mislead by "perpetuat[ing] the myth that the project will improve the condition of the river," (OB 16-17) and by the statement in Final EIR that the project "has been designed to preserve the Santa Clara River corridor." (AR 28.)

A review of the record discloses extensive discussion in the EIR and staff reports concerning the encroachment into the Santa Clara River and the impacts to it. Among other things, the EIR discloses that the Project would install buried bank stabilization in the western portion of the site, but not the eastern portion where the river corridor would remain substantially undisturbed up to the eastern boundary where the Newhall Ranch Road Golden Valley Road Bridge would be built. (See Tabs 4, 5, 7, 11, 12.) There is evidence that buried bank stabilization is less harmful to the river and its resources than traditional cement stabilization, yet protects adjacent development adequately (Tab 11, 9 AR 10739-47 [FEIR, App. C. Functional AssessmentC Summary], 10877-90

[id., Hybrid Functional Assessment/Riverpark], 11180-97 [FEIR, App. G, Additional Hydrology and Water Quality Analyses], 11202-19 [id., Addendum No. 1], 11405-17 [id., App. J, Additional Flood and Floodplain Modifications data]). Furthermore, revisions to the Project would lessen intrusion into the SEA and protect mature riparian resources that serve as habitat (id., esp. Tab 11, 9 AR 11419-22, 11516 [FEIR App. K. Project Revisions and Additional Information]; Tab 12, 10 AR 11741-61 [FEIR Final Project Revisions]; Tab 11, 9 AR 11224-35 [FEIR App. 1. 7/20/04 Staff Report]). Other evidence shows that the overall (temporary and permanent) intrusion into the SEA was reduced from the original 37 acres to 32.1 acres, and the permanent intrusion from 24 to 16.9 acres. (Tabs 11, 12.) The Project was also revised to dedicate approximately 318 off-site acres, including the approximately 141-acre "Round Mountain" site containing 37 acres of Santa Clara River SEA, which will in part further offset the Project's impacts on biological resources and the floodplain (Tab 12). The City nevertheless still considered the Project's intrusion into the Santa Clara River SEA to be a significant and unavoidable impact, and included it in the Statement of Overriding Considerations (Tab 7.)

Thus, the City did not "ignore Riverpark's encroachment into the river." It considered at great length the Project's impacts on the river and adjacent areas and required changes in the Project to reduce those impacts.

The EIR adequately describes the project setting and is not misleading

The City found that "the proposed project is appropriate for the subject property," "proposes considerably lower densities than existing nearby developments," and that "[b]y proposing a maximum of 1,089

residential units and approximately 16,000 square feet of commercial space, the project proposes development that would be substantially less dense and less intense than those that both the current and the proposed land use classifications would allow." (1 AR 30.)

Petitioners contend the finding is incorrect, because the City "never actually calculated the number of residential units that can actually be built on the site," and the site's physical characteristics, such as topography, constrain the number of units that can be built on any given parcel.

The findings relating to the project setting are adequate under CEQA and not misleading. Prior to the approval of the General Plan Amendment and Zone Change proposed by the Project, the City's General Plan designations for the site permitted development more dense and intense than the now-approved designations. (See, e.g., Tab 4, 2:1 AR 346-48 [DEIR, § 1.0, Project Description], 830-837 [Id., § 4.7, Land Use]; Tab 4, 18 2:2 AR 947-52.)

There is no requirement the City must calculate exact number of units which actually can be built.

The EIR adequately describes on-site and off-site dedications to the City

Petitioners contend the EIR does not "adequately describe both the on-and off-site [land] dedications, which the City considers a significant benefit, and has identified as one main bases [sic] for over-riding the project's significant adverse impacts," and City staff and the EIR do not discuss in an Agenda Report to the City Council a Planning Commissioner's comments during a debate on whether the Commission would consider the Project's proposed dedication of portions of the South Fork of the Santa Clara River to be a benefit under the

City's Ridgeline Preservation and Hillside Development Ordinance (OB 24-28.)

Preliminarily, these issues were not raised during the administrative process and, consequently, are now barred. (CEQA, § 21177(a); see Park Area Neighbors v. Town of Fairfax (1994) 29 Cal.App.4th 1442, 1447-48.) Moreover, the dedications were not offered as mitigation measures, but as benefits in connection with the City's issuance of a Statement of Overriding Considerations and the Hillside Development Application. (Tab 3. 1 AR 147-1 50.)

In any case, CEQA requires that an EIR analyze a project's adverse environmental impacts, not its benefits. (See, e.g., CEQA, § 21002.1(a).) Dedication of on-site and off-site open space to the City to be preserved in perpetuity does not create adverse environmental impacts. Even so, the EIR does discuss the attributes of these land dedications. The on-site land to be dedicated was discussed extensively in the Draft EIR (see. e.g., Tab 4, AR 367 [DEIR, § 1.0, Project Description]; Tab 4, 2:2 AR 1214-44 [id., § 4.12, Parks and Recreation]; Tab 7, 5:2 AR 5689-5827 [RDEIR, § 4.6, Biological Resources]), as well as in City staff reports (Tab 604,61 AR 42947-42953; Tab 652, 73 AR 51639-51650; Tab 652, 73 AR 51651-51811; Tab 666, 74 AR 51913-51925; Tab 674, 74 AR 52073-52085; Tab 2-3, 1 AR 9-227) and in Planning Commission hearings (Tab 3, 1 AR 147-150). The attributes and benefits of the off-site land dedications are discussed in the Final EIR (see, e.g., Tab 12. 10 AR 11742-61 [FEIR. Final Project Revisions]; Tab 11, 9 AR 11419-22, 11516 [FEIR. App. K, map, land use table, new SEA chart]).

Failure to discuss comments in the agenda report is not fatal here. The Planning Commission debated which Project attributes should be considered as benefits in connection with their decision whether to

recommend approval of the Hillside Development Application, for which Newhall had submitted its Innovative Application Compliance Report. The EIR analyzed the land being dedicated to the extent necessary to inform the City and the public, and based on that information, the Planning Commission ultimately voted on which Project benefits it viewed as supporting the Hillside Development Application, including, without limitation, the on- and off-site land dedications (Tab 9,7:2 AR 8079-81 [12/21/04 HT]; Tab 652, 73 AR 51639-45, esp. 51643 [12/21/04 Staff Report]; Tab 2, 1 AR 15-18 [App. Reso.]). All of this information was before the City Council.

The EIR adequately describes on and off-site dedications and does not fail as an informational document in other respects.

IV. Alternatives Were Considered as Required by CEQA

An EIR's alternatives analysis must include a reasonable range of alternatives to the project that would feasibly obtain the basic objectives of the project and evaluate the comparative merits of the alternatives. (Guidelines, § 15126.6(a).)

Petitioners contend that the City's rejection of Alternative 2, the Santa Clara River Reduced Bank Stabilization Alternative, in the EIR and in its Findings was "disingenuous and pretextual, and therefore contrary to the mandates of CEQA" and not supported by substantial evidence.

Substantial evidence supports the determinations made by the City in rejecting Alternative 2 and finding that, due to the revisions to the Project, that alternative was no longer environmentally superior.

The City rejected Alternative 2 for multiple reasons.

After analyzing Alternative 2's impacts as compared to those of the Project as originally proposed, the EIR concluded that, while this alternative would reduce impacts in certain environmental areas

(including biological resources) and create similar impacts in other areas, it would create greater impacts on population/housing/employment and parks and recreation, and would not meet five of the project objectives. (Tab 4, 2:2 AR 1490-1500.) The EIR noted that the project objectives of (1) providing a substantial number of new housing units adjacent to existing and planned infrastructure, service, transit and transportation corridors and employment areas to accommodate projected growth, and (2) developing a range of housing types accommodating a range of incomes and commercial opportunities, would not be met due to the reduction in residential units (all of which were single-family units). (Tab 4, AR 1499.) The objective of providing adequate flood protection, including bank stabilization where necessary, would not he met because the alternative does not provide for bank stabilization. The objectives of providing sufficient parks to satisfy park dedication requirements and meet regional needs, and of providing a range of active/passive recreational opportunities, would not be met due to the reduction in the size of the flatter, active portion of the proposed 29-acre park. (Id.; see also 1497.)

As noted above, the original Project was substantially revised over the course of the 24 public hearings. The Project as revised and approved: (1) Moved all development back to the resource line established by the Planning Commission, which reduced the Project's intrusion into the SEA and protected mature riparian resources that serve as habitat (Id.. esp. Tab 11, 9 AR 11419-22, 11516 [FEIR App. K, Project Revisions and Additional Information]; Tab 12, 10 AR 11741-61 [FEIR, Final Project Revisions]; Tab 11,9 AR 11224-35 IFEIR App. 1,7/20/04 Staff Report]), (2) Moved the equestrian trail out of the river (Id. esp. Tab 12, 10 AR 11741-61 [FEIR, Final Project Revisions]),

(3) Reduced the Project's overall (temporary and permanent) intrusion into the SEA from the original 37 acres to 32.1 acres, and its permanent intrusion from 24 to 16.9 acres, 7.5 of which are attributable to the construction of Newhall Ranch Road and one of which is attributable to the Santa Clara River Trail (Id. esp. Tab 11, 9 AR 11516 [FEIR App. K, new SEA chart]; Tab 12, 10 AR 11741-61 [FEIR. Final Project Revisions]), (4) Was conditioned on an absolute prohibition of construction of any lots within the new FEMA floodplain boundaries (Tab 11, 9 AR 11406-09 [CLOMR]: Tab 12, 10 AR 11756, 11757-58 [FEIR, Final Project Revisions].) (5) Relocated the Newhall Ranch Road/Golden Valley Road Bridge abutments farther out of the active channel of the river, resulting in reduced impacts to biological resources in those riparian areas (Tab 11, 9 AR 11410-17 [FEIR App. J, Technical Memorandum Hydraulic Design and Analysis]; Tab 12, 10 AR 11758 [FEIR, Final Project Revisions]) and (6) Dedicated approximately 318 off-site acres, including, inter alia, the ARound Mountain" site containing 37 acres of Santa Clara River SEA, which further offset the Project's impacts on biota and the floodplain (Tab 12, 10 AR 11741-58 [FEIR, Final Project Revisions]).

Based on the evidence as regards the revised project, the City Council found that, as compared with the Project as approved, Alternative 2 was no longer environmentally superior because the new Project design reduced development, and thus impacts, in areas not affected by the revisions contemplated by Alternative 2, that although the approved Project would afford the City 94 fewer residential units, it still preserved a greater mix of housing opportunities than did Alternative 2, which reduced the number of single-family lots, and that

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the approved Project would donate substantial off-site acreage. (Tab 3, AR 139-140 [Alternatives Findings]; see also 156 & 3,156-159.)

The findings as to Alternative 2 are supported by substantial evidence and the record shows that the City Council considered and balanced all of the competing factors, and chose to approve the Project with those factors in mind.

V. City Properly Found that the Project is Consistent with General Plan Goals and Policies of Protecting Significant Natural Resources

Government Code section 66473.5 provides that "[n]o local agency shall approve a tentative tract map . . . unless . . . [it] is consistent with the general plan."

It is within the City's province, to balance the competing interests reflected in its General Plan policies, and the City has broad discretion to construe those policies in light of the plan's purposes. (San Franciscans Upholding the Downtown Plan, supra, at 678.) A reviewing court, therefore, may only ascertain whether the lead agency "considered the applicable policies and the extent to which the proposed project conforms with those policies" (id.) by considering whether, as a whole, the "'project is compatible with, and does not frustrate, the general plan's goals and policies" (Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 355.) A project must be in agreement or in harmony with the applicable General Plan, "not in rigid conformity with every detail thereof." (San Franciscans Upholding the Downtown Plan, supra.)

A lead agency's determination that a project is consistent with its general plan "can be reversed only if based on evidence from which no reasonable person could have reached the same conclusion." (A Local and Regional Monitor v. City of Los Angeles (1993)16 Cal.App.4th 630, 648;

see also San Franciscans Upholding the Downtown Plan v. City and County of San Francisco (2002) 102 Cal.App.4th 656, 6771.) In approving the Project, the City considered its General Plan policies and the Project conformance to them.

Petitioners contend that the Project is inconsistent with the City's General Plan goals and policies to protect significant natural resources because its intrusions into the SEA and the floodplain are inconsistent with the General Plan requiring the developer to "enhance and preserve the SEA," and the EIR's conclusion that the project is consistent with Land Use Policy Element 5.3 by "not proposing development within the river" (2 AR 891) is not supported by the evidence in the record.

The EIR analyzes the original Project's consistency with the City's General Plan and concludes that the Project as originally proposed was consistent with Policy 1.1 of Goal I of the City's Open Space and Conservation Element because the Project preserves the Santa Clara River and much of its significant vegetation as open space (Tab 4, 2:2 AR 859-60) as shown by evidence noted above as to other issues. Furthermore, as discussed supra, the Project was later revised, further reducing the Project's overall intrusion into the SEA from 37 to 32.1 acres, and dedicating 37 undeveloped acres of SEA in the Round Mountain property.

The EIR also concludes that the Project as originally proposed was consistent with Policies 3.3 and 3.7 of Goal 3 of the City's Open Space and Conservation Element, because the EIR identifies areas of significant ecological value and natural riparian habitat and mitigates impacts to the extent possible (Tab 4, 2:2 AR 861-62: see also Tab 7. 5:2 AR 5689-5827 [RDEIR, § 4.6, Biological Resources]). Also, as

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discussed supra, the Project as approved further reduces impacts to the SEA and other sensitive resources.

The original Project was also found to be consistent with Policy 5.3 of Goal 5 to require new development to be sensitive to SEAs through creative planning techniques that avoid and minimize disturbance in these areas for these same reasons (Tab 4, 2:2 AR 890-91), a conclusion supported by the same substantial evidence that supports consistency with Goal 1, Policy 1.1 of the Open Space and Conservation Element.

Petitioners' arguments that the Project impermissibly intrudes into the SEA restate their CEQA arguments. The same evidence in the record supports the consistency findings. The Project was revised to limit intrusion into the SEA. The City's decision after circulation of the Draft EIR to protect the riparian resources and habitat by setting the resource line in the western portion of the site and moving the equestrian trail out of the river bed further ensured that the Project as approved was consistent with the General Plan policies. The Project always proposed placing 15 lots within the already disturbed SEA area next to Planning Area A-2. (See, e.g., Tab 7, 5:2 AR 5785.) Also, as revised Section 4.6 explains, even the permanent loss of 24 acres of habitat, now reduced to 16.9, is not expected to detract from the overall integrity and value of the SEA, and the Project will preserve and enhance various amounts of upland habitat in Planning Area B to serve as a buffer between the riparian habitat and development and to mitigate adverse impacts to riparian plant communities within the SEA. (Id.) The benefits of the Project's enhancements to the banks of the Santa Clara River and to its main drainage in the 29-acre park are confirmed by the Final EIR's Hybrid Functional Assessment for Riverpark (Tab 11, 9 AR 10877-90).

Substantial evidence supports the finding of consistency with the City's General Plan.

The Petition for Writ of Mandate is denied.

Counsel for Respondent is ordered to prepare, serve and lodge in Department 85 a proposed Judgment Denying the Petition for Writ of Mandate on or before August 21, 2006.

DATED: August 14, 2006

DZINTRA I. JANAVS

Dzintra I. Janavs
Judge of the Superior Court

FILED
LOS ANGELES SUPERIOR COURT
AUG 03 2007
JOHN A. CLARKE, CLERK
BY S. BARRETT, DEPUTY

SUPERIOR COURT OF CALIFORNIA

COUNTY OF LOS ANGELES

CALIFORNIA WATER IMPACT NETWORK and FRIENDS OF THE SANTA CLARA RIVER, Petitioners/Plaintiffs, vs. CASTAIC LAKE WATER AGENCY; NEWHALL COUNTY WATER DISTRICT; CLWA SANTA CLARITA WATER DIVISION; VALENCIA WATER COMPANY; and DOES 1-20, inclusive, Respondents/Defendants, Real Parties in Interest.	Case No. BS 103 295 STATEMENT OF DECISION [Transferred from Ventura County Superior Court, Case No. CIV 239 359] Assigned for all purposes to: Honorable Dzintra I. Janavs Department 85 Complaint Filed: February 27, 2006

Having taken the matter under submission on June 25, 2007, having considered all the evidence admitted and the parties' oral and written arguments, the Court rules as follows:

Petitioners, California Water Impact Network ("CWIN") and Friends of the Santa Clara River ("Friends") (collectively referred to as "Petitioners") seeks a peremptory writ of mandate, declaratory judgment, and preliminary and permanent injunctions setting aside, enjoining, and restraining the approval by Respondents, Castaic Lake Water Agency ("CLWA"), Newhall County Water District ("NCWD"), and Valencia Water

Company ("VWC") collectively referred to as "Respondents") of their 2005 Urban Water Management Plan ("2005 UWMP" or "Plan").[1]

The 2005 UWMP is a detailed water supply management plan, which describes the water demand, water supply, water conservation, water recycling, and water reliability planning for the CLWA service area. (AR[2] 1:1-425.) The 2005 UWMP was prepared pursuant to the Urban Water Management Planning Act ("UWMP Act" or "Act") (Wat. Code, §§ 10610-10656), which requires every urban water supplier to prepare and adopt an urban water management plan. (Wat. Code, § 10620.) As encouraged by the UWMP Act, Respondents jointly prepared the 2005 UWMP as a cooperative regional plan for the CLWA service area. (Wat. Code, § 10620, subd. (d); *see also* AR 1:13.) In addition, numerous water resource specialists with expertise in water management planning were retained to assist Respondents in preparing the Plan. (AR 4:2479.) As required by the Act, the 2005 UWMP was approved and adopted separately by each Respondent. (AR 2:578-591.)

The 2005 UWMP covers the CLWA service area, which generally encompasses the Santa Clarita Valley. (AR 1:16-19.) Total water supply available to meet demands in the Valley is comprised of a combination of imported water, local groundwater, and local recycled water. (AR 1:8-9.) The groundwater source is supplemented with imported supplies. (AR 1:8-9, 37-38, and 42-47.) Imported water includes State Water Project

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[1]Petitioners also identify CLWA Santa Clarita Water Division as a Respondent. CLWA Santa Clarita Water Division, however, is the retail division of CLWA and is not a separate public entity.

[2]The Administrative Record will be cited as AR [Volume Number]:[Start Bates Page]-[End Bates Page].

("SWP") Table A water[3] and stored water. (AR 1:37.) Local groundwater is extracted from two different aquifer systems that comprise the local groundwater Basin, the Alluvium Aquifer and the Saugus Formation.[4] (AR 1:42.) The Alluvium Aquifer generally underlies the Santa Clara River and its several tributaries; the Saugus Formation underlies essentially the entire Upper Santa Clara River Area. (*Ibid.*)

Petitioners CWIN and FSCR are non-profit public benefit corporations formed under the laws of the State of California. Petitioners dispute the sufficiency of the analysis contained in the 2005 UWMP, as well as the various conclusions reached in the Plan. Specifically, Petitioners assert that the Plan "(1) fails to accurately estimate future demand; (2) overstates supply; and (3) fails to address alternatives to bridge the gap between supply and demand." (Petitioners' Opening Brief ["POB"] 1:6-7.) Petitioners contend that these alleged failings in the Plan constitute a violation of the Act, as well as a violation of the Public Trust Doctrine. (POB 1:6-7.)

Respondents contend that they exceeded the procedural requirements of the Act in adopting their Plan. Beginning in April 2005, Respondents held various public community workshops in the CLWA service area. (AR 1:128, 5:2953-3001 and 3279-3305.) On July 27, 2005, a preliminary draft of the 2005 UWMP was released to the public to solicit public input. (AR 5:3011-3278.) The draft 2005 UWMP was released on August 31, 2005, at a public community workshop, and was subsequently posted on CLWA's

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[3]The SWP Table A Amount is an annual contractual right to SWP water, named for the "Table A" in each SWP contractor's Water Supply Contract.

[4]This groundwater Basin is identified in the DWR Bulletin 118, 2003 Update, as the Santa Clara River Valley Groundwater Basin, East Subbasin. (AR 1:42.)

website. (AR 2:578, 4:2535-2590 and 2608-2952.) Copies were also delivered to the three area public libraries, to the City of Santa Clarita, and to the Counties of Los Angeles and Ventura. (AR 2:578.) This was followed by a six-week written public comment period. (AR 1:135.) On September 28, 2005, and October 26, 2005, joint public hearings were held, during which time Respondent's respective Boards heard staff and consultants describe the contents of the draft Plan, additional public comments were received, and staff and consultants responded to public comments. (AR 2:1150-1257 and 4:2299-2476.)

On November 3, 2005, Respondents circulated the Revised Final Draft 2005 UWMP. (AR 2:579 and 772-1149.) On November 9, 2005, CLWA and NCWD held a joint meeting at which time each Board reviewed and adopted the Revised Final Draft 2005 UWMP. (AR 2:578-586 and 611-696.) Respondent VWC adopted the Revised Final Draft 2005 UWMP on December 14, 2005. (AR 2:587-591.)

Petitioners filed a verified petition for writ of mandate and complaint for declaratory and injunctive relief in the Ventura county Superior Court on February 27, 2006. The action was ordered transferred to the Los Angeles County Superior Court on May 18, 2006.

To establish a violation of the UWMP Act, Petitioners must establish a prejudicial abuse of discretion by showing that Respondents either failed to proceed in the manner required by law in their preparation and adoption of the 2005 UWMP or Respondents' decisions to adopt the 2005 UWMP were not supported by substantial evidence. (Wat. Code, § 10651.) At issue here is a challenge to a quasi-legislative action, which is governed by traditional mandamus. This requires "scrutiny of the nature of the alleged defect" depending upon whether Petitioners' claim is predominantly "one of improper procedure or a

dispute over the facts." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* ("*Vineyard*") (2007) 40 Cal.4th 412, 435.) As explained by the California Supreme Court in *Vineyard*, "while we determine *de novo* whether the agency has employed the correct procedures, . . . we accord greater deference to the agency's substantive factual conclusions," for a court's task "is not to weigh conflicting evidence and determine who has the better argument." (*Ibid.*)

"Substantial evidence" has been defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (*Laurel Heights Improvement Assn. Of San Francisco, Inc. v. The Regents of the University of California* (1988) 47 Cal.3d 376, 393, citing Cal. Code Regs., tit. 14, § 15384, subd. (a).) This is the same "highly deferential substantial evidence standard of review" as prescribed for appellate review of trial court decisions. (*Western States Petroleum Assn. v. Super. Ct.* (1995) 9 Cal.4th 559, 572.) This review standard was recognized by the Court of Appeal in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (2004) 123 Cal.App.4th 1, 9 ("[a]s it is not our function to reweigh the evidence, but to determine if there is substantial evidence to support the findings of the UWMP, the plaintiffs must fail if there is such substantial evidence"). Accordingly, this Court will uphold Respondent's decision to adopt the 2005 UWMP if substantial evidence supports that decision. In addition, this "deferential standard" requires the court to presume the correctness of the agency decision, as all reasonable doubts must be resolved in favor of it. (*Ryan v. Cal. Interscholastic Federation -- San Diego Section* (2001) 94 Cal.App.4th

1048, 1077-1078.) There is an exception to this deferential standard, when a court reviews the record and statutes to determine what is "required by law," and whether the agency has employed the correct procedures, which is subject to *de novo* review. (*Vineyard, supra,* 40 Cal.4th at p. 435; *People ex rel. Lockyer v. Shamrock Foods Co.* (2000) 24 Cal.4th 415, 432.)

The proper standard of review to be applied to Petitioners' public trust claim is the "abuse of discretion" standard. (*Baldwin v. City of Los Angeles* (1999) 70 Cal.App.4th 819, 836 [applying the abuse of discretion standard in mandamus action specifically to public trust issues].) In such cases, the Court should "determine only whether the action taken was arbitrary, capricious, or entirely lacking evidentiary support, or whether it failed to conform to procedures required by law." (*Ibid.*) Further, "[t]he inquiry into arbitrariness or capriciousness is like substantial evidence review in that both require reasonable basis for the decision."

I. The Plan's Water Use Projections and Estimate of Water Conservation Savings Meet The Requirements of the UWMP Act and Are Supported by Substantial Evidence

Petitioners argue that the 2005 UWMP's "conservation measures are unsubstantiated," and that because Respondents have relied upon 10 percent water savings to reach an "*ultimate conclusion*" that "adequate water exists for all future needs," the 2005 UWMP does not adequately quantify current water use and projected water use, as required by the UWMP Act. (POB 9, and Petitioners' Reply Brief ("PRB") 8:24-28 and 9:20-22.) Petitioner's arguments on this issue are without merit.

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A. The Plan Provides Adequate Support and Explanation For the 10 Percent Conservation Savings Estimate

The 10 percent conservation savings provided in the 2005 Plan is an estimate. Petitioners claim that the UWMP Act does not permit such an estimate of conservation savings. (PRB 7:23-24.) That is not so, as the Act specifically permits such an estimate. (Wat. Code, § 10631, subd. (f)(4) [requires a plan to provide a "[a]n *estimate*, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand"], emphasis added.)

Table 2-2 meets this requirement in that it provides such an estimate of existing conservation savings and demonstrates the effect of the savings on the suppliers' ability to further reduce demand by comparing it to the projected water demands. (AR 1:26.)

In addition, the UWMP Act does not require description and evaluation of water demand management measures for members of the California Urban Water Conservation Council. (Wat. Code, § 10631, subd. (j).) Instead, the Act simply requires that Council members include in their plans copies of the annual reports they submit to the Council. (*Ibid.*) As Respondents are each members of the Council, and as copies of their annual submitted reports are attached to the Plan, they are in compliance with subdivisions (f) and (g) of Section 10631 of the Act. (Wat. Code, § 10631, subd. (j).) (*See also* AR 1:235-384.)[5]

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[5]Moreover, because Respondents are members of the Conservation Council, the 2005 UWMP need not comply with that provision of the UWMP Act because section 10631, subdivision (h), of the UWMP Act also exempts members of the Conservation Council from the provisions of Section 10631, subdivision (f). (Wat. Code, § 10631, subd. (j).)

In this case, the estimate of conservation savings is supported by empirical data, based on the 1987-1992 drought and the results of *voluntary* conservation efforts. (AR 1:34 [explaining that past extreme conservation measures resulted in a 20 percent reduction in water demand (despite an expected 10 percent *increase* in water needs due to dry weather, overall water requirements actually *decreased* by more than 10 percent as a result of extraordinary conservation measures)]).

B. The Plan Provides Substantial Evidence to Support Its Conclusion That There Is Sufficient Water To Meet Future Demands

Petitioners claim that the 10 percent reduction due to conservation measures skews the Plan's ultimate conclusion that Respondents have identified enough water to meet future demands and point to a deficiency in future water supply identified in Tables 6-3 and 6-4 without the 10 percent reduction. (PRB 8:18-12:4.) Tables 6-2 through 6-4 summarize the supplies and demand for projected average/normal years, single-dry years, and multiple-dry years, respectively. (AR 1:95-97.) In average/normal years, the 10 percent reduction due to conservation measures is not relied upon to meet demands. (AR 1:95.) Only in dry years is the conservation amount necessary to meet demands (AR 1:96-97); however, the conservation estimates cannot be read without an understanding of the water shortage contingency plan outlined in Section 8.6 of the 2005 UWMP, which provides for *mandatory* conservation measures that could be reactivated, pursuant to local ordinances during dry years (AR 1:115-116); and Section 8.7, which provides for mandatory rationing or consumptive reduction measures (AR 1:116-117). Such mandatory conservation measures would be implemented and would ensure a conservation savings of 10 percent. Thus, in a dry year, with the implementation of such mandatory conservation measures, the 10 percent

conservation estimate is more certain than in an average/normal year, in which only voluntary conservation measures may be relied upon.

The 2005 UWMP has identified adequate supplies to meet future demands.

II. The Plan's Identification and Quantification of Surface Water Supplies Meets The Requirements Of The UWMP Act and Is Supported By Substantial Evidence

The UWMP Act requires that an urban water management plan identify and quantify existing and planned sources of water available to the supplier in five-year increments for the entire planning period, which is defined as the next 20 years. (Wat. Code, § 10631, subd. (b).) The Act further requires that a plan describe the reliability and vulnerability of the water supply. (*Id.*) at subd. (c)(1).) For any water source identified that may not be available at a consistent level of use, "given specific legal, environmental, water quality, or climatic factors," the Act requires that a plan include a description of any proposed alternative sources or water demand management measures "to the extent practicable." (*Id.* at subd. (c)(2).)

Chapter 3 of the Plan identifies and quantifies Respondents' current and planned sources of water. (AR 1:35-61.) Current supplies include CLWA's SWP Table A supplies, Flexible Storage Accounts in Castaic Lake, Semitropic Water Bank, and local groundwater. (AR 1:36, Table 3-1.) In addition, the Plan identifies near term future sources of water supply, including Rosedale-Rio Bravo Water Storage District Water Banking and Buena Vista Water Storage District/Rosedale-Rio Bravo Water Storage District Water Storage and Recovery Program. (AR 1:36, Table 3-1; see also AR 1:58-59.)

Chapter 3 in the Plan also contains an explanation of the reasons Respondents must rely on DWR in order to accurately assess the impacts

of varying conditions on SWP supply reliability -- an assessment that is required by the Act. (AR 1:39 & 90.) (See also Wat. Code, § 10620, subd. (d)(2); AR 6:3543.) As regards these supplies, DWR publishes every two years a reliability report that contains data concerning the reliability of current and projected SWP deliveries in conformance with the Act. (AR 1:90.) This reliability data is generated from CALSIM II, DWR's computer simulation model of SWP and Central Valley Project ("CVP") operations. (AR 3:1284, 4:2364-2367, 16:6988 & 6997-7002; *see also* Respondents' Request for Judicial Notice, Exhibit 1, pp. 9-11.)

In preparing its Plan, Respondents relied upon DWR's "Excerpts from the Working Draft of 2005 State Water Project Delivery Reliability" ("Draft 2005 Report"), as directed by DWR. The Draft 2005 Report contained DWR's most recent and authoritative projections of deliveries of the SWP. According to the Draft 2005 Report, the existing SWP facilities operated under current regulatory and operational constraints and, with all contractors requesting delivery of their full Table A Amounts in most years, could deliver 77 percent of total Table A Amounts on a long-term average basis. (AR 1:39 and 12:5398-5418.)

Chapter 6 of the Plan addresses in detail the reliability of Respondents' current and future water supply, including CLWA's SWP Table A supplies. (AR 1:91 and 93-97.) In describing the reliability of the water supply, the UWMP Act requires that a plan provide data for specific hydrologic scenarios: (1) an average year, (2) a single-dry year, and (3) multiple-dry years. (Wat. Code, § 10631, subd. (c)(1).) The discussion in Chapter 6 of the 2005 UWMP addresses each of these hydrologic scenarios and, using DWR's 2005 Draft Report, concludes that: (1) in an average water year, SWP delivery reliability will be 71 percent in 2010, and 77 percent in 2025/2030; (2) in a single-dry year,

SWP delivery reliability will be four percent in 2010, and five percent in 2010 and (3) in multiple-dry years, SWP delivery reliability will be 32 percent in 2010, and 33 percent in 2025/2030. (AR 1:40 and 95-97.)

Chapter 6 of the Plan also contains a comparison of current and future supply and demand for Respondents' service areas under the same three hydrologic scenarios. (AR 1:95-97.) That discussion includes the identification of various potential alternative supplemental and replacement supply sources and demand management measures for those supply sources that may vary between the three hydrologic scenarios. (AR 1:90-93.)

Petitioners contend that the 2005 UWMP overstates the quantity of surface water supplies and their reliability, contending that the Plan: (1) relies upon water supply sources that are the subject of pending litigation; (2) inflates SWP delivery numbers; (3) relies upon a flawed SWP delivery model; and (4) fails to consider other relevant factors that will impact the future reliability of SWP Table A deliveries. Contrary to these contentions, substantial evidence supports each of the Plan's conclusions regarding water supply and reliability.

A. The Plan Adequately Considers Pending Litigation

1. Kern-Castaic Transfer

CLWA's current SWP Table A Amount of 95,200 acre feet per year ("afy") includes 41,000 afy that is a result of the Kern-Castaic Transfer. (*See, Cal. Oak Foundation v. City of Santa Clarita* ("*California Oak*") (2005) 133 Cal.App.4th 1219, 1229-1230.) This transfer was completed in 1999, and is memorialized in a purchase agreement and in amendments to CLWA's and Kern County Water Agency's Water Supply Contracts with DWR. (*See, Friends of Santa Clara River v. Castaic Lake Water Agency* ("*Friends 1*") (2002) 95 Cal.App.4th 1373,

1379-1380.) The Environmental Impact Report ("EIR") for the transfer was challenged in 1999, in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (Los Angeles County Superior Court Case No. BS056954) ("Friends Action"). (*Id.* at 1381.) Although CLWA was ultimately ordered to revise its EIR, no court has ever enjoined implementation of the Kern-Castaic Transfer Project, nor suggested that it should be unwound. (*California Oak, supra,* 133 Cal.App.4th at pp. 1228-1229.)

Under the jurisdiction of the Los Angeles County Superior Court in the Friends Action, CLWA prepared and circulated a revised EIR for the transfer, adopted the revised EIR, and lodged the revised EIR with the Los Angeles County Superior Court as part of its Return to the Peremptory writ of mandate in the Friends Action. Thereafter, the petition was dismissed with prejudice. In January 2005, two new challenges to CLWA's environmental review for the Kern-Castaic Transfer were filed in the Ventura County Superior Court by Planning and Conservation League ("PCL") and by California Water Impact Network ("CWIN"). Those cases were consolidated, transferred to the Los Angeles County Superior Court (Case No. BS098724), and were pending in Department 13 at the time Respondents adopted the 2005 Plan. (AR 1:41.)

All of the above is described in detail in the 2005 UWMP. (AR 1:41-42 and 91.)[6] The 2005 UWMP also identifies in detail the

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[6]The Los Angeles County Superior Court has since ruled that the dismissal with prejudice of Petitioner Friends' earlier CEQA petition challenging the original Kern-Castaic EIR is a retraxit and bars Friends from raising issues concerning the validity of the Kern-Castaic Transfer or the sufficiency of its environmental documents. (*See,* Respondents' RJN, Exhibit "4.") Therefore, Petitioner Friends is barred by the doctrines of retraxit and res judicata from challenging the validity of the Kern-Castaic Transfer (which includes asserting that the Kern-Castaic Transfer could be unwound) in this action. (*Le Parc Community Assn. v. Workers' Comp. Appeals Bd.* (2003) 110 Cal.App.4th 1161, 1169,

substantial evidence that supports its determination that the Kern-Castaic Transfer remains a valid and reliable water source. (AR 1:41-42.) This evidence includes the following: (1) the Kern-Castaic Transfer was completed in 1999, and DWR has allocated and annually delivered the water in accordance with the completed transfer; (2) the Court of Appeal held that the only defect in the 1999 EIR was that it tiered from the Monterey Agreement EIR, which was later decertified. (*Friends 1, supra*, 95 Cal.App.4th at p. 1387); (3) the defect has been remedied by the preparation of a revised EIR that did not tier from the Monterey Agreement EIR; (4) the Monterey Amendments settlement agreement expressly authorized the operation of the SWP in accordance with the Monterey Amendments, which facilitated the Kern-Castaic Transfer; (5) the Court of Appeal refused to enjoin the Kern-Castaic Transfer, and instead rquired preparation of a revised EIR; and (6) the Kern-Castaic Transfer contracts remain in full force and effect, and no court has ever enjoined the use of this portion of CLWA's SWP Table A Amount.

Petitioners cite the *California Oak* decision, in which the Court of Appeal set aside the EIR for its failure to explain the reasons it was appropriate to rely on the Kern-Castaic Transfer despite pending litigation. (*California Oak, supra*, 133 Cal.App.4th at p. 1240.) Here, however, the 2005 UWMP contains a detailed explanation of such reasons.

Substantial evidence supports including the Kern-Castaic Transfer amount as part of CLWA's total SWP table A Amount.

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quoting *Torrey Pines Bank v. Superior Court* (1989) 216 Cal.App.3d 813, 820 and *Rice v. Crow* (2000) 81 Cal.App.4th 725, 733-734.) Additionally, the Court in *CWIN v. CLWA* (LASC Case No. BS098724) recently entered Judgment ruling that the Kern-Castaic Transfer and its underlying contract documents are valid and not subject to being unwound or set aside.

2. Semitropic Groundwater Bank

In 2002, CLWA stored 24,000 acre-feet ("af") of its Table A Amount in an account in Semitropic's Banking Program ("2002 Groundwater Banking Project").[7] (AR 12:5419-5422, 5449.) Prior to opening its account, CLWA adopted a negative declaration under CEQA. (*Ibid.*) CWIN and Friends filed a CEQA action in the Ventura County Superior Court challenging CLWA's adoption of the negative declaration for the 2002 Groundwater Banking Project (*Cal. Water Network v. Castaic Lake Water Agency* [(Ventura County Superior Court Case No. CIV 215327]) ("Network Action"). (AR 1:57.) (Respondents' RJN, Exhibit 5.) Shortly thereafter, Petitioners filed essentially the identical action in the Sacramento County Superior Court (*Friends of the Santa Clara River v. State of California Department of Water Resources* [Sacramento County Superior Court Case No. 03CS00258]) ("Sacramento Action"). (*See*, Petitioners' Joshua Harris Declaration, Exhibit 2.) The *Sacramento Action* challenged the same negative declaration, involved the same parties, and asserted the same violations as the *Network Action*. (*Ibid.*) As the *Network Action* was filed first, the *Sacramento Action* was stayed until judgment was entered in the *Network Action*. (*See*, Petitioners' Joshua Harris Declaration, Exhibit 3.)

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[7]In 2004, CLWA stored 32,522 af of its 2003 Table A Amount in another account in Semitropic's program ("2003 Groundwater Banking Project"). (AR 12:5449-5484.) Only CLWA's 2002 Groundwater Banking Project was legally challenged. (AR 1:57.) Therefore, the 2003 Groundwater Banking Project is conclusively presumed to comply with CEQA. (Pub. Resources Code, § 21167.2.)

On July 14, 2004, the trial court in the *Network Action* entered judgment in favor of CLWA. (AR 1:57; *see also*, Respondents' RJN, Exhibit 6.) Petitioners appealed, and that appeal was pending at the time the 2005 UWMP was adopted. (AR 1:57.)

Petitioners contend that the Plan erroneously relies upon CLWA's 24,000 af of water banked at the Semitropic Storage District since that banking project was still under legal challenge when the 2005 UWMP was adopted. However, as the CLWA was the prevailing party in the trial court at the time of the adoption of the Plan[8], substantial evidence existed to support the Plan's reliance upon the banked water supplies. (*See, e.g.*, Publ. Resources Code, § 21167.3, subd. (b); Cal. Code Reg., tit. 14, § 15231; *see also, Barthelemy v. Chino Basin Mun. Water Dist.* (1995) 38 Cal.App.4th 1609, 1617 [agency actions are presumed to comply with applicable law, until proof is presented to the contrary].) Furthermore, the Plan's reliance on this water supply is limited. The 2002 Groundwater Banking Project has a term of ten years for the water to be withdrawn and delivered to CLWA. It is limited in the Plan for use in a dry year, and only for short-term reliability purposes (*i.e.*, prior to 2013).

Petitioners also claim that there is "contamination in the Semitropic aquifer," and that "water pumped into Semitropic may not meet DWR standards for water wheeling back into the California Aqueduct." (POB 15:5-8.) The record, however, establishes that water transported in SWP facilities would be required to meet DWR pump-in requirements for water quality and would meet all applicable drinking water standards and water quality criteria. (AR 15:6938.) Furthermore, this claim has

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[8]The Second District Court of Appeal subsequently affirmed the trial court's judgment. (*See*, Respondents' RJN, Exhibit 7.)

already been rejected both by the trial court and by the Court of Appeal in the Network Action. Contamination of the Semitropic Basin creates no water quality problems for CLWA or its retailers since, under the terms of the 2002 Groundwater Banking Project, CLWA may recover its water stored at Semitropic by either: (1) having Semitropic pump the water from the groundwater bank and transporting it to CLWA via the California Aqueduct, or (2) requesting an "in lieu exchange" (*i.e.*, that an equivalent amount of Semitropic's SWP water for a particular year be delivered directly to CLWA). (AR 12:5438 and 5452.) (*See also*, Respondents' RJN, Exhibit 6.)

B. The Plan Does Not Rely Upon Inflated SWP Delivery Numbers

Petitioners contend that Respondents improperly relied on DWR's projections for the reliability of the SWP.

DWR is responsible for the delivery of water to 29 state contractors throughout California; which water is then provided to hundreds of intermediate suppliers, the overwhelming proportion of whom have to prepare urban water management plans. (*See*, Wat. Code, §§ 10620 [requiring urban water management plans], and 10617 [defining "urban water supplier" as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water."]) The notion underlying Petitioners' argument -- that each of these hundreds of urban water suppliers should conduct their own SWP reliability analysis -- has no support in the UWMP Act and, in fact, would render the purposes of the Act unachievable.

Requiring urban water suppliers to conduct their own analysis of SWP reliability would also be contrary to the court-approved settlement

in connection with *PCL*. That settlement requires DWR to prepare SWP delivery reliability reports every two years commencing 2003 and contemplates each SWP contractor's reliance on the data generated in them. (AR 6:3543 and 16:7248.)

Petitioners' claim that SWP deliveries to contractors will never exceed 50 percent is based mainly on dicta from *PCL*. (POB 17:6-20.) Dicta cannot serve as factual support for such argument. (*Fireman's Fund Ins. Co. v. Maryland Casualty Co.* (1998) 65 Cal.App.4th 1279, 1301 ["In every case, it is necessary to read the language of an opinion in the light of its facts and the issues raised, in order to determine which statements of law were necessary to the decision, and therefore binding precedent, and which were general observations unnecessary to the decision. The latter are dicta, with no force as precedent."].)

PCL involved a challenge to an EIR that was certified in 1996, long before DWR had any type of computer modeling tool at the level of sophistication of CALSIM II. The dicta from *PCL* quoted by Petitioners describes the historical "gap" between SWP deliveries and SWP Table A entitlements prior to implementation of the Monterey Amendment to the SWP contracts in 1996. (*PCL, supra,* 83 Cal.App.4th at pp. 901-903.) The Monterey Amendment was intended to narrow that gap. (*Ibid.*) That amendment has been in effect since 1996, and *PCL* does not and could not have analyzed the impacts (positive or negative) of the Monterey Amendment upon the reliability of SWP deliveries.

PCL, however, does defer to the expertise of DWR with respect to SWP operations, which includes projecting SWP capacity and delivery reliability. (*PCL, supra,* 83 Cal.App.4th at pp. 906-907), and the Court of Appeal in *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715, citing *PCL*, held that

data from DWR concerning SWP reliability is the standard for planning. (*Id.* at p. 22.)

Furthermore, in asserting that the SWP facilities are incapable of ever delivering supplies to contractors in excess of 50 percent of Table A Amounts, Petitioners demonstrate their misunderstanding of the difference between the actual current capacity of SWP storage facilities and the actual current capacity of SWP conveyance facilities. As explained in the 2005 UWMP, while there are limitations on SWP storage capacity, similar limitations do not exist for its conveyance facilities (AR 1:37-38.)

Petitioners also claim internal inconsistencies in the 2005 UWMP with respect to SWP deliveries and SWP reliability. They argue that Table 3-2 in Chapter 3 of the Plan establishes that "[i]n 2004, CLWA received approximately 50 percent of its Table A allocation, or 47,205 af . . . . In all years prior, it received even less." (POB 16:21-23.) Petitioners contrast what they characterize as "unpredictable allotment schedule and low historical delivery numbers" with the Plan's conclusions regarding reliability of SWP deliveries. (*Id.* at 16:25.)

Petitioners are incorrect. Table 3-2 does not identify the historical total SWP deliveries *to* CLWA, but the historical total SWP deliveries delivered *by* CLWA to the retail water agencies in the Santa Clarita Valley. (AR 1:38.) As Respondents explain, this is not a distinction without a difference. As an example, Table 3-2 indicates that in 2002, CLWA delivered to its retailers 41,768 af of SWP water. 41,768 af, however, is not the total amount of SWP water deliveries received by CLWA in 2002. In addition to the amount reflected Table 3-2 as delivered in 2002, CLWA also stored an additional 24,000 af of its SWP deliveries at Semitropic's Groundwater Bank as part of its 2002

Groundwater Banking Project. (AR 1:57 and 12:5419-5422.) Thus, in 2002, CLWA's SWP deliveries exceeded 65,000 af.

Similarly, in addition to the 44,419 af of SWP water that CLWA delivered to its retailers in 2003, CLWA also stored an additional 32,522 af of its SWP deliveries at Semitropic Groundwater Bank as part of its 2003 Groundwater Banking Project. (AR 1:57 and 12:5449-5454.) Thus, in 2003, CLWA's SWP deliveries were approximately 76,000 af.

Further, while CLWA delivered only 47,205 af of SWP supplies to its retailers in 2004, this has no relationship to the actual amount of SWP supplies delivered to CLWA in 2004, which was approximately 65 percent of its total Table A Amount, or 61,880 af. (AR 11:4642-4643.) (*See also*, Respondents' RJN, Exhibit 2.)

It should also be noted that when reviewing Table 3-2, although the Kern-Castaic Transfer contract documents were executed in 1999, CLWA did not see an increase in its SWP Table A allocation as a result of the Transfer until 2001. Prior to 2000, CLWA's SWP Table A Amount was 53,700 af. Thus, in 2000, CLWA's total SWP deliveries were 60 percent of its total SWP Table A Amount.

Nor is the declaration executed by CLWA's General Manager Dan Masnada, on September 12, 2002, in other litigation inconsistent with the DWR's 2005 Draft Report. (POB 18:14-18.) In that declaration, Mr. Masnada questions the ability of the SWP to maintain high delivery percentages on a yearly basis "in the near term given current hydrologic conditions and existing SWP facilities in operation." (AR 1:760.) Masnada's statement is not inconsistent with the 2005 Draft Report. First, said statements were made concerning the reliability percentage that would be required immediately in the absence of the Kern-Castaic Transfer. (*Ibid.*) Second, as reflected in Table 3-4 of the Plan,

average/normal year near-term SWP delivery reliability for year 2010 is 71 percent, and will increase by the year 2025, to 77 percent. (AR 1:40.) The Plan, however, projects single-dry year reliability to be five percent and multiple-dry year reliability to be 33 percent in year 2025. (AR 1:40 and 96-97.) Thus, the Plan is not projecting 77 percent reliability for SWP deliveries every year, even in year 2025. (*Ibid.*)

Substantial evidence supports Respondents' reliance upon DWR's projections for the reliability of SWP delivery numbers, and such reliance is permitted under the UWMP Act.

C. The Plan Does Not Rely Upon A Flawed SWP Delivery Model

Petitioners argue that DWR's SWP analysis is unreliable because it is based upon the "flawed" "CALSIM II" model. (POB 19:20-21.) Petitioners contend that these "flaws" are identified in the Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operation in Central California. (POB 19:22-26, citing AR 3:1438.)

The Strategic Review, however, acknowledges that CALSIM II was a "substantial improvement" over the previous models that DWR had used for that work, was comparable to other state of the art models for projecting deliveries, and was "admirable" for its "openness and availability." (AR 3:1439.) While the reviewers made suggestions for future improvement of the model and noted that it was of limited use in predicting deliveries in any one year, to date there is no other model that does a better job of predicting deliveries -- nor have Petitioners identified one.

The case that Petitioners cite as undercutting the validity of the CALSIM II model -- *Planning and Conservation League v. U.S. Bureau of Reclamation*, No. C05-3527 (N.D. Cal. Feb. 14, 2006) (hereafter, the "Intertie Case"), Order on Preliminary Injunction -- recognizes that the

model is the best one presently available for projecting water supplies: "CALSIM II is not a perfect model; no model is. But its use alone [does not make out a violation of the National Environmental Policy Act ("NEPA")]." (See Respondents' Request for Judicial Notice, filed October 2, 2006, Exhs. "2" & "3.") While Petitioners cite the Intertie Case as supporting a conclusion that CALSIM II is flawed, the Court's Order simply supports a conclusion that the Bureau of Reclamation's use of CALSIM II for purpose of conducting abbreviated environmental review under NEPA was not warranted. (*Ibid.*) This case does not present that question, and the Intertie Case preliminary injunction ruling is not relevant.

Respondents made use of the best information available to them regarding SWP deliveries. In doing so, they complied with the UWMP Act.

D. The Plan Adequately Considers All Other Relevant Factors That Will Impact The Future Reliability Of SWP Table A Deliveries

The UWMP Act requires that urban water suppliers identify "[a]ctions to be undertaken . . . to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster." (Wat. Code, § 10632, subd. (c).) Respondents described in the 2005 UWMP the effects of a levee failure impacting its SWP water supply for a six-month period. (AR 1:106-121.) Citing a newspaper article's misquote of the statements of DWR Director Lester Snow published after the Draft 2005 UWMP had been published and circulated, Petitioners argue that the six-month anticipated outage is not long enough for contingency planning purposes, and that Respondents should have anticipated a five-year interruption in supply. (POB 21:17-18, citing AR 2:731.)

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Respondents point out, the "five year" statement was, in fact, a misreport of Director Snow's testimony, and Director Snow stated that a levee failure could take at least 15 months to repair. (AR 1:768.) In any case, though, Director Snow's testimony came after the final draft of the 2005 UWMP was issued and the voters subsequently approved bonds to provide for levee strengthening that would address this issue, Respondents provided analysis in support of the 2005 UWMP showing that an interruption of up to *three years* could be accommodated. (*See* AR 1:630-634, 658-659, and 768.) The UWMP Act does not require suppliers to include this analysis in their plan; it simply requires that the analysis be conducted, which has been done here. (Wat. Code, § 10632, subd. (c).)

Petitioners next argue that the Bay-Delta Plan, as enforced in the *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674, 777, will require reduced SWP deliveries. The ruling post-dates Respondents' approval of the Plan. Furthermore, Petitioners have not made an adequate record in this Court on the point, nor have they demonstrated that they exhausted their administrative remedies.

Petitioners also contend that the Plan "fails to adequately address the known, foreseeable declines in SWP deliveries due to global warming, despite undisputed evidence documenting accelerating declines in summer Sierra Nevada snow pack and reservoir storage." (POB 22:8-12.)

Projections related to climate change and its potential impact(s) on future SWP deliveries are among the issues DWR will need to address in the future. The record establishes that no conclusion had been reached by DWR at the time of adoption of the 2005 Plan. The material cited by those commenting on the Plan makes clear their belief that Respondents must follow DWR's lead on this issue. (See AR 6:3657,

1:657.) It was appropriate for Respondents to rely on DWR's most recent water supply projections.

III. The 2005 Plan Adequately Assesses Water Quality Issues and Any Impacts on Water Availability

Petitioners contend that the 2005 UWMP fails to comport with the Act by failing to address various water quality issues and by failing to provide alternative or supplemental water sources as a result of those claimed limitations. (POB 25:21 - 31:4.) Petitioners assert that the 2005 UWMP: (1) overstates the quantity and quality of groundwater that can be delivered from the Alluvial Aquifer; (2) inadequately discloses the spread of perchlorate in the groundwater basin and does not identify "alternative water sources"; and (3) inadequately addresses the likelihood that the Newhall Ranch planned community may not be able to convert to potable use the groundwater from the Alluvial Aquifer historically used for its agricultural operations, due to allegedly "excessive" levels of total dissolved solids ("TDS"). (*Ibid.*)

Substantial evidence supports Respondents' contrary conclusions and findings on each issue.

A. Groundwater Overdraft and Excessive Nitrate and Chloride Recharge from SWP Water

Petitioners assert that Respondents' planned pumping from the Alluvial Aquifer represents a "two-fold increase," "threatens to reduce surface flows into the Santa Clara River," and will result in "higher levels of nitrates and increased chlorides due to recharge from SWP supply." (POB 26:12-16, citing AR 3:1850.) The record, however, does not show that Respondents plan a "two-fold increase" in pumping, because the figure they claim has doubled does not reflect historical agricultural and miscellaneous uses of this aquifer. (*See*, AR 1:46.)

Rather, planned pumping from the Alluvial Aquifer is approximately the same as historical pumping, which has ranged from between 20,000 afy to slightly more than 43,000 afy. (*Ibid.*; *see also*, AR 1:169-176 and 11:4634-4637.)

At these levels of pumping, the Alluvia Aquifer "shows no signs of water level-related overdraft." (AR 11:4637.) The groundwater component of overall water supply in the Santa Clarita Valley derives from a groundwater operating plan developed over the last 20 years to meet water requirements while maintaining the groundwater basin in a sustainable condition. (AR 1:45.) The 2005 UWMP's conclusions with respect to the availability of groundwater supplies are based on the groundwater operating plan and the sustainability analyses of two formal reports prepared to analyze the groundwater flow and sustainability (AR 1:45); the groundwater operating plan is summarized in Table 3-6. (AR 1:46.) When overall groundwater pumping is maintained in accordance with the groundwater operating plan, sustainable groundwater conditions will be maintained to support groundwater use on an ongoing basis. (AR 1:47.)

Respondents' conclusion that the planned yield from the groundwater basin is sustainable is supported by substantial evidence. (*See*, AR 1:51.)

The assertion that any "increase in Alluvial pumping" will "result in 'higher levels of nitrates and increased chlorides due to recharges from SWP supply'" also has no support in the record. As an initial matter, there is no nexus between an increase in Alluvial pumping and higher levels of nitrates or chlorides due to recharges from SWP supply. Assuming, however, that there were an "increase" in pumping levels (which is not the plan), and assuming that this would lead to increased

recharge from SWP supply, there is no basis in the record for concluding that this would lead to increased chlorides. To the contrary, the most recent evidence suggests that groundwater "may . . . contain higher concentrations of nitrates and chlorides when compared to SWP water." (AR 1:76; *see also*, AR 1:75 [noting that the chloride content in SWP water varies from below 40 mg/l to over 100 mg/l and does not pose a human health risk, and noting that the nitrate content of SWP water is very low], AR 2:657 & 1218 [General Manager and consultant statement on this point].)

B. The 2005 UWMP Adequately Discloses the Nature of Perchlorate Contamination, Remediation Efforts, and Their Effect on Groundwater

Petitioners generally contend that the 2005 UWMP fails to address adequate and timely remediation of the groundwater basin, and specifically assert that "the reactivation of [the] Q2 [Well] will draw the perchlorate plume towards the Santa Clara River and potentially cause long-term contamination of the river," and that the Plan "fails to adequately address and assure the timely remediation of the growing contamination of the Saugus Formation." (POB 27:9-17.) Each of these assertions, lacks evidentiary support from the record.[9]

As to Petitioners' assertions concerning the Q2 Well, the 2005 UWMP discloses that the well was returned to service in October 2005, after

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[9]In addition, these are not proper arguments for consideration here, as the Act exempts the preparation and adoption of an urban water management plan from CEQA. (Wat. Code, § 10652.) Conversely, the 2005 UWMP's identification of projects, like groundwater banking projects, does not render those projects exempt from CEQA. (*Ibid.*) As a result, while the environmental impacts of an identified project listed in an urban water management plan are not required to be analyzed in the plan, all potentially significant impacts resulting from implementation of such a project must be assessed in the environmental documents for that particular project at the time of its implementation.

the installation of wellhead treatment and after the completion of environmental review related thereto; although, as the Plan acknowledges, that well was not necessary for the anticipated production from the Alluvial Aquifer. (AR 1:48-49 and 78.) More importantly, the 2005 UWMP explains (and Figure 5-1 of the 2005 UWMP illustrates) that the two-year groundwater capture zone analysis of Alluvial wells suggests that inflow to those wells will either be upgradient of the contamination site or will be from Alluvium beyond where perchlorate is to be transported. (AR 1:79-80; *see also*, AR 10:4598-4599 [describing the results of the Alluvial production wells] and AR 16:7177.) Therefore, it does not appear that the Q2 Well will draw that perchlorate plume towards the Santa Clara River. With respect to Petitioners' latter two assertions, the Groundwater Perchlorate Contamination Amendment to the 2000 UWMP and 2005 UWMP belie their assertions, as the documents contain substantial evidence to support the conclusion that adequate non-impacted water is available from the Alluvial Aquifer (AR 1:77 and 195-209; AR 10:4464-4605); that a plan for containing the contamination has been prepared and is being implemented; and that contamination clean-up is planned under the direction of the Department of Toxic Substances Control. (AR 1:81-87.)

Finally, Petitioners argue that the 2005 UWMP should have analyzed alternative sources of water that can be used in place of contaminated supplies "if" remediation plans fail. (POB 28.) Substantial evidence in the record, however, supports the conclusion in the 2005 UWMP that alternative water sources are *not* needed.

The 2005 UWMP assessed the adequacy and availability of groundwater supplies in both the Alluvial Aquifer and Saugus Formation. (AR 1:45-54.) As to the Alluvial Aquifer, the 2005 UWMP disclosed that the

combined active Alluvial groundwater source capacity of non-impacted municipal wells is approximately 58,000 afy. (AR 1:48.) It concluded that this capacity is "more than sufficient to meet the municipal, or urban, component of groundwater supply from the Alluvium, which is currently 20,000 to 25,000 afy of the total planned Alluvial pumping of 30,000 to 40,000 afy." (*Ibid.*) As to the Saugus Formation, the 2005 UWMP found that the combined active Saugus groundwater source capacity for municipal wells is 24,000 afy, which is "more than sufficient to meet the planned use of Saugus groundwater in normal years of 7,500 to 15,000 afy." (AR 1:52.) The 2005 UWMP also addressed Saugus capacity in the near-term:

> During the currently scheduled two-year time frame for restoration of impacted Saugus capacity (as discussed further in Chapter 5), this currently active capacity is more than sufficient to meet water demands, in combination with other sources, if both of the next two years are dry. At that time, the combination of currently active capacity and restored impacted capacity, through a combination of treatment at two of the impacted wells and replacement well construction, will provide sufficient total Saugus capacity to meet the planned use of Saugus groundwater during multiple dry-years of 35,000 af, if that third year is also a dry year. (AR 1:52.)

The Plan further identified that in actual practice, however, pumping from the Saugus Formation was *only* about 6,500 af in 2004; and, on average, Saugus pumping has been *only* about 7,000 afy since 1980. (AR 11:4615.) Because groundwater supplies are both adequate and available, even after accounting for the perchlorate-impacted municipal supply wells, there is no legal requirement to assess "alternative" sources of supply under the UWMP Act or any other law or regulation.

C. The Groundwater for the Newhall Ranch Project and TDS

Petitioners also contend that the 2005 UWMP is inadequate because it does not address a particular development project's (*i.e.*, Newhall

Ranch's) potential for not being able to convert its agricultural water supplies to urban uses due to TDS levels. (POB 28:17-21.)

Petitioners offer no evidence to support the claim that TDS levels are "excessive," and only rely on two comment letters that essentially repeat the same point. (*See* AR 3:1331 and 1852.) As reported in the 2005 UWMP, "all groundwater meets or exceeds drinking water standards." (AR 1:76.) Similarly, the 2004 Santa Clarita Valley Water Report, upon which the 2005 UWMP relies, "CLWA produces water that meets drinking water standards set by [the U.S. Environmental Protection Agency] and [the California Department of Health Services]." (AR 11:4644.) In any case, the UWMP Act does not require an urban water management plan to evaluate specific development projects. (Wat. Code, § 10652.) At the project level, all development projects are required to perform the necessary environmental review under CEQA, and this review will necessarily address project-specific water quality issues, if any.

IV. The UWMP Act Does Not Require Cumulative Impacts Analysis

Petitioners argue that the 2005 UWMP fails to address the cumulative impacts of urbanization on local water resources. (POB 29-31.) Specifically, Petitioners claim that the 2005 UWMP: (1) *fails* to address impacts such as decreased recharge due to decreasing percolation rates caused by the increase in the acreage of impervious surface area; and (2) *fails* to catalogue private groundwater well pumping. (POB 29-31; PRB 30:21-24.)

There is, however, no legal requirement in the UWMP Act for an urban water management plan to discuss "cumulative impacts." The analysis of cumulative impacts is a CEQA requirement only.[10] (Wat. Code,

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[10]CEQA requires that an EIR discuss cumulative impacts if a project's incremental environmental effects, combined with the effects

§ 10652.) Cumulative impacts are not *mentioned* in the UWMP Act. Water Code section 10631, subdivision (c)(2) reads: "For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable." Therefore, the 2005 UWMP is not inadequate and Respondents did not abuse their discretion for failing to discuss cumulative impacts.

As previously stated, substantial evidence supports the water supply projections in the 2005 UWMP. That is all that is required.

V. The Public Trust Doctrine

Petitioners argue that the 2005 UWMP violates the Public Trust Doctrine, because the 2005 UWMP will "encourage" local governments to approve urban growth, which *may* cause lower flows in the Santa Clara River. (POB 31-34.)

Petitioners' Public Trust doctrine cause of action fails to state a claim.

An urban water management plan is merely a planning document, and itself has no direct impact on public trust resources. For that reason, urban water management plans are specifically exempt from the application of the CEQA. (Wat. Code, § 10652.) Furthermore, a Public Trust Doctrine claim is not ripe unless and until an agency takes an action that has the potential to harm the public trust. (*See, Santa Teresa Citizen Action Group v. City of San Jose* (2003) 114 Cal.App.4th 689, 707-709 [nuisance and public trust causes of action not ripe where alleged injury to water supply depended on the assumption that city

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of other projects, are "cumulatively considerable." (Cal. Code Regs., tit. 14, § 15130, subd. (a).)

would approve uses for recycled water that posed a significant risk to the aquifer from which petitioners obtained their drinking water].)

In view of these conclusions, the Court need not reach the other Public Trust issues raised by Petitioners.

VI. Conclusion

The Court finds that Respondents proceeded in the manner required by law and that the actions by Respondents were supported by substantial evidence. The Petition for Writ of Mandate is denied and the Court rules in favor of Respondents on the Complaint for Declaratory Relief.

As the prevailing parties, Respondents are entitled to costs pursuant to Code of Civil Procedure section 1032.

Objections, if any, to this Statement of Decision shall be filed in Department 85 on or before August 20, 2007.

DATED: August 3, 2007

Dzintra I. Janavs
Judge of the Superior Court

DIJ:dl

FILED
LOS ANGELES SUPERIOR COURT
AUG 15 2007
JOHN A. CLARKE, CLERK
BY S. BARRETT, DEPUTY

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

SANTA CLARITA OAK CONSERVANCY, CALIFORNIA OAK FOUNDATION and SANTA CLARITA ORGANIZATION FOR PLANNING THE ENVIRONMENT, Plaintiffs and Petitioners, vs. CITY OF SANTA CLARITA, a municipal corporation, SANTA CLARITA CITY COUNCIL, and DOES 1-25, inclusive, Defendants and Respondents.	CASE NO. BS 084677 **STATEMENT OF DECISION**
GATE KING PROPERTIES, et al., Real Parties in Interest.	

Having taken the matter under submission on August 9, 2007, after parties' submission of proposed Statements of Decision, having considered all the evidence admitted and the parties' oral and written arguments, the Court rules as follows:

Petitioners Santa Clarita Oak Conservancy, California Oak Foundation, and Santa Clarita Organization for Planning the Environment ("Petitioners") seek a Writ of Mandate commanding Respondents City of Santa Clarita and Santa Clarita City Council ("City" or "Respondents") to set

aside its decision certifying the recirculated Final Additional Analysis ("FAA") to the Environmental Impact Report ("EIR") for the Gate King Industrial Park. The Gate-King Project is a research and development/industrial park, consisting of approximately 106 lots on 508.2 acres, of which 68 lots on 170.1 acres will be used for industrial development. The remainder will be retained in open space. (Supplemental Administrative Record ("SAR") volume 24: page 6324) The project's water demand is estimated to be 386 acre feet per year ("afy"). (SAR 10:2620; 24:6341.)

The City originally certified an EIR for the Gate-King Industrial Park Project ("Gate King") in June of 2003 and approved the project which is the subject of this action. (SAR 10:2619.) The 2003 Gate King EIR included a discussion of available water supplies, including the City's reliance on the availability of 41,000 afy of surface water transferred from the Kern County Water Agency to the Castaic Lake Water Agency ("CLWA") in 1999 ("41,000 afy Transfer"). (*Id.*) CLWA is the "wholesale" water agency to the Newhall County Water District ("NCWD"). NCWD has agreed to annex the project and supply water to it. (SAR 10:2620; 24:6324). Various parties challenged the certification of the Gate King EIR, which was upheld by this Court. (*Id.*)

On appeal, the Court of Appeal reversed and directed this Court to issue a writ of mandate vacating the City's certification of the 2003 EIR on the grounds that the EIR failed to contain substantial evidence of sufficient water supplies. (*California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219 ("*California Oak*").) The Court of Appeal held that the Gate King EIR did not sufficiently address uncertainties relating to CLWA's entitlement to the 41,000 afy Transfer. (*Id.*) The Court of Appeal found no other defects in the 2003 EIR. (*Id.* at 1236-41.) On February 15, 2006, this Court issued a Writ of Mandate ordering the City to "certify a Final Environmental Impact Report complying with CEQA consistent with the Court of Appeal's opinion in *California Oak* []."

On March 28, 2006, the City recirculated a "Draft Additional Analysis to the Final Environmental Impact Report for the Gate-King Project" ("DAA"), which "completely replace[d]" the water analysis presented in the 2003 EIR. (SAR 10:2615 – 25:6725.) As required under Public Resources Code section 21151.9 and Water Code section 10910, the DAA included a Water Supply Analysis ("WSA") prepared by NCWD. The WSA analyzed the sufficiency of water supplies for the project and concluded that: (1) the project had been included in NCWD's and CLWA's most recent

2005 Urban Water Management Plan ("UWMP") (SAR 24:6321-6351); (2) that, "[b]ased on the analysis set forth in this WSA and as supported by the documents relied on for its preparation, NCWD's total projected water supplies available during the ensuing twenty years will meet the projected water demands associated with the Gate-King Project and existing and other planned uses within NCWD's service area" (SAR 24:6351); and (3) that, based on a number of factors, including the Department of Water Resources ("DWR")'s and the court's treatment of the 41,000 afy to date, it is "unlikely" that DWR's on-going preparation of an EIR and any litigation arising out of it will "unwind" a completed and executed water transfer of 41,000 afy. (SAR 24:6331.) NCWD also based its conclusion about the sufficiency of water on State Water Project ("SWP") water reliability projections provided by DWR in its State Water Project Delivery Reliability Report. (SAR 24:6329.)

Further, the DAA discussed other concerns affecting the reliability of SWP water, providing information about climate change, the reliability of the CALSIM II model (one of DWR's water reliability modeling tools), and other SWP water issues, such as salinity in the Bay Delta. The DAA also acknowledged DWR's on-going ability to curtail Table A water deliveries of SWP water, including the 41,000 afy based on "environmental considerations." (SAR 10:2628, 2657; 31:8038-8040.) After acknowledging that these factors could affect the reliability of SWP deliveries, the DAA evaluated the likelihood that these factors in fact would significantly undermine DWR's, CLWA's and NCWD's water supply reliability projections. The DAA concluded that

> these events do not significantly affect the reliability of the transfer amount, and therefore, it is still appropriate for the City of Santa Clarita to conclude that CLWA and NCWD properly included the transfer amount as part of CLWA's 95,200 afy Table A Amount [].

(SAR 10:2662.)

The City held a public comment period to receive comments on the DAA from March 31, 2006 through May 8, 2006, and the City's Planning Commission held a public hearing on May 2, 2006 to receive public testimony on the DAA. (SAR 10:2612; 28:7240.) On May 25, 2006, the City published the "Final Additional Analysis to the Environmental Impact Report for the Gate-King

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Industrial Park" ("FAA"). (SAR 28:7234 – 37:9677.)[1] The FAA responded to comments regarding the reliability of the 41,000 afy Transfer, and affirmed the finding that, despite some uncertainty, it was appropriate for the City to conclude that the 41,000 afy Transfer was sufficiently reliable to consider it to be an available water source for planning purposes. (SAR 31:8047-8075.) On June 6, 2006, the City's Planning Commission adopted a resolution recommending re-certification of the Gate King EIR with the FAA. (SAR 38:9699-9702.) On July 11, 2006 the City Council adopted a resolution recertifying the Gate King EIR with the FAA. (SAR 38:9944-9949.) The City issued a Notice of Determination regarding the recertification on July 13, 2006. (SAR 38:9950-9951.)

On August 16, 2006, the City filed a Return to Peremptory Writ of Mandate and Request for Discharge ("Return") with this Court. On October 2, 2006, Petitioners filed an Objection to Return to Peremptory Writ and Request for Discharge.

Standard of Review

To establish a violation of the California Environmental Quality Act ("CEQA"), Petitioners must show an abuse of discretion in that the City either failed to proceed in the manner required by law or the determination or decision is not supported by substantial evidence. (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* ("Vineyard") (2007) 40 Cal. 4th 412, 426, Code Civ. Proc. § 1094.5(b); Pub. Resources Code §§ 21168, 21168.5.) This requires "scrutiny of the nature of the alleged defect" depending upon whether petitioners' claim is predominantly "one of improper procedure or a dispute over the facts." (*Vineyard,* 40 Cal.4th 412, 435.) As explained by the California Supreme Court in *Vineyard*, "while we determine *de novo* whether the agency has employed the correct procedures, . . . we accord greater deference to the agency's substantive factual conclusions," for a court's task "is not to weigh conflicting evidence and determine who has the better argument." (*Id.*)

"Substantial evidence" is defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other

[1] As the final CEQA document, the FAA includes the DAA plus responses to comments and modifications to the text of the DAA where required. (14 Cal. Code of Regs. § 15362 (b); hereafter "CEQA Guidelines."

conclusions might also be reached." CEQA Guidelines § 15384(a); *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 393.) Substantial evidence may include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts, but not argument, speculation, unsubstantiated opinion, or clearly erroneous evidence. (Pub. Res. Code §§ 21080(e)(1)(2), 21082.2(c).)

"[I]n applying the substantial evidence standard, the reviewing court must resolve reasonable doubt in favor of the administrative finding and decision. As such, if there are conflicts in the evidence, their resolution is for the agency." (*River Valley Preservation Project v. Metropolitan Transit Dev. Bd.* (1995) 37 Cal.App.4th 154, 168.) Determinations in an EIR must be upheld if supported by substantial evidence, and the mere presence of conflicting evidence in the administrative record does not invalidate them. (*Chaparral Greens v. City of Chula Vista* (1996) 50 Cal.App.4th 1134, 1143.) An agency's approval of an EIR may not be set aside on the ground that an opposite conclusion would have been equally or more reasonable. (*Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 393.) The Court passes only upon the EIR's sufficiency as an informative document, not upon the correctness of its environmental conclusions. (*Laurel Heights* at 392.) An EIR's informational content needs to be adequate to fulfill its informational purpose. It need not be perfect: "CEQA requires an EIR to reflect a good faith effort at full disclosure; it does not mandate perfection, nor does it require an analysis to be exhaustive. The absence of information in an EIR does not per se constitute a prejudicial abuse of discretion." (*Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20, 26.)

"As with all substantial evidence challenges, an appellant challenging an EIR for insufficient evidence must lay out the evidence favorable to the other side and show why it is lacking. Failure to do so is fatal. A reviewing court will not independently review the record to make up for appellant's failure to carry his burden." (*Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1266; *see also Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018 at 1029 ["plaintiffs bear the burden of proving a prejudicial abuse of discretion by establishing that the agencies' decisions are not supported by substantial evidence or that they failed to proceed in a manner required by law"].)

A. The City Was Not Legally Precluded From Relying on the 41,000 afy Transfer Pending Completion of Litigation Surrounding the Monterey Agreement and DWR's Programmatic EIR.

Petitioners contend that the City is precluded from relying on the 41,000 afy Transfer for planning purposes. The argument rests predominantly on the relationship between the 41,000 afy Transfer and on-going proceedings involving the Monterey Agreement, summarized hereafter.

In 1999, CLWA entered into a contract with the Kern Delta Water District for transfer of 41,000 afy. The CLWA certified an EIR for the 41,000 afy Transfer tiered on the earlier program EIR that had been prepared for the Monterey Agreement, a multi-party agreement among SWP contractors setting forth allocations and other provisions concerning SWP deliveries.

In *Planning and Conservation League v. Dept. of Water Resources* (2000) 83 Cal.App.4th 892 ("*PCL*"), the PCL successfully challenged the Monterey Agreement program EIR. The Court of Appeal held that the EIR should have been prepared by DWR as the lead agency, rather than by one of the contractors, and that a new EIR must be prepared and certified by DWR. The Court did not invalidate the Monterey Agreement or enjoin the water transfers effected thereunder, but directed the trial court to consider whether the Monterey Agreement should remain in place pending preparation of DWR's new EIR, and to retain jurisdiction pending certification of DWR's EIR.

In *Friends of Santa Clara River v. CLWA* (2002) 95 Cal.App.4th 1373 ("Friends I"), the Court of Appeal ordered CLWA's EIR for the 41,000 afy Transfer decertified because it had been tiered from the Monterey Agreement EIR, adjudged inadequate: "We have examined all of appellant's other contentions and find them to be without merit. If the PCL/tiering problem had not arisen, we would have affirmed the judgment" (*Friends, supra*, at 1387.) The Court did not issue any ruling affecting CLWA's ability to continue to use and rely on water supplies from the 41,000 afy Transfer, leaving it to the trial court's discretion whether to enjoin CLWA's use of the water pending its completion of a new EIR. (*Friends, supra*, at 1388.)

In September 2002, on remand to the Los Angeles County Superior Court, the *Friends* petitioners applied under CEQA section 21168.9 to enjoin CLWA from continuing to use and rely on water from the 41,000 afy Transfer. The trial court rejected that request, and in December 2003, the Court of Appeal affirmed the trial court's ruling allowing CLWA to continue to use and rely on water

from the 41,000 afy Transfer pending completion of its new EIR. (*Id.*; *see also Friends of the Santa Clara River v. Castaic Lake Water Agency*, 2003 WL 22839353 ("*Friends II*") at SAR 34:8741.)

Meanwhile, in May 2003, before the trial court acted on remand, the parties to the PCL litigation entered into the Monterey Settlement Agreement. Section II of that Agreement provides that SWP would continue to be administered and operated in accord with both the Monterey Amendments and the terms of the Monterey Settlement Agreement. (SAR 34:8832.) The Monterey Settlement Agreement did not invalidate or vacate the Monterey Amendments, or any water transfer effected under them. The Agreement called for DWR to prepare a programmatic EIR for the Monterey Amendment and to evaluate the environmental impacts of eight completed water transfers, including the 41,000 afy Transfer, within the broad context of the Monterey Agreement.

In December, 2004, CLWA certified a new EIR for the 41,000 afy which did not tier off of the Monterey Agreement EIR. DWR did not object to CLWA acting as lead agency for the 41,000 afy Transfer and, in fact, commented favorably on the CLWA's EIR. (SAR 31:8049-8050.) That EIR was again subsequently challenged. (*California Water Impact Network v. Castaic Lake Water Agency*, LASC Case No. BS 098724.)

In March, 2007, the California Supreme Court decided *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412. In *Vineyard*, plaintiff challenged the EIR for a large, residential development project on the basis that the project's projected water supply was so uncertain that the EIR effectively failed to identify the source of the water needed to supply the project in the long term.[2] According to the petitioner, this failure of the EIR could not be cured since the EIR improperly deferred analysis of the project's true water supply impacts.

The Sunrise Douglas EIR projected water supplies to come from two sources: groundwater supplies in the near-term and additional surface water sources in the long-term. With respect to long-term supplies, the court held that the EIR had failed to proceed in accordance with law for failure to provide sufficient information. It leaves "too great a degree of uncertainty regarding the long-term availability of water for this project. Factual inconsistencies and lack of clarity in the [analysis] leave

[2] The Sunrise Douglas project would demand approximately 22,000 afy based on a projected build-out of 22,000 units of housing, housing approximately 60,000 people.

the reader[,] and the decision-maker[,] without substantial evidence for concluding that sufficient water is, in fact, likely to be available for the Sunrise Douglas project at full buildout." (*Vineyard,* 40 Cal.4th at 439.) With respect to the need to identify replacement supplies, the court held that, "[w]here, despite a full discussion, it is impossible to confidently determine that anticipated future water sources will be available, CEQA requires some discussion of possible replacement sources or alternatives to use of the anticipated water, and of the environmental consequences of those contingences." (*Vineyard,* 40 Cal.4th at 432.)

On the other hand, the court upheld as adequate the Sunrise Douglas EIR's analysis of near-term groundwater supplies and held that the EIR's conclusions should not be set aside if supported by substantial evidence. Despite *some uncertainty* about the availability of the near-term supplies, which had been specifically identified but were subject to competing demands, the court held that substantial evidence supported the city's determination that the supplies were sufficiently reliable to be used for planning purposes and did not require an analysis of replacement sources. (*Vineyard,* 40 Cal.4th at 436-438; see also *Western Placer Citizens for an Agric. and Rural Env't v. County of Placer* (2006) 144 Cal.App.4th 890, 908 [an EIR need not identify a "guaranteed" source of water; "if an EIR were required to identify a guaranteed source of water, then no EIR would ever be sufficient."].)

In April, 2007, Department 13 of the Los Angeles Superior Court issued a Statement of Decision in Case No. BS 098724 (the second challenge to CLWA's 2004 EIR referred to above) and ruled that (1) the 41,000 afy Transfer was final and not subject to invalidation; (2) that CLWA was the proper lead agency to have prepared the EIR on the 41,000 afy and; (3) that CLWA was not required to await preparation of DWR's programmatic EIR on the Monterey Agreements before it could certify its own EIR.[3] The court nonetheless identified an analytical "hole" in CLWA's EIR based on its failure to explain the relationship between DWR's ability to impact the 41,000 afy Transfer as a result of its programmatic EIR and the three future water supply scenarios CLWA studied in its EIR. However, like all other courts that have faced this issue, the court refused to invalidate the Transfer or set it aside pending correction of this analytical defect.

[3] The court grants Petitioner's Request for Judicial notice of the trial court's Statement of Decision in *California Water Impact Network v. Castaic Lake Water Agency,* Case No. BS 098724.

1. *PCL, Friends of the Santa Clara River* and *California Oak* Do Not Preclude Reliance on the 41,000 afy Transfer

Petitioners contend that legal uncertainties surrounding the 41,000 afy Transfer due to the *PCL* and *Friends* lawsuits and the on-going preparation by DWR of a programmatic EIR preclude the City from relying on water from that transfer for planning purposes. Specifically, Petitioners contend that because *PCL* requires the Department of Water Resources ("DWR") to prepare an EIR analyzing the effects of the eight SWP water transfers completed under the Monterey Agreement, none of those transfers, including the 41,000 afy Transfer, are sufficiently reliable for planning purposes until DWR has completed and certified that EIR.

PCL, Friends and *California Oak* do not preclude reliance on the 41,000 afy Transfer for planning purposes. While the Courts of Appeal could have simply said that all EIRs requiring reliance on the 41,000 afy Transfer must await the certification of a new FEIR by DWR (and resolution of any litigation challenging such FEIR), they have not done that. In fact, no court has said that.

Although the Court in *Friends* and *California Oak* observed that CLWA "may be able to cure the PCL problem by awaiting action by the [DWR] complying with the PCL decision, then issuing a subsequent EIR, supplement to EIR, or addendum . . . tiering upon a newly certified Monterey Agreement EIR" (*California Oak, supra*, 133 Cal.App.4th at 1229," n.6), neither court said that local water or planning agencies must await the DWR Programmatic EIR. In fact, the *California Oak* court made it clear that as long as the basis for the decision was transparent and reasoned, it was *up to the City* to decide whether the 41,000 afy is sufficiently reliable for planning purposes. (*Id.* at 1237-38, emphasis added.)

2. The Monterey Settlement Agreement and DWR's Pending EIR Does Not Preclude Reliance on the Transfer.

The Monterey Settlement Agreement does not prohibit local agencies from relying on the 41,000 afy Transfer. Rather, the Settlement Agreement simply requires DWR to conduct an "[a]nalysis of the potential environmental [impacts] relating to" several undisputedly final and completed water transfers, not just of the 41,000 afy Transfer (SAR 34:8834) and to analyze all of the transfers in the same manner, even though seven of them, defined in the Agreement as the

"Attachment E Transfers," were beyond challenge. (*Id.*) All of the water transfers were effected as permanent transfers under the Agreement and are to be analyzed in the same way in DWR's new EIR and no material distinction is made between them. Nothing in the Settlement Agreement requires cities and counties to stop land use planning efforts until the DWR's EIR is certified, and no court has so held.

Nor is the fact of DWR's pending programmatic EIR a bar to the City's reliance on the 41,000 afy. While it is possible that DWR's EIR could impact the Transfer (a fact disclosed in the FAA), the preparation of that EIR by DWR is not a legal prerequisite for the approval of this Project by the City. Further, NCWD, the expert water agency that prepared the WSA for the Gate-King project, determined that it is "unlikely" that DWR's on-going preparation of an EIR and any litigation arising out of it will "unwind" completed and executed water transfers, such as the 41,000 afy Transfer. (SAR 24:6331.) The City's reliance on this conclusion was reasonable, based on evidence that showed (1) that DWR has treated and continues to treat the 41,000 afy as a valid, final transfer (SAR 31:8046); (2) that the 41,000 afy Transfer was memorialized in a 1999 supply contract amendment approved by DWR (SAR 31:8050); (3) that DWR has allocated and delivered the water in accordance with the transfer since 2000, seven years ago and increased CLWA's SWP maximum Table Amount by that amount (*Id.*); (4) that CLWA has paid $47 million for the water, monies which have been delivered and which were financed by tax-exempt bonds (*Id.*); (5) that DWR has always treated the transfer as a "permanent" and final Table A transfer and has stated that it is consistent with the implementation of the Monterey Amendments (*Id.*); (6) that DWR praised CLWA's 2004 EIR as a comprehensive and thorough analysis (SAR 10:2672); (7) that no court has ever set aside the Transfer pending preparation of CLWA's EIR or SWR's programmatic EIR; and (8) that DWR included the 41,000 afy in its most recent SWP Reliability Projections. (SAR 10:2671; 31:8050-8051.) These factors support the City's conclusion that neither the DWR (nor the courts) are likely to significantly disturb the 41,000 afy Transfer.

In summary, contrary to Petitioners' arguments, no *legal* bar exists to the City's reliance on the 41,000 afy Transfer for planning purposes. *California Oak* held that it was up to *the City* to determine whether or not to rely on the 41,000 afy Transfer in its planning pending the completion of the

litigation. The Court stated: "*[T]he question is whether the entitlement should be used for purposes of planning future development*, since its prospective availability is legally uncertain. *Although this decision must be made by the City*, the EIR is intended to serve as an informative document to make government action transparent. Transparency is impossible without a clear and complete explanation of the circumstances surrounding the reliability of the water supply." (*Id.* at 1237-38; emphasis supplied.)

The City's recirculated FAA transparently discussed the uncertainties related to the 41,000 afy Transfer, including disclosing the possibility that future actions by DWR could adversely impact the Transfer. Based on the evidence before it, the City reasonably concluded that it was unlikely that the 41,000 afy would cease to be available to serve this project and other projects.

3. The Invalidation of CLWA's EIR Does Not Undermine the City's EIR.

Petitioners contend that the April 2007 Statement of Decision invalidating of CLWA's EIR for the 41,000 afy Transfer in *California Water Impact Network v. Castaic Lake Water Agency* (Case No. BS 098724) undermines the adequacy of the City's FAA, which was certified in July, 2006. But as recognized by the *California Oak* court:

> It is well-established that once a project is approved, new information does not require reopening the approval. (*SCOPE, supra*, 106 Cal.App.4th at p. 723; Cal.Code Regs., tit. 14, § 15162, subd. (c).) Gate King is thus correct that it is "simply too late to raise this [the invalidation of the UWMP 2000] as an issue." (133 Cal.App.4th at 1243.)

As with the invalidation of the 2000 UWMP in the *California Oak* case, the setting aside of CLWA's EIR nearly a year after the City's certification of the FAA cannot re-open the validity of that certification. When the City certified the Gate King FAA in July, 2006, it was entitled to assume that the CLWA's certified EIR was adequate to support CLWA's approval of the 41,000 afy Transfer. (*State of California v. Superior Ct.* (1990) 222 Cal.App.3d 1416, 1419.)

But in any event, the City's FAA anticipated the possibility that CLWA's EIR might be invalidated, but concluded that the Transfer was still likely to prove reliable. The City's FAA said:

> "[T]he City has determined that it is reasonable to conclude that *even if a court finds that the CLWA 2004 EIR legally deficient*, that court, like all others before it, will again refuse to enjoin the permanent 41,000 afy water transfer, and instead require further revisions to the EIR." (SAR 31:8052 (emphasis added).)

That is what happened. Although the court in Department 13 found an "analytical hole" in CLWA's EIR, it refused to set aside the Transfer.

Finally, Petitioners suggest that the City's FAA suffers from the same "analytical hole" as identified in CLWA's EIR, namely that the FAA should have predicted how the outcome of DWR's programmatic EIR might affect the three allocation scenarios examined in the CLWA's EIR—namely (1) a pre-Monterey Amendments scenario without Article 18 cutbacks, (2) a pre-Monterey Amendments scenario with Article 18 cutbacks and (3) a post-Monterey Amendments scenario.

The defect identified in the CLWA EIR does not apply to the FAA. First, Petitioners' failure to exhaust their administrative remedies with respect to these arguments bars them from raising them for the first time now. (Pub. Res. Code § 21177(a); *Sierra Club v. California Coastal Comm'n* (2005) 35 Cal.4th 839, n. 20; *Central Delta Water Agency v. State Water Res. Control Bd.* (2004) 124 Cal.App.4th 245, 274.)

Assuming *arguendo,* that Petitioners' arguments are not barred, CEQA imposes on the City no duty to examine in its project EIR the three "Monterey" allocation scenarios assessed in CLWA's EIR for the 41,000 afy. Public Resources Code § 21002.1 provides that "[t]he purpose of an [EIR] is to identify the significant effects on the environment *of* [*the*] *project* . . . ." (emphasis added.) In CLWA's EIR, the "project" was a 41,000 afy Transfer. In the City's FAA, the "project" was a local industrial park project. None of the Monterey allocation scenarios are a direct or indirect environmental consequence of approval of *this* project. Petitioners stretch CEQA beyond its limits to suggest that the City's FAA should have contained a detailed environmental assessment of the 41,000 afy Transfer, a project under the jurisdiction of a different agency, and with very different environmental ramifications.

Rather, under CEQA, the FAA was required to contain a reasoned and adequate assessment of whether there will be sufficient water to serve *the project* and, to the extent water is deemed *not* available, the environmental impacts of acquiring needed water. (*California Oaks* at 448, *Vineyard* at 432.) In this case, the FAA contained a reasoned, good faith analysis, identified specific, available water supplies, and discussed the reliability of those supplies. Acknowledging potential uncertainties (including DWR's ability to curtail Table A deliveries in the future based on "environmental

considerations,") of the available supplies, the FAA nonetheless concludes that DWR's future activities are "unlikely to 'unwind' [a] completed and executed...transfer[]." (SAR 24:6331) There is no "analytical hole" here. The FAA identifies water available to serve the project, discusses the degree of uncertainty related to those identified supplies, and based on substantial evidence, concludes that the supplies are *sufficiently* reliable to use for planning purposes.

4. The FAA was not required to identify supplies to replace the 41,000 afy

Petitioners claim that *California Oak* and *Vineyard* required the City to identify permanent replacement water supplies to serve the project, should the 41,000 afy Transfer at some point cease to be available. Petitioners misread *California Oak* and *Vineyard*. Rather, *California Oak* requires that the City explain why it can rely on the 41,000 afy Transfer, despite the legal uncertainties, ***or*** identify additional water supplies for the project. (*California Oak, supra*, 133 Cal.App.4th at 1242 [emphasis added].) It does not require that the City do both. (See also *id.* at 1244 calling for the EIR to demonstrate how "demand for water would be met without the 41,000 afy entitlement, ***or*** of why it is appropriate to rely on the 41,000 afy Transfer in any event." (*Id.* at 1242 [emphasis added].) "Whether the [41,000 afy] entitlement should be used for purposes of planning future development" is a decision that "must be made by the City." (*Id.* at 1237-1238.)

In the FAA, the City chose to rely upon the continued availability of 41,000 afy Transfer in its water supply analysis and to explain why. As ordered by the Court of Appeal, it provided a reasoned analysis based on substantial evidence as to why it was appropriate to do so. (SAR 10:2615 – 25:6726; SAR 28:7234 – 37:9677.) Having done so, the City was not required to also identify water supplies to replace the 41,000 afy.

Nor does *Vineyard Area Citizens* require the City to identify replacement sources of water. In *Vineyard*, the Supreme Court held that "where, despite a full discussion, it is *impossible to confidently determine* that anticipated future water sources will be available, CEQA requires some discussion of possible replacement sources or alternatives to use of the anticipated water, and of the environmental consequences of those contingences." (*Vineyard*, 40 Cal.4th at 432.) Here, it was *not* impossible to confidently determine that the 41,000 afy would continue to be available based on the record before the City. While *some* uncertainty existed, there was sufficient certainty for the City to confidently

predict that water supplies would in fact continue to be available. The *Vineyard* court does not require a *guarantee* of certainty for an EIR's water analysis to be considered adequate, just a "likelihood of actually proving available." (*Id.*)

In fact, whether a specifically identified source, such as the 41,000 afy, is *sufficiently* reliable is the kind of factual dispute that *Vineyard Area Citizens* cautioned should be subject to deference as long as the City's conclusion is supported by substantial evidence. (*Vineyard Area Citizens*, 40 Cal.4th at 436.) In *Vineyard,* the court applied this deferential approach to City's conclusion about the reliability of near-term groundwater supplies (5,000 afy). Although the 5,000 afy was specifically identified as available to serve the development, the EIR acknowledged there were competing demands for it. (*Id.*) "*While much uncertainty remains*," the court said, "the record contains substantial evidence demonstrating *a reasonable likelihood* that a water source the provider plans to use for the Sunrise Douglas project . . . will indeed be available at least in substantial part to supply the Sunrise Douglas project's near-term needs." (*Id.* at 437, emphasis added.) The *Vineyards* court did not require either a guarantee of availability or an analysis of replacement sources for the 5,000 afy of near-term supplies.

Here, as in *Vineyards,* the FAA discloses "potential uncertainty" over the 41,000 afy, but also explains why the City concluded that this specifically identified source was not *so* uncertain as to not "bear a likelihood of actually proving available" or to require identification of replacement sources. Under well-established principles, this Court must defer to the City's factual conclusion.

Finally, *Vineyard* recognizes that CEQA does not require the city to "reinvent the water planning wheel" each time it approves an individual development project if a water planning agency has already included the project in its most recently adopted Urban Water Management Plan. (UWMP) (*Vineyard*, 40 Cal.4th at 434.)[4] "The analysis in an individual project's CEQA evaluation may incorporate [an UWMP's] previous overall water planning projections," and need not "reinvent the wheel." (*Id.* at 434; see also Water Code §10910 (c)(1), (2) and (3), allowing incorporation of an UWMP analysis into an EIR) In *Vineyard,* the Sunrise Douglas project was *not* accounted for in the

[4] A UWMP must describe estimated past, present and future water sources, supply and demand for at least 20 years into the future. (Water Code §§ 10610-10656)

applicable UWMP. Here, in contrast, the Gate King project was fully accounted for in NCWD's most recently adopted UWMP, and this information was incorporated into the FAA. (SAR 10:2621; 24:6326.) Under CEQA and the Water Code, the City was entitled to incorporate the UWMP's projections of available water supplies, which included the 41,000 afy, into its water supply analysis. This is what it did.

B. Substantial evidence supports City's reliance on 41,000 afy water transfer

As noted, *California Oak* held that, as long as the City's conclusions were supported by substantial evidence, it is within the City's province to decide whether to rely on the 41,000 afy Transfer for planning purposes. (*California Oak, supra*, 133 Cal.App.4th at 1237-38.)

The FAA, here, contains a discussion of *why* the City chose to rely on the 41,000 afy as a reliable source, despite the identified uncertainties. While disclosing that future activities by DWR involving SWP water (including its programmatic EIR) *could* affect the 41,000 afy Transfer, the FAA concludes that such DWR's future activities were "unlikely" to "unwind" executed and completed agreements with respect to the permanent transfer of SWP Water Amounts." (SAR 10:2661-2664.) To support this conclusion, the FAA explains that the 41,000 afy Transfer was completed in 1999; CLWA has paid approximately $47 million for the additional Table A Amount, the monies have been delivered, the sales price has been financed through CLWA by tax-exempt bonds, and DWR has increased CLWA's SWP maximum Table A Amount and delivered or made available to CLWA the 95,200 afy because it was a permanent transfer/reallocation of SWP Table A entitlement between SWP contractors. (SAR 31:8046-8050.)[5]

The FAA also explains that DWR itself lists the 41,000 afy as part of CLWA's allocation in its published "Notices to State Water Project Contractors" (SAR 31:8046); treats the transfer as a permanent and final transfer (*Id.*); did not object to CLWA's preparation of its own EIR for the 41,000

[5] Included in the DAA's and FAA's Appendices are the necessary documents to support the FAA's analyses, including the Water Supply Assessment prepared by NCWD PCL decision (SAR 34:8916-8936), the Monterey Settlement Agreement (SAR 34:8816-8897), the Sacramento County Superior Court's "Order Pursuant to Public Resources Code Section 21168.9" (SAR 36:9410-9413), the *Friends* decision (SAR 34:8771-8779), the Los Angeles County Superior Court's Judgment on remand in the *Friends* litigation (SAR 34:8781-8791), CLWA's final EIR for the 41,000 afy Transfer (SAR 16:4029 – 19:5126), and CLWA's Resolution certifying that EIR (SAR 33:8522-8527).

afy (SAR 31:8051) and expressly allocates the 41,000 afy as part of Castaic Lake Water Agency's 95,200 afy in its 2005 State Water Project Delivery Reliability Report (SAR 22:05930), which contains "DWR's current information regarding the annual water delivery reliability of [SWP] for existing and future levels of development . . . , assuming historical patterns of precipitation." (SAR 22:5874.) This evidence—unrefuted by Petitioners—supports the City's determination that, although *possible*, it is *unlikely* that DWR will impose conditions on the Transfer that will significantly impair DWR's own projections about its reliability. (SAR 24:6331.) While the City's determinations about the reliability of the 41,000 afy contain a degree of projection, "[d]rafting an EIR . . . necessarily involves some degree of forecasting." (CEQA Guidelines 15144.) Where an agency uses its best efforts to disclose and forecast all that it reasonably can about the reasonable likelihood of future activities, it has complied with CEQA. (*Id.*)

Importantly also, Petitioners have not produced substantial evidence that DWR *will* significantly change DWR's own projections concerning the reliability of SWP water. Rather, Petitioners simply speculate that DWR might do so. Nor have Petitioners shown why the evidence relied on by the City to conclude such a result is "unlikely" is insubstantial, incorrect or flawed. Petitioners' failure to explain why the evidence favorable to the City's determination is lacking is "fatal" to its case. A reviewing court will not make up for appellant's failure to carry its burden. (*Defend the Bay, supra*, 119 Cal.App.4th 1261 at 1266.)

The City reviewed the evidence provided by the expert water agencies, NCWD, CLWA and DWR, as well as the views of commentators opposed to the City considering the 41,000 afy Transfer, and determined that the 41,000 afy was *sufficiently* reliable to be able to confidently use it for planning purposes. This determination is supported by substantial evidence in the record, and thus, comports with CEQA. (*Vineyard Area Citizens*, 40 Cal.4th at 436.)

C. The FAA properly relied on data developed by DWR using the CalSim II model.

Petitioners' criticize the City's reliance on DWR's use of the CALSIM II model and contend that other experts have said the model does not reliably predict water supplies. However, as stated in CEQA Guidelines section 15151 "[d]isagreement among experts does not make an EIR inadequate." Rather, section 15151 provides that "[an] EIR should summarize the main points of disagreement

among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal. App. 4th 1383, 1390-91) The City, after disclosing and discussing the expert controversy, appropriately chose to rely upon DWR's Reliability Report, which includes water supply availability data developed using the CALSIM II model. Substantial evidence in the record supports City's determination that DWR, the state's expert agency on water supplies, reasonably employed CALSIM II as the best available tool for assessing water supplies in California.

Petitioners focus on the "Strategic Review of CALSIM II and its Use for Water Planning, Management and Operations in Central California" ("Strategic Review") contending that the Strategic Review supports their contention that CALSIM II should not be used for absolute predictions. (SAR 35:9107-9150.) In relying on DWR's Reliability Report, the City acknowledged the Strategic Review, recognized that it identified some weaknesses with the model, but concluded – as did the Strategic Review – that CALSIM II is a valuable tool for planning purposes. (SAR 31:8074; 35:9110.) In fact, the Strategic Review viewed CALSIM II as "a very impressive modeling effort on the part of all those involved with its development and application," (SAR 35:9110, 9132) and concluded: "Few, if any, modeling organizations in the country have consistently done as good a job on model development and application for such a large, complex, and controversial system as the modeling group which developed CALSIM II. . . . Most areas and suggestions for improvement . . . are meant to aid the model developers in moving further and faster in the direction they are already heading." (SAR 35:9127.) That same experts believe the model can be improved does not detract from it being the best available currently.

Petitioners suggest that the use of CALSIM II for making absolute predictions about future SWP water deliveries conflicts with DWR's and the United States Bureau of Reclamation position on the model, but DWR and the Bureau of Reclamation's ("Bureau") primary position paper on this issue: "Peer Review Response: A Report by DWR/Reclamation in Reply to the Peer Review of the CALSIM II Model" ("Peer Review Response") does not support this. (SAR 37:9592-9660.) The Peer Review Response, which responds to the Strategic Review, states that the CALSIM II Model *can* be

used to make absolute predictions in certain circumstances, including for "local planning efforts by project contractors and local agencies." (SAR 37:9619.)

Petitioners further argue that in an unpublished U.S. District Court opinion, *Planning and Conservation League v. U.S. Bureau of Reclamation*, ("*PCL/Bureau*") the Bureau "essentially admitted that the model is too unreliable for making absolute predictions." But the decision only highlights a fact which is not in dispute, and which the City prominently disclosed in the FAA: there are perceived shortcomings to the CALSIM II model. The *PCL/Bureau* decision (discussed in the FAA, included in the FAA's appendices), did not restrict "the Bureau or any other agency from using or relying on the CalSim-II model but, rather, stated that the Bureau could rely on the model, provided it disclosed relevant shortcomings in the data or model itself." (SAR 31:8074; *see also* 34:8938-8955.) The FAA did disclose these shortcomings.

Finally, the City's responses to comments by the Planning and Conservation League and California Water Impact Network were appropriate. (*See* SAR 31:8097-8098, 8102-8103.) In those responses the City recognized that the CALSIM II model has shortcomings, but concluded that it may still be relied on, as it is relied upon by experts DWR and the Bureau. (*Id.*) CEQA requires nothing more. (*See Greenbaum v. City of Los Angeles* (1984) 153 Cal.App.3d 391, 412-13 [agency has discretion to determine what methodology to use].)

D. The FAA properly evaluated the potential impact of global warming on water supplies.

The FAA appropriately concluded, based on adequate review of global warming literature and relevant studies, that the impact of climate change on water supplies was too speculative to conduct further meaningful quantitative review.

The FAA reviewed literature on global climate change, and has a seven-page discussion of the issue in Topical Response 3. (SAR 31:8076-8082.) The FAA recognizes that a broad consensus has concluded that the global climate is warming and that this change may adversely impact California's water supplies. (*Id.*) After reviewing the relevant studies, however, the FAA determined that the timing and extent of any impact to water supplies remains highly uncertain. (*Id.*) While DWR and other agencies and institutions continue to study the implications of global warming on water supplies, the FAA notes that DWR itself has determined that the science "has not reached a level at which it can

be quantitatively incorporated into delivery projections of the SWP." (SAR 31:8077.) The FAA states that the City reviewed these studies and DWR's approach and independently determined that it would be speculative to try to quantify the effects of climate change on water supply reliability at this point. (SAR 31:8082.)

CEQA permits such an approach. Given DWR's expert opinion that the quantitative impact of global warming on water supplies is speculative, CEQA did not require further analysis of those impacts. CEQA Guidelines § 15145 provides: "If, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." (*See also Marin Municipal Water Dist. v. KG Land California Corp.* (1991) 235 Cal.App.3d 1652, 1662-63 [upholding approach in which EIR investigated potential long-term impacts, but found analysis would be speculative].)

Petitioners argue that the City was required to make a "good faith effort to analyze the potential impacts on supply reliability based on the available data." It did. FAA Topical Response 3 contains an adequate discussion of global warming, including a summary of the various studies which examine the potential impact on water supplies in California. (SAR 31:8076-8082.) It recognizes that some studies have concluded that less water will be available as a result of global warming. (SAR 31:8078, 8080.) However, the FAA also reviewed studies that found that global warming may result in more water for California. (*Id.*) After summarizing the main points of these studies, the City exercised its discretion as lead agency, and chose to adopt DWR's expert opinion that quantifying the impact of global warming on water supplies at this time would be speculative:

> [B]ased on the above data, the City agrees with DWR that it would be speculative at this time to quantify the effects of climate changes on the reliability of the SWP . . . [a]t this time, the City believes it is appropriate to terminate any further analysis of potential future climatic changes, consistent with Section 15145 of the California Environmental Quality Act Guidelines.

(SAR 31:8082.)

Climate change is clearly an issue of vital importance, particularly to water supplies in California. DWR, the state agency with the most expertise on water supplies in California, has determined that the science on global warming has not reached a point where it can be "quantitatively

incorporated into delivery projections of the SWP." (SAR 31:8077.) The City Council of the City of Santa Clarita is in no better position to do so and CEQA does not require it to do so.

1. The FAA adequately addressed State Water Resources Control Board Order 2006-0006.

The FAA adequately addresses the State Water Resources Control Board's Order 2006-0006 ("Order")[6] concerning the maintenance of salinity standards in the Sacramento Bay Delta. Petitioners argue that the City must forecast the "extent to which meeting the salinity standard in DWR's State Water Board permit may result in reductions to SWP deliveries." However, as explained by the FAA, there are a variety of overlapping methods by which DWR may comply with the Order. (SAR 31:8070-8071.) After examining these methods and considering the current efforts underway by DWR to meet the salinity standards, as well as noting that, even if DWR were to be found in violation of the Order, a reduction in water deliveries is not required. The City's conclusion that the Order does not result in a reduction of State Water Program supplies to the DWR is supported by the evidence.

As described in the FAA, in the event that DWR or the Bureau projects that there may be a "potential exceedance in the salinity objectives" of the Board Order the "two agencies are required to immediately inform the State Board . . . and describe the corrective actions they are initiating to avoid the exceedance." The 'corrective actions' may include, but are not limited to:

> [A]dditional releases from upstream [CVP] facilities or south of the Delta [SWP] or CVP facilities, modification in the timing of releases from Project facilities, reduction in exports, recirculation of water through the San Joaquin River, purchases or exchanges of water under transfers from other entities, modified operations of temporary barriers, reductions in highly saline drainage from upstream sources, or alternative supplies to Delta farmers (including overland supplies).

(SAR 31:8070.) The FAA finds that, "While the reduction of exports is listed as one means of improving salinity concentrations, it is only one of many such methods. As noted above, implementation of a barrier program is another means for improving salinity concentrations and, in fact, DWR and the Bureau are working on such a program." (*Id.*)

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[6] Although the text of the Order itself was not included in the Administrative Record, it is apparent the City had access to the Order as part of its deliberations, as the City's FAA contains a detailed analysis of it. It appears to have been inadvertently omitted from the Supplemental Administrative Record. The Court grants Real Parties' Request for Judicial Notice of SWRCB Order 2006-0006 under Evidence Code §452.

The FAA further notes that, even if there was an "exceedance," an enforcement action would not be automatic, as the Executive Director of the State Water Board would first have to consider if any action was appropriate and whether the "non-compliance was beyond DWR's or the Bureau's control." (SAR 31:8071.) Given the variety of methods available to DWR and the Bureau to meet the salinity standards, the current efforts towards implementation of a barrier program, and the administrative provisions of the Order, the FAA appropriately concludes that "nowhere does the Order mandate that DWR and the Bureau shut down their pumps." (*Id.*) Analyzing the impacts of speculative future enforcement actions is not required under CEQA.

CONCLUSION

As directed by *California Oak*, the City has adequately analyzed the uncertainties surrounding the 41,000 afy water Transfer and explained in good faith the basis for its reliance on that Transfer. That analysis need not be exhaustive, but with a sufficient degree of analysis to make a decision which intelligently takes account of environmental consequences. (CEQA Guidelines § 15151.) Perfection is not required: adequacy, completeness and a good faith effort at full disclosure are. The City's determinations are not an abuse of discretion, but supported by substantial evidence.

The Court accepts the City's Return to the Writ of Mandate and the Final Additional Analysis to the Environmental Impact Report for the Gate-King Industrial Park as adequate and, accordingly, IT IS SO ADJUDGED that the Peremptory Writ of Mandate is DISCHARGED.

Counsel for respondent shall prepare, serve and lodge in Department 85 a proposed order/judgment discharging the writ on or before August 21, 2007.

Objections to this Statement of Decision and proposed order and judgment shall be served and filed on or before August 31, 2007.

DATED: August 15, 2007

Dzintra I. Janavs
Judge of the Superior Court