

APPENDIX A

Table A-1 Summary of Current and Draft Water Service Contract Provisions

(9 pages)

11/2004 Draft Long Term Renewal Contract Between United States and CCWD

(60 pages)

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Explanatory Recitals			
	Assumes the U.S. is operating the CVP for beneficial uses.	Same as Existing Contract.	No effect; explanatory recitals are not operative provisions.
	Assumes the CCWD is developing a Los Vaqueros Project to assist the CCWD in providing high quality water to its customers and to increase water supply reliability.	Same as Existing Contract. Language modified to indicate Los Vaqueros Project has been constructed.	No effect; explanatory recitals are not operative provisions.
Explanatory Recitals			
	Assumes CCWD and the U.S. must agree on how the Los Vaqueros Project will be utilized with CVP water and facilities.	Same as Existing Contract.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes the rights to CVP water were acquired by the U.S.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes the Amendatory Contract exists.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes that the CCWD is required to operate and maintain the Contra Costa Canal System and Contra Loma Dam and reservoir.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes the U.S. and CCWD have a binding agreement (No. I75r-3401-BA) and supplemental agreement (No. I75r-3401-SA) that set out terms for renewing the existing contract before it expires, and to complete necessary environmental documentation and negotiation of a renewal contract.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Provides for long-term renewal of the Existing Contract following completion of appropriate environmental documentation, including PEIS for CVPIA implementation and all CVP long-term contracts renewal. Also recognizes partial assignment of the contract to a 3 rd party or acquisition of CVP water through assignments, if covered under this contract.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes PEIS and other environmental review is complete.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes CCWD requested the renewal of the Existing Contract, pursuant to existing laws and contract terms.	No effect; explanatory recitals are not operative provisions.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
	No similar recital.	Assumes CCWD has fulfilled all of its obligations under the Existing Contract; and the CCWD has utilized CVP water for reasonable and beneficial use.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes CVP water is an essential portion of the CCWD water supply; and that the CCWD service area depends on the continued availability of CVP water.	No effect; explanatory recitals are not operative provisions.
	No similar recital.	Assumes the Secretary intends to pursue ways to improve water supply, quality, and reliability.	No effect; explanatory recitals are not operative provisions.
Explanatory Recitals			
	No similar recital.	Assumes mutual goals of U.S. and CCWD relating to water reliability, costs, repayment, shortage prevention, and balance among demands; and that a cooperative relationship among parties will be developed to achieve goals.	No effect; explanatory recitals are not operative provisions.
	Assumes annual adjustment in Rates to be paid for CVP water by CCWD.	No similar recital.	No effect; explanatory recitals are not operative provisions.
Definitions			
“Calendar Year”	No similar definition.	The period January 1 through December 31.	No effect; see operative provisions.
“Charges”	Payments in addition to the Rates determined by the Contracting Officer each year.	Rewording of definition of Charges to include both Rates and Tiered Pricing Increments.	No effect; see operative provisions.
“Condition of Shortage”	No similar definition.	Project condition such that in any Year, the Contracting Officer is unable to deliver sufficient water to meet the Contract Total.	No effect; see operative provisions.
“Contra Costa Canal System”	Contra Costa Canal, including the intake channel from Rock Slough, Clayton and Ygnacio Relift Canals and pumping plants, the Martinez Reservoir and Pumping Plants 1, 2, 3, and 4.	Same as Existing Contract but also adds “and such facilities as may be authorized by Congress from time to time for rehabilitation or replacement thereof.”	No effect; see operative provisions.
“Contra Loma Dam and Reservoir”	The Dam, pumping plant, and reservoir constructed as an addition to the Contra Costa Canal System.	Same as Existing Contract.	No effect; see operative provisions.
“Contract Total”	No similar definition.	Maximum amount of water to which the CCWD is entitled.	No effect; see operative provisions.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
“CVP water” (Existing Contract) or “Project Water” (Proposed Contract)	Water appropriated by the U.S. for the operation of the CVP, in addition to and not including the Los Vaqueros water rights water.	All water developed, diverted, stored, or delivered by the Secretary in accordance with the statutes authorizing the Project and with the terms and conditions of water rights and California Law.	No effect; see operative provisions.
“CVP” (Existing Contract) or “Project” (Proposed Contract)	Central Valley Project, California, of the Bureau of Reclamation.	The Central Valley Project owned by the U.S. and managed by the Department of the Interior, Bureau of Reclamation.	No effect; see operative provisions.
“CVPIA”	No similar definition.	Central Valley Project Improvement Act, Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706).	No effect; see operative provisions.
“District Service Area”	The area to which CCWD provides continuing service.	The area to which the Contractor is permitted to provide Project Water under the Contract.	No effect; see operative provisions.
Definitions			
“Full Cost Rate”	No similar definition.	Annual rate, as determined by the Contracting Officer, that shall include expenditures for construction allocable to Project irrigation or M&I functions, of facilities in service, less payments; defines how interest will be calculated on costs outstanding; Full Cost Rate includes actual operation, maintenance, and replacement costs.	__ Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species Minor administrative change only.
“Lateral Distribution System”	The water conveyance system constructed by the U.S., consisting of pipelines extending service to CCWD water users from the Contra Costal Canal at Milepost 5.3, 6.2, 7.1, 7.3, 9.1, 14.0, 25.6, 36.6, and Y-2-6.	Same as Existing Contract.	No effect; see operative provisions.
“Los Vaqueros water rights water”	Water appropriated pursuant to State Water Rights Application #20245.	Same as Existing Contract.	No effect; see operative provisions.
“Los Vaqueros”	The Los Vaqueros Project, consisting of a storage reservoir and associated facilities to be constructed by CCWD on property owned by the CCWD, to store and convey Los Vaqueros water rights water and CVP water, as well as additional water that CCWD may acquire.	Substantially the same as Existing Contract. Language has been added to indicate Los Vaqueros has been constructed.	No effect; see operative provisions.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
“M&I Full Cost Water Rate”	No Similar Definition.	Full Cost Rate applicable to the delivery of M&I water.	No effect; see operative provisions.
“M&I Supplemental Charge”	A charge in addition to the cost of service rate, to be applied to the repayment of the CCWD’s allocated share of CVP capital costs by the Contracting Officer.	Same as Existing Contract.	No effect; see operative provisions.
Definitions			
“New Facilities”	Short Cut Pipeline located between Contra Costa Canal Milepost 25.70 and Milepost 47.77 and the Pump Units in Pumping Plant 1, 2, 3, and 4 of the Contra Costa Canal System. “Short Cut Pipeline” is the Contra Costa Canal intake, pipeline, pipeline appurtenances, Martinez Reservoir inlet; and “Pump Units” are the pump, motor, motor controls, wiring, structural supports and discharge control apparatus for pumping 100 cubic feet per second (cfs) of water.	Same as Existing Contract.	No effect; see operative provisions.
“O&M”	Normal and reasonable care, control, operation, repair, replacement, and maintenance.	Same as Existing Contract.	No effect; see operative provisions.
“Project Contractors”	No similar definition.	All parties who have water service contracts for Project Water with the U.S., pursuant to Reclamation law.	No effect; see operative provisions.
“Project Works”	The following facilities, as described above: Contra Costa Canal System, Contra Loma Dam and Reservoir, New Facilities, and Lateral Distribution System.	Same as Existing Contract.	No effect; see operative provisions.
“Rates”	Payments determined annually by the Contracting Officer in accordance with the then current ratesetting policies for the CVP.	Same as Existing Contract.	No effect; see operative provisions.
“Recent Historic Average”	No similar definition.	Most recent 5-year average of the final forecast of Water Made Available to the CCWD pursuant to this or preceding contracts.	No effect; see operative provisions.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
“Secretary” or “Contracting Officer”	The Secretary of the Interior or a duly authorized representative.	Same as Existing Contract, but also adds “or a duly appointed successor”.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.
Definitions			
“Tiered Pricing Component”	No similar definition.	Incremental amount to be paid for each AF of Water Delivered as described under “Full Cost Rate.”	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <u> </u> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species Changes in pricing could result in indirect effects to listed species as a result of subsequent changes in land use.
“Water Delivered” or “Delivered Water”	No similar definition.	Project Water diverted for use by CCWD at points of delivery approved by the Contracting Officer.	No effect; see operative provisions.
“water for irrigation use,” or “irrigation water”	Water made available from the CVP that is used primarily in the production of agricultural crops or livestock, including domestic use incidental thereto, and the watering of livestock.	No similar definition.	No effect. Irrigation water use is not being eliminated, only the type of water is changing.
“water for M&I use,” or “M&I Water”	Water made available from the CVP other than irrigation water. Includes water used for domestic uses/purposes such as watering of landscaping or pasture for animals (e.g., horses) kept for personal use. Assumes use of water delivered to land in units less than or equal to 2 acres to be M&I use, unless CCWD convinces the Contracting Officer that use is for irrigation.	Substantially same as Existing Contract, with the following exception: Assumes use of water delivered to land in units less than or equal to 5 acres to be M&I use.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <u> </u> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species Eliminating irrigation water to parcels from 2 to 5 acres in size could result in indirect effects to listed species as a result of subsequent changes in land use if irrigated lands are taken out of production and converted to urban use.
“Water Made Available”	No similar definition.	Estimated amount of Project Water that can be delivered to CCWD for the upcoming Year.	No effect; see operative provisions.
“Water Scheduled”	No similar definition.	Project Water made available to CCWD for which times and quantities for delivery have been established by CCWD and the Contracting Officer.	No effect; see operative provisions.
“Year”	Period of time from and including March 1 of each calendar year through the last day of February of the following calendar year.	Same as Existing Contract.	No effect; see operative provisions.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Term of Contract – Right to Use of Water	Contract expires on December 31, 2010. Provides for successive renewals, for periods not exceeding 25 years each, under specified conditions.	Assumes that the dates of the Contract shall be determined. Sets forth renewal standards and deadlines. 25-year renewal term for Irrigation Water; 40-year renewal term for M&I Water. Sets forth conditions for renewal, including establishing a water conservation plan and compliance with terms and conditions of the contract. Sets forth conditions for conversion of contract portions to a contract under the Reclamation Project Act of 1939.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input type="checkbox"/> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species Because the contract term would be increased from 25 to 40 years, less frequent renewals will be required. Less frequent scrutiny for ESA compliance could indirectly affect listed species.
Water to be Made Available and Delivered to the District	The CCWD is entitled to, and the Contracting Officer shall make available to the CCWD, up to 195,000 AF of CVP water during any Year. Assumes unused CVP water will be put to reasonable beneficial use for CVP purposes, in accordance with applicable state water rights permits and licenses, and the CCWD will operate Los Vaqueros in accordance with applicable state water rights permits and licenses.	Substantially same as Existing Contract, with the following additions: Specifies that 195,000 AF of CVP water will be for M&I purposes. Assumes the Contract Total will not be available to the CCWD in many years. Allows groundwater recharge and banking, surface water storage, and similar programs, subject to certain provisions and approval by the Contracting Officer. Assumes CCWD will comply with relevant Biological Opinions. Provides methods for Contracting Officer to allocate water among Contractors, to approve “pre-use,” to approve other purposes of use. Contracting Officer is to make efforts to protect Project water rights and to provide the water made available.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input type="checkbox"/> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species Eliminating irrigation water delivered to CCWD service area could indirectly affect listed species due to subsequent land use changes if irrigated lands are taken out of production and converted to urban use.
Time for Delivery of Water	Describes methods for delivering CVP water. The CCWD will submit annual written schedules to the Contracting Officer that show the times, quantities, and points of delivery of CVP water, forecasts of Los Vaqueros operations, and forecasts of the conveyance and use of non-CVP water. The U.S. will provide annual forecasts of CVP operations to the CCWD.	Substantially same as Existing Contract.	<input type="checkbox"/> Financial Effect <input type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species No substantive change.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Points of Delivery and/or Diversion – Measurement – and Responsibility for Distribution of Water	Describes points of delivery and/or diversion of CVP water and Los Vaqueros water rights water in the CCWD, given certain provisions. The U.S. shall not be held responsible for certain activities, as set forth. Describes methods of and locations for installing water measuring and recording devices in the CCWD, and provisions for adjustments and repairs for such devices.	Substantially same as Existing Contract, and adds that CCWD shall not deliver Project Water to land outside the Service Area without written approval from the Contracting Officer.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor administrative change only.
Measurement for the Conservation of Water	States that CCWD will measure water delivered for irrigation purposes at each agricultural turnout, and will measure water delivered for M&I purposes at each M&I service connection. Describes purposes of use of measurement data obtained, and provides for annual summary of deliveries to be provided to the Contracting Officer.	Substantially same as Existing Contract, but omits references to 'water for irrigation purposes at each agricultural turnout.'	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Measurement of the water will not have an impact on threatened and endangered species.
Rate and Method of Payment for Water	Assumes payment of cost-of-service rates pursuant to rate-setting policy; payment of rates for first two months of scheduled deliveries with submission of delivery schedule each year; payment before end of month for next succeeding month's deliveries thereafter; assumes payment for charges before end of month following delivery. No provision for tiered pricing.	Assumes payment of rates and charges substantially same as Existing Contract; assumes obligation to pay tiered pricing on same schedule as charges; tiered pricing applies to deliveries over 80% of Contract Total; separate rates apply to deliveries over 80% and deliveries over 90% of the contract total. Specifies that Project Water and Los Vaqueros water rights water shall be considered M&I Water. Tiered pricing does not apply to Los Vaqueros water rights water.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <u> </u> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species Changes in the pricing of CVP water could indirectly affect listed species in the CCWD service area through subsequent changes in land use.
Repayment of Project Works	Assumes costs and rates of interest for project works (Contra Costa Canal System; New Facilities; Contra Loma Dam and Reservoir; lateral distribution system); establishes annual payment schedule, under certain provisions.	Assumes same as Existing Contract.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.
Non-Interest Bearing Operation and Maintenance Deficits	No similar provision.	Assumes the CCWD has no non-interest bearing O&M deficits and therefore no liability.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Sales, Transfers, or Exchanges of Water	Assumes sales, transfers or exchanges with others in accordance with federal and state laws, guidelines and regulations, with prior written approval of Contracting Officer.	Substantially same as Existing Contract; makes express required environmental documentation; assumes Contracting Officer to facilitate historic transfers by providing environmental documentation; establishes rules for qualifying water transfers.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <u> </u> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species Potential beneficial effect to listed species because of the express requirement for environmental documentation.
CVP Use Power (Existing Contract) or Project Use Power (Proposed Contract)	Assumes the U.S. will furnish the CCWD with appropriate CVP use power to operate necessary facilities for conveying CVP or Los Vaqueros water rights water, and that the U.S. can request the CCWD utilize particular points of diversion, subject to agreement and certain provisions.	Same as Existing Contract.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.
Adjustments (Existing Contract) or Application of Payment and Adjustments (Proposed Contract)	Assumes refund of overpayment after satisfaction of any accrued indebtedness upon contractor request.	Same as Existing Contract, with minor changes associated with methods described for overpayment including requirement for \$1,000 or greater overpayment for refund.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor financial/administrative change only.
Temporary Reduction – Return Flows	Assumes the U.S. reserves right to return-flows, seepage, and waste that escapes or is discharged beyond contractor boundaries; assumes temporary reductions for operation, maintenance, and rehabilitation of facilities; makes express existing obligation of the U.S. to make CVP water available.	Same as Existing Contract, except that references Contracting Officer as CVP operator, in lieu of United States; excludes non-Project water acquired by CCWD from carriage water costs.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor financial/administrative change only.
Water Shortage and Apportionment (Existing Contract) or Constraints on the Availability of Water (Proposed Contract)	Assumes obligation of the U.S. to make full supplies of CVP water available; no liability of the U.S. for shortages from specified causes; provides mechanism for apportionment of shortages among existing contractors; no reduction to M&I water unless and until reductions also imposed on irrigation users to prevent undue hardship; defines quantities of CVP water that can legally be withheld from CCWD under regulatory restriction, under water shortage, and under water shortage emergency scenarios.	Assumes obligation of the Contracting Officer to utilize all reasonable means to guard against a condition of shortage; no liability of the U.S. for shortages from specified causes; if shortage occurs, Project Water will be allocated in accordance with the existing Project M&I Water Shortage Policy. CCWD has proposed to maintain the shortage provisions from the Existing Contract.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor administrative change only.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Existing or Acquired Water or Water Rights	Assumes contract provisions not applicable to non-CVP water or water rights, except as specifically provided.	Same as Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>
Quality of Water	Assumes operation and maintenance of CVP facilities to enable the U.S. to deliver water in accordance with existing statutory quality standards; no warranty of quality; U.S. not under obligation to furnish water treatment facilities to better the quality of CVP water; no warranty of quality.	Substantially same as Existing Contract, with the following additional provision: O&M of Project Facilities will be performed in such a manner as to maintain the quality of raw water.	<p><input type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input type="checkbox"/> No Effect/ <input checked="" type="checkbox"/> Effect on Listed Species</p> <p>Potential beneficial effect on listed species if water quality improves or is maintained.</p>
Water and Air Pollution Control	Assumes that CVP will operate in accordance with all applicable water and air pollution laws and regulations and obtain all required permits or licenses.	Same as Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>
Operation and Maintenance of Project Works (Existing Contract) or Operation and Maintenance of the Project Works by the Contractor (Proposed Contract)	Assumes the CCWD will operate and maintain facilities at their cost, in compliance with Reclamation laws and contract terms; Contracting Officer may periodically review Project Works O&M to assess facilities; if O&M on all or any part of Project Works is insufficient, the U.S. may take back possession and the O&M of said Work(s) at the CCWD's expense; changes to existing Project Works requires prior written consent of Contracting Officer.	Substantially the same as the Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No effect.</p>
Conveyance of Non-CVP Water (Existing Contract) or Water Acquired by the Contractor Other Than From the United States (Proposed Contract)	Assumes the CCWD may use Project Works to convey non-CVP water, under certain conditions.	Similar to Existing Contract, but applicable conditions differ. Assumes that water or water rights now owned or later acquired by CCWD other than from the U.S. may be stored, conveyed, and/or diverted through Project facilities, subject to environmental documentation, with Contracting Officer's approval, if certain conditions are met. This does not apply to Los Vaqueros water rights water.	<p><input checked="" type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor financial/administrative change only.</p>

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
District to Pay Certain Miscellaneous Costs Relating to Project Works (Existing Contract) or Contractor to Pay Certain Miscellaneous Costs (Proposed Contract)	Assumes the CCWD will repay specific direct costs and a percentage of direct costs for administrative and general overhead to the U.S., in accordance with Reclamation policy and procedures.	Substantially same as Existing Contract, with the following exceptions: Assumes the CCWD will also repay specific indirect costs to the U.S., in accordance with Reclamation policy and procedures. Deletes percentage payment for administrative and general overhead costs.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species Minor financial/administrative change only.
Water Conservation	Assumes compliance with conservation programs established by Reclamation and the state; establishes reporting and evaluation requirements.	Similar to Existing contract, but describes requirements for water conservation and efficiency program in more detail, assumes that if M&I amount delivered equals or exceeds 2,000 AF annually, CCWD will implement Best Management Practices; extends revision period for water conservation plans from 3 to 5 year intervals.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species Minor financial/administrative change only.
Emergency Reserve Fund	Assumes the CCWD will accumulate and maintain a reserve fund for payment of O&M costs incurred during emergency circumstances; establishes rules for maintaining and using reserve fund.	No similar provision.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species Minor financial/administrative change only.
Transfer of Title to Project Works	Assumes all rights, title and interest in and to the relevant Project Work(s) will be transferred to CCWD upon repayment of all costs, pending authorization by Congress.	Same as Existing Contract.	<input type="checkbox"/> Financial Effect <input type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species No substantive change.
Performance of Work with Contributed Funds	Assumes the Contracting Office may accept CCWD funds to finance authorized construction or O&M work on CVP facilities not specifically provided for and for which funds may not be available, subject to certain provisions and upon approval.	Same as Existing Contract.	<input type="checkbox"/> Financial Effect <input type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species No substantive change.
General Obligation—Benefits Conditioned Upon Payment	Assumes that CCWD has an obligation to pay the U.S. as provided in this contract; payment of Charges must occur before CCWD can receive benefits (i.e., CVP water) under the contract.	Substantially same as Existing Contract, with the following addition: Assumes no requirement for contractor to levy in advance.	<input checked="" type="checkbox"/> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ __ Effect on Listed Species Minor financial/administrative change only.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Compliance with Reclamation Laws	Assumes contract implementation will comply with all provisions of Reclamation law.	Omitted; replaced with "Federal Laws" provision, below.	<p><input type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor administrative change only.</p>
Federal Laws	No similar provision.	Assumes CCWD will comply with this Contract unless and until relief from Federal law or regulation is granted by a court; by entering into the Contract, CCWD does not waive its right to contest it.	<p><input type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor administrative change only.</p>
Books, Records, and Reports	Assumes that CCWD will establish and maintain accounts and other books and records pertaining to contract administration, provide reports as needed to the Contracting Officer; each party will make their administrative record available for review by the other party.	Assumes same record keeping requirements as Existing Contract; clarifies that only contract-related records will be requested and requires copies to go to Operating Non-Federal Entity.	<p><input type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor administrative change only.</p>
Contingent on Appropriation or Allotment of Funds	Expenditure or advance of any money or the performance of any obligation of the U.S. is contingent upon appropriation or allotment of funds; U.S. is not liable if funds are not appropriated or allocated.	Same as Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>
Rules, Regulations, and Determinations	Delivery of water or use of Federal facilities is subject to Reclamation law; Contracting Officer has the right to make necessary determinations to administer the contract within existing provisions, rules, and laws.	See "Rules and Regulations" and "Opinions and Determinations" Provisions, below.	<p><input type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor administrative change only.</p>
Rules and Regulations	See "Rules, Regulations, and Determinations," above.	Same as Existing Contract (Delivery of M&I Water or use of Federal facilities is subject to Reclamation law.)	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Opinions and Determinations	See "Rules, Regulations, and Determinations," above.	Substantially same as Existing Contract (Contracting Officer has the right to make necessary determinations to administer the contract within existing provisions, rules, and laws.) Assumes the parties to this Contract reserve the right to seek relief from and appropriate adjustment for arbitrary, capricious, or unreasonable opinion or determination in a timely manner.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor administrative change only.
Coordination and Cooperation	No similar provision.	Assumes that coordination and cooperation between Contracting Officer and users should be implemented to improve the operation and management of the Project. Provides mechanism for developing coordination process. Parties retain exclusive decision-making authority for determinations by that party.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor administrative change only.
Officials Not to Benefit	Officials are not to benefit from this contract other than as would a water user or landowner in the CCWD.	Same as Existing Contract.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.
Notices	Establishes methods to notice, demand, or request on behalf of the CCWD.	Same as Existing Contract.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.
Assignment Limited	Assumes that CVP will operate in accordance with existing rules.	Assumes substantially same as Existing Contract.	<u> </u> Financial Effect <u> </u> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species No substantive change.
Severability	No similar provision.	Assumes mechanism to address correction of provision found to be invalid upon legal challenge.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor administrative change only.
Resolution of Disputes	No similar provision.	Assumes a dispute resolution process.	<u> </u> Financial Effect <input checked="" type="checkbox"/> Administrative Effect <input checked="" type="checkbox"/> No Effect/ <u> </u> Effect on Listed Species Minor administrative change only.

Table A-1. Summary of Contract Provisions for the CCWD Proposed Long Term Water Service Contract, Contra Costa County, California (from North State Resources, Inc., May 2004)

Provision	Existing Amendatory Contract (1994 – 2010)	Federal Action Proposed Long-Term Water Service Contract Renewal	Effects Analysis
Equal Opportunity	Assumes CCWD will operate in accordance with existing rules, regulations, or orders regarding equal opportunity; establishes sanctions or remedies to be invoked in the event of non-compliance.	Same as Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>
Charges for Delinquent Payments	Establishes procedures and penalties for account delinquency.	Same as Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>
Compliance with Civil Rights Laws and Regulations	Assumes CCWD will operate in accordance with existing civil rights laws and regulations, as set forth in the contract.	Same as Existing Contract.	<p><input type="checkbox"/> Financial Effect</p> <p><input type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>No substantive change.</p>
Privacy Act Compliance	Assumes CCWD will comply with the Privacy Act of 1974, as set forth in the contract.	Omitted.	<p><input type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor administrative change only.</p>
Confirmation of Contract	Assumes required validation of contract under state law.	Assumes required validation of contract under state law; CCWD will supply the U.S. with pertinent records.	<p><input checked="" type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor financial/administrative change only.</p>
Changes in District's Organization (Existing Contract) or Changes in Contractor's Service Area (Proposed Contract)	Assumes that while this contract is in effect, no change may be made to the CCWD organization except upon written consent of the Contracting Officer to ensure that obligations are met and compliance with certain provisions of Reclamation law.	Assumes that while this contract is in effect, no change may be made to the CCWD service area except upon written consent of the Contracting Officer; establishes methods for processing such a request.	<p><input checked="" type="checkbox"/> Financial Effect</p> <p><input checked="" type="checkbox"/> Administrative Effect</p> <p><input checked="" type="checkbox"/> No Effect/ <input type="checkbox"/> Effect on Listed Species</p> <p>Minor financial/administrative change only.</p>

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Central Valley Project, California

LONG-TERM RENEWAL CONTRACT BETWEEN THE UNITED STATES
AND
CONTRA COSTA WATER DISTRICT
PROVIDING FOR PROJECT WATER SERVICE
AND FOR FACILITIES REPAYMENT

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Exhibit A - Map of Contractor's Service Area

Exhibit B - Rates and Charges

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4 UNITED STATES
5 DEPARTMENT OF THE INTERIOR
6 BUREAU OF RECLAMATION
7 Central Valley Project, California

8 LONG-TERM RENEWAL CONTRACT BETWEEN THE UNITED STATES
9 AND
10 CONTRA COSTA WATER DISTRICT
11 PROVIDING FOR PROJECT WATER SERVICE
12 AND FOR FACILITIES REPAYMENT

13 THIS CONTRACT, made this _____ day of _____, 2005, in
14 pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and acts amendatory or
15 supplementary thereto, including, but not limited to, the Acts of August 26, 1937 (50 Stat. 844),
16 as amended and supplemented, August 4, 1939 (53 Stat. 1187), as amended and supplemented,
17 July 2, 1956 (70 Stat. 483), June 21, 1963 (77 Stat. 68), October 12, 1982 (96 Stat. 1263),
18 October 27, 1986 (100 Stat. 3050), as amended, and Title XXXIV of the Act of October 30, 1992
19 (106 Stat. 4706), all collectively hereinafter referred to as Federal Reclamation law, between
20 THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, and
21 CONTRA COSTA WATER DISTRICT, hereinafter referred to as the Contractor, a public
22 agency of the State of California, duly organized, existing, and acting pursuant to the laws
23 thereof;

24 WITNESSETH, That:

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EXPLANATORY RECITALS

[1st] WHEREAS, the United States has constructed and is operating the Central Valley Project, (Project) California, for diversion, storage, carriage, distribution and beneficial use, for flood control, irrigation, municipal, domestic, industrial, fish and wildlife mitigation, protection and restoration, generation and distribution of electric energy, salinity control, navigation and other beneficial uses, of waters of the Sacramento River, the American River, the Trinity River, and the San Joaquin River and their tributaries; and

[2nd] WHEREAS, the Contractor has constructed the Los Vaqueros Project, that is intended to exclusively serve the Contractor to assist in attaining its goals of providing high quality water to the Contractor customers, while also providing reliability to the Contractor’s existing contract water supply during emergencies, droughts or other water shortages; and

[2.1] WHEREAS, it is necessary for the Contractor and the United States to agree on how the Los Vaqueros Project will be utilized in conjunction with Project Water and Project facilities; and

[3rd] WHEREAS, the rights to Project Water were acquired by the United States pursuant to California law for operation of the Project; and

[4th] WHEREAS, the Contractor and the United States entered into Contract No. I75r-3401, on September 18, 1951, which established terms for the delivery to the Contractor of Project Water and for construction and repayment of certain facilities. This contract was amended on November 9, 1970, April 26 1973, May 26, 1994 (hereinafter referred to as Existing Contract), and February 7, 2000.

[4.1] WHEREAS, the United States and the Contractor executed Memorandum of Agreement No. 14-06-200-6072A dated June 28, 1972, and subsequent Amendment 1 dated

48 May 15, 1995, that requires the Contractor to operate and maintain the Contra Costa Canal
49 System and Contra Loma Dam and Reservoir; and

50 [5th] WHEREAS, the United States and the Contractor have, pursuant to
51 Subsection 3404 (c) (3) of the Central Valley Project Improvement Act (CVPIA), subsequently
52 entered into a binding agreement, identified as Binding Agreement No. I75r-3401-BA, and
53 Supplemental Agreement No. I75r-3401-SA, which sets out the terms pursuant to which the
54 Contractor agreed to renew the Existing Contract before its expiration date after completion of a
55 programmatic environmental impact statement (PEIS) and other appropriate environmental
56 documentation and negotiation of a renewal contract, and which also sets out the consequences
57 of a subsequent decision not to renew; and

58 [6th] WHEREAS, Section 3404(c) of the CVPIA provides for long-term renewal of the
59 Existing Contract following completion of appropriate environmental documentation, including a
60 PEIS pursuant to the National Environmental Policy Act (NEPA) analyzing the direct and
61 indirect impacts and benefits of implementing the CVPIA and the potential renewal of all
62 existing contracts for Project Water; and

63 [7th] WHEREAS, the United States has completed the PEIS and all other appropriate
64 environmental review necessary to provide for long-term renewal of the Existing Contract; and

65 [8th] WHEREAS, the Contractor has requested the long-term renewal of the Existing
66 Contract, pursuant to the terms of the Existing Contract, Federal Reclamation law, and the laws
67 of the State of California, for water service from the Project; and

68 [9th] WHEREAS, the United States has determined that the Contractor has fulfilled all
69 of its obligations under the Existing Contract; and

70 [10th] WHEREAS, the Contractor has demonstrated to the satisfaction of the
71 Contracting Officer that the Contractor has utilized the Project Water supplies available to it for
72 reasonable and beneficial use and/or has demonstrated projected future demand for water use
73 such that the Contractor has the capability and expects to utilize fully for reasonable and
74 beneficial use the quantity of Project Water to be made available to it pursuant to this Contract;
75 and

76 [11th] WHEREAS, water obtained from the Project has been relied upon by urban areas
77 within California for more than 50 years, and is considered by the Contractor as an essential
78 portion of its water supply; and

79 [12th] WHEREAS, the economies of regions within the Project, including the
80 Contractor's, depend upon the continued availability of water, including water service from the
81 Project; and

82 [13th] WHEREAS, in the CALFED Programmatic Record of Decision, dated August 28,
83 2000, the United States and the State of California adopted a general target of continuously
84 improving Delta water quality for all uses. The CALFED Agencies' target for providing safe,
85 reliable, and affordable drinking water in a cost-effective way, is to achieve either: (a) average
86 concentrations at Clifton Forebay and other southern and central Delta drinking water intakes of
87 50 ug/L bromide and 3.0 mg/L total organic carbon, or (b) an equivalent level of public health
88 protection using a cost-effective combination of alternative source waters, source control and
89 treatment technologies; and

90 [14th] WHEREAS, the Secretary intends through coordination, cooperation, and
91 partnerships to pursue measures to improve water supply, water quality, and reliability of the
92 Project for all Project purposes; and

93 [15th] WHEREAS, the mutual goals of the United States and the Contractor include: to
94 provide for reliable Project Water supplies; to control costs of those supplies; to achieve
95 repayment of the Project as required by law; to guard reasonably against Project Water
96 shortages; to achieve a reasonable balance among competing demands for use of Project Water;
97 and to comply with all applicable environmental statutes, all consistent with the legal obligations
98 of the United States relative to the Project; and

99 [16th] WHEREAS, the parties intend by this Contract to develop a more cooperative
100 relationship in order to achieve their mutual goals; and

101 [17th] WHEREAS, the United States and the Contractor are willing to enter into this
102 Contract pursuant to Federal Reclamation law on the terms and conditions set forth below;

103 NOW, THEREFORE, in consideration of the mutual and dependent covenants herein
104 contained, it is hereby mutually agreed by the parties hereto as follows:

105 DEFINITIONS

106 1. When used herein unless otherwise distinctly expressed, or manifestly
107 incompatible with the intent of the parties as expressed in this Contract, the term:

108 (a) “Calendar Year” shall mean the period January 1 through December 31,
109 both dates inclusive;

110 (b) “Charges” shall mean the payments required by Federal Reclamation law
111 in addition to the Rates and Tiered Pricing Component specified in this Contract as determined
112 annually by the Contracting Officer pursuant to this Contract;

113 (c) “Condition of Shortage” shall mean a condition respecting the Project
114 during any Year such that the Contracting Officer is unable to deliver sufficient water to meet the
115 Contract Total;

116 (c.1) “Contra Costa Canal System” shall mean the Contra Costa Canal,
117 including the intake channel from Rock Slough, Clayton, and Ygnacio Relift Canals and
118 pumping plants, the Martinez Reservoir and Pumping Plants 1, 2, 3, and 4, and such other
119 facilities as may be authorized by Congress from time to time for rehabilitation or replacement
120 thereof;

121 (c.2) “Contra Loma Dam and Reservoir” shall mean the dam, pumping plant,
122 and reservoir constructed as an addition to the Contra Costa Canal System;

123 (d) “Contracting Officer” shall mean the Secretary of the Interior’s duly
124 authorized representative acting pursuant to this Contract or applicable Federal Reclamation law
125 or regulation;

126 (e) “Contract Total” shall mean the maximum amount of water to which the
127 Contractor is entitled under subdivision (a) of Article 3 of this Contract;

128 (f) “Contractor's Service Area” shall mean the area to which the Contractor is
129 permitted to provide Project Water under this Contract as described in Exhibit “A” attached
130 hereto, which may be modified from time to time in accordance with Article 35 of this Contract
131 without amendment of this Contract;

132 (g) “CVPIA” shall mean the Central Valley Project Improvement Act, Title
133 XXXIV of the Act of October 30, 1992 (106 Stat. 4706);

134 (h-i) Omitted

135 (j) “Full Cost Rate” shall mean an annual rate, as determined by the
136 Contracting Officer that shall amortize the expenditures for construction properly allocable to the
137 Project irrigation or M&I functions, as appropriate, of facilities in service including all O&M
138 deficits funded, less payments, over such periods as may be required under Federal Reclamation

139 law, or applicable contract provisions. Interest will accrue on both the construction expenditures
140 and funded O&M deficits from October 12, 1982, on costs outstanding at that date, or from the
141 date incurred in the case of costs arising subsequent to October 12, 1982, and shall be calculated
142 in accordance with subsections 202(3)(B) and (3)(C) of the RRA. The Full Cost Rate includes
143 actual operation, maintenance, and replacement costs consistent with Section 426.2 of the Rules
144 and Regulations for the RRA;

145 (k - 1) Omitted;

146 (m) "Irrigation Water" shall mean water made available from the Project that
147 is used primarily in the production of agricultural crops or livestock, including domestic use
148 incidental thereto, and watering of livestock;

149 (n) Omitted;

150 (n.1) "Lateral Distribution System" shall mean the water conveyance system
151 constructed by the United States which consists of pipelines extending to Contractor's water
152 users from the Contra Costa Canal at milepost 5.3, 6.2, 7.1, 7.3, 9.1, 14.0, 25.6, 36.6, and Y-2-6;

153 (n.2) "Los Vaqueros" shall mean the Los Vaqueros Project consisting of a
154 storage reservoir and associated facilities constructed by the Contractor on property which is
155 owned by the Contractor, and in which the United States has no legal interest, to store and
156 convey Los Vaqueros Water Rights Water and Project Water as well as additional water that
157 may be acquired by the Contractor;

158 (n.3) "Los Vaqueros Water Rights Water" shall mean that water appropriated
159 pursuant to State Water Rights Application 20245 (Permit 20749), which is in addition to Project
160 Water;

161 (o) “Municipal and Industrial (M&I) Water” shall mean Project Water, other
162 than Irrigation Water, made available to the Contractor. M&I Water shall include water used for
163 human use and purposes such as the watering of landscaping or pasture for animals (e.g., horses)
164 which are kept for personal enjoyment or water delivered to landholdings operated in units of
165 less than five acres unless the Contractor establishes to the satisfaction of the Contracting Officer
166 that the use of water delivered to any such landholding is a use described in subdivision (m) of
167 this Article;

168 (p) “M&I Full Cost Water Rate” shall mean the Full Cost Rate (applicable to
169 the delivery of M&I Water;

170 (p.1) “New Facilities” shall mean the Short Cut Pipeline located between
171 Contra Costa Canal at milepost 25.70 and at milepost 47.77 and the Pump Units in Pumping
172 Plant 1, 2, 3, and 4 of the Contra Costa Canal System;

173 (1) “Pump Units” shall mean the pump, motor, motor controls, wiring,
174 structural supports and discharge control apparatus for pumping 100 cubic feet per second
175 (“cfs”) of water; and

176 (2) “Short Cut Pipeline” shall mean the Contra Costa Canal intake,
177 pipeline, pipeline appurtenances, Martinez Reservoir inlet;

178 (q) “Operation and Maintenance” or “O&M” shall mean normal and
179 reasonable care, control, operation, repair, replacement (other than capital replacement), and
180 maintenance of Project facilities;

181 (r) Omitted.

182 (s) “Project” shall mean the Central Valley Project owned by the United
183 States and managed by the Department of the Interior, Bureau of Reclamation;

184 (t) "Project Contractors" shall mean all parties who have water service
185 contracts for Project Water from the Project with the United States pursuant to Federal
186 Reclamation law;

187 (u) "Project Water" shall mean all water that is developed, diverted, stored, or
188 delivered by the Secretary in accordance with the statutes authorizing the Project and in
189 accordance with the terms and conditions of water rights acquired pursuant to California law;

190 (u.1) "Project Works" shall mean all those facilities defined in subsections (c.1),
191 (c.2), (n.1), and (p.1) of this Article;

192 (v) "Rates" shall mean the payments determined annually by the Contracting
193 Officer in accordance with the then current applicable water ratesetting policies for the Project,
194 as described in subdivision (a) of Article 7 of this Contract;

195 (w) "Recent Historic Average" shall mean the most recent five-year average of
196 the final forecast of Water Made Available to the Contractor pursuant to this Contract or its
197 preceding contract(s);

198 (x) "Secretary" shall mean the Secretary of the Interior, a duly appointed
199 successor, or an authorized representative acting pursuant to any authority of the Secretary and
200 through any agency of the Department of the Interior;

201 (y) "Tiered Pricing Component" shall be the incremental amount to be paid
202 for each acre-foot of Water Delivered as described in subdivision (j) of Article 7 of this Contract;

203 (z) "Water Delivered" or "Delivered Water" shall mean Project Water
204 diverted for use by the Contractor at the point(s) of delivery approved by the Contracting
205 Officer;

206 (aa) "Water Made Available" shall mean the estimated amount of Project
207 Water that can be delivered to the Contractor for the upcoming Year as declared by the
208 Contracting Officer, pursuant to subdivision (a) of Article 4 of this Contract;

209 (bb) "Water Scheduled" shall mean Project Water made available to the
210 Contractor for which times and quantities for delivery have been established by the Contractor
211 and Contracting Officer, pursuant to subdivision (b) of Article 4 of this Contract; and

212 (cc) "Year" shall mean the period from and including March 1 of each
213 Calendar Year through the last day of February of the following Calendar Year.

214 TERM OF CONTRACT

215 2. (a) This Contract shall be effective March 1, 2005, through February 28,
216 2045. This Contract when effective supersedes the Existing Contract. In the event the
217 Contractor wishes to renew this Contract beyond February 28, 2045, the Contractor shall submit
218 a request for renewal in writing to the Contracting Officer no later than two years prior to the
219 date this Contract expires.

220 (b) Omitted;

221 (c) This Contract shall be renewed for successive periods of up to 40 years
222 each, which periods shall be consistent with the then-existing Reclamation-wide policy, under
223 terms and conditions mutually agreeable to the parties and consistent with Federal and State law.
224 The Contractor shall be afforded the opportunity to comment to the Contracting Officer on the
225 proposed adoption and application of any revised policy applicable to the delivery of M&I Water
226 that would limit the term of any subsequent renewal contract with the Contractor for the
227 furnishing of M&I Water to less than 40 years.

228 (d) The Contracting Officer shall make a determination ten years after the
 229 date of execution of this Contract and every five years thereafter during the term of this Contract
 230 of whether a conversion of this Contract to a contract under subsection 9 (c)(1) of the
 231 Reclamation Project Act of 1939 can be accomplished. The Contracting Officer anticipates that
 232 during the term of this Contract, all authorized Project construction expected to occur will have
 233 occurred, and on that basis the Contracting Officer agrees upon such completion to allocate all
 234 costs that are properly assignable to the Contractor, and agrees further that, at any time after such
 235 allocation is made, and subject to satisfaction of the condition set out in this subdivision this
 236 Contract shall, at the request of the Contractor, be converted to a contract under said subsection
 237 (c)(1) of Section 9, is applicable of the Reclamation Project Act of 1939, subject to applicable
 238 Federal law and under stated terms and conditions mutually agreeable to the Contractor and the
 239 Contracting Officer. A condition for such conversion to occur shall be a determination by the
 240 Contracting Officer that, account being taken of the amount credited to return by the Contractor
 241 as provided for under Federal Reclamation law, the remaining amount of construction costs
 242 assignable for ultimate return by the Contractor can probably be repaid to the United States
 243 within the term of a contract under said subsection (c) (1) of Section 9. If the remaining amount
 244 of costs that are properly assignable to the Contractor cannot be determined during the term of
 245 this Contract, the Contracting Officer shall notify the Contractor, and provide the reason(s) why
 246 such a determination could not be made. Further, the Contracting Officer shall make such a
 247 determination as soon thereafter as possible so as to permit, upon request of the Contractor and
 248 satisfaction of the conditions set out above, conversion to a contract under said subsection (c)(1)
 249 of Section 9. In the event such determination of costs has not been made at a time which allows
 250 conversion of this Contract during the term of this Contract or the Contractor has not requested

251 conversion of this Contract within such term, the parties shall incorporate in any subsequent
252 renewal contract as described in subdivision (b) of this Article a provision that carries forth in
253 substantially identical terms the provisions of this subdivision.

254 WATER TO BE MADE AVAILABLE AND DELIVERED TO THE CONTRACTOR

255 3. (a) During each Year, consistent with all applicable State water rights,
256 permits, and licenses; Federal law; and subject to the provisions set forth in Articles 11 and 12 of
257 this Contract, the Contracting Officer shall make available for delivery to the Contractor 195,000
258 acre-feet of Project Water for M&I purposes. Water Delivered to the Contractor in accordance
259 with this subdivision shall be scheduled and paid for pursuant to the provisions of Articles 4 and
260 7 of this Contract.

261 (b) Because the capacity of the Project to deliver Project Water has been
262 constrained in recent years and may be constrained in the future due to many factors including
263 hydrologic conditions and implementation of Federal and State laws, the likelihood of the
264 Contractor actually receiving the amount of Project Water set out in subdivision (a) of this
265 Article in any given Year is uncertain. The Contracting Officer's most recent modeling
266 referenced in the PEIS projected that the Contract Total set forth in this Contract will not be
267 available to the Contractor in many years. During the most recent five years, the Recent Historic
268 Average of Water Made Available to the Contractor was 152,100 acre-feet. Nothing in
269 subdivision (b) of this Article shall affect the rights and obligations of the parties under any
270 provision of this Contract.

271 (c) The Contractor shall utilize the Project Water in accordance with all
272 applicable legal requirements.

273 (d) The Contractor shall make reasonable and beneficial use of all Project
 274 Water and other water furnished pursuant to subdivision (f) of this Article. Groundwater
 275 recharge programs (direct, indirect, or in lieu), groundwater banking programs, surface water
 276 storage programs, and other similar programs utilizing Project Water or other water furnished
 277 pursuant to this Contract conducted within the Contractor’s Service Area which are consistent
 278 with applicable State law and result in use consistent with Federal Reclamation law will be
 279 allowed; Provided, That any direct recharge program(s) is (are) described in the Contractor’s
 280 Water Conservation Plan submitted pursuant to Article 26 of this Contract; Provided, further,
 281 That such Water Conservation Plan demonstrates sufficient lawful uses exist in the Contractor’s
 282 Service Area so that using a long-term average, the quantity of Delivered Water is demonstrated
 283 to be reasonable for such uses and in compliance with Federal Reclamation law. Groundwater
 284 recharge programs, groundwater banking programs, surface water storage programs, and other
 285 similar programs utilizing Project Water or other water furnished pursuant to this Contract
 286 conducted outside the Contractor’s Service Area may be permitted upon written approval of the
 287 Contracting Officer, which approval will be based upon environmental documentation, Project
 288 Water rights, and Project operational concerns. The Contracting Officer will address such
 289 concerns in regulations, policies, or guidelines.

290 (e) The Contractor shall comply with requirements applicable to the
 291 Contractor in biological opinion(s) prepared as a result of a consultation regarding the execution
 292 of this Contract undertaken pursuant to Section 7 of the Endangered Species Act of 1973 (ESA),
 293 as amended, that are within the Contractor’s legal authority to implement. The Existing
 294 Contract, which evidences in excess of 50 years of diversions for irrigation and/or M&I purposes
 295 of the quantities of water provided in subdivision (a) of Article 3 of this Contract, will be

296 considered in developing an appropriate baseline for biological assessment(s) prepared pursuant
297 to the ESA, and any other needed environmental review. Nothing herein shall be construed to
298 prevent the Contractor from challenging or seeking judicial relief in a court of competent
299 jurisdiction with respect to any biological opinion or other environmental documentation referred
300 to in this Article.

301 (f) Following the declaration of Water Made Available under Article 4 of this
302 Contract, the Contracting Officer will make a determination whether Project Water, or other
303 water available to the Project, can be made available to the Contractor in addition to the Contract
304 Total under this Article during the Year without adversely impacting other Project Contractors.
305 At the request of the Contractor, the Contracting Officer will consult with the Contractor prior to
306 making such a determination. If the Contracting Officer determines that Project Water, or other
307 water available to the Project, can be made available to the Contractor, the Contracting Officer
308 will announce the availability of such water and shall so notify the Contractor as soon as
309 practical. The Contracting Officer will thereafter meet with the Contractor and other Project
310 Contractors capable of taking such water to determine the most equitable and efficient allocation
311 of such water. If the Contractor requests the delivery of any quantity of such water, the
312 Contracting Officer shall make such water available to the Contractor in accordance with
313 applicable statutes, regulations, guidelines, and policies.

314 (g) The Contractor may request permission to reschedule for use during the
315 subsequent Year some or all of the Water Made Available to the Contractor during the current
316 Year, referred to as “rescheduled water.” The Contractor may request permission to use during
317 the current Year, a quantity of Project Water which may be made available by the United States
318 to the Contractor during the subsequent Year referred to as “preuse.” The Contracting Officer’s

319 written approval may permit such uses in accordance with applicable statutes, regulations,
320 guidelines, and policies.

321 (h) The Contractor's right pursuant to Federal Reclamation law and applicable
322 State law to the reasonable and beneficial use of Water Delivered pursuant to this Contract
323 during the term thereof and any subsequent renewal contracts, as described in Article 2 of this
324 Contract, during the terms thereof shall not be disturbed so long as the Contractor shall fulfill all
325 of its obligations under this Contract and any renewals thereof. Nothing in the preceding
326 sentence shall affect the Contracting Officer's ability to impose shortages under Article 11 or
327 subdivision (b) of Article 12 of this Contract or applicable provisions of any subsequent renewal
328 contracts.

329 (i) Project Water furnished to the Contractor pursuant to this Contract may be
330 delivered for purposes other than those described in subdivision (o) of Article 1 of this Contract
331 upon written approval by the Contracting Officer in accordance with the terms and conditions of
332 such approval.

333 (j) The Contracting Officer shall make reasonable efforts to protect the water
334 rights necessary for the Project and to provide the water available under this Contract. The
335 Contracting Officer shall not object to participation by the Contractor, in the capacity and to the
336 extent permitted by law, in administrative proceedings related to the Project Water rights;
337 Provided, That the Contracting Officer retains the right to object to the substance of the
338 Contractor's position in such a proceeding; Provided further, That in such proceedings the
339 Contracting Officer shall recognize the Contractor has a legal right under the terms of this
340 Contract to use Project Water.

341 TIME FOR DELIVERY OF WATER

342 4. (a) On or about February 20 of each Calendar Year, the Contracting Officer
343 shall announce the Contracting Officer's expected declaration of the Water Made Available.
344 Such declaration will be expressed in terms of both Water Made Available and the Recent
345 Historic Average and will be updated monthly, and more frequently if necessary, based on then-
346 current operational and hydrologic conditions and a new declaration with changes, if any, to the
347 Water Made Available will be made. The Contracting Officer shall provide forecasts of Project
348 operations and the basis of the estimate, with relevant supporting information, upon the written
349 request of the Contractor. Concurrently with the declaration of the Water Made Available, the
350 Contracting Officer shall provide the Contractor with the updated Recent Historic Average.

351 (b) On or before each March 1 and at such other times as necessary, the
352 Contractor shall submit to the Contracting Officer a written schedule, satisfactory to the
353 Contracting Officer, showing the monthly quantities of Project Water to be delivered by the
354 United States to the Contractor pursuant to this Contract for the Year commencing on such
355 March 1. The Contracting Officer shall use all reasonable means to deliver Project Water
356 according to the approved schedule for the Year commencing on such March 1.

357 (c) The Contractor shall not schedule Project Water in excess of the quantity
358 of Project Water the Contractor intends to put to reasonable and beneficial use within the
359 Contractor's Service Area or to sell, transfer, or exchange pursuant to Article 9 of this Contract
360 during any Year.

361 (d) Subject to the conditions set forth in subdivision (a) of Article 3 of this
362 Contract, the United States shall deliver Project Water to the Contractor in accordance with the
363 initial schedule submitted by the Contractor pursuant to subdivision (b) of this Article, or any

364 written revision(s), satisfactory to the Contracting Officer, thereto submitted within a reasonable
365 time prior to the date(s) on which the requested change(s) is/are to be implemented.

366 POINT OF DIVERSION AND RESPONSIBILITY FOR DISTRIBUTION OF WATER

367 5. (a) Project Water scheduled pursuant to subdivision (b) of Article 4 of this
368 Contract shall be delivered to the Contractor at Rock Slough at the intake of Pumping Plant 1 of
369 the Contra Costa Canal System or in the Sacramento-San Joaquin Delta at the intake and any
370 additional point or points of delivery either on Project facilities or another location or locations
371 mutually agreed to in writing by the Contracting Officer and the Contractor. Such deliveries at
372 the Sacramento-San Joaquin Delta may be made at the intake to the Tracy Pumping Plant of the
373 Project at Old River, the intake of the State Water Project to Clifton Court at Old River and/or
374 the intake to Los Vaqueros at Old River. Los Vaqueros Water Rights Water shall be delivered
375 and/or diverted in the Sacramento-San Joaquin Delta. Said point(s) of delivery and/or diversion
376 of Project Water and Los Vaqueros Water Rights Water shall be subject to change by written
377 agreements of the parties hereto: Provided, That such change(s) is/are consistent with the
378 applicable state water right permit(s) or license(s) as they may be amended or modified. The
379 United States shall not be obligated to construct additional facilities for the delivery and/or
380 diversion of water under this Contract.

381 (b) Omitted.

382 (c) The Contractor shall not deliver Project Water to land outside the
383 Contractor's Service Area unless approved in advance by the Contracting Officer.

384 (d) All Water Delivered to the Contractor pursuant to this Contract shall be
385 measured and recorded with equipment furnished, installed, operated, and maintained by the
386 United States, or the Contractor at the point or points of delivery established pursuant to

387 subdivision (a) of this Article. Upon the request of either party to this Contract, the Contracting
388 Officer or the Contractor shall investigate the accuracy of such measurements and shall take any
389 necessary steps to adjust any errors appearing therein. For any period of time when accurate
390 measurements have not been made, the Contracting Officer shall consult with the Contractor
391 prior to making a final determination of the quantity delivered for that period of time.

392 (e) The Contracting Officer shall not be responsible for the control, carriage,
393 handling, use, disposal, or distribution of Water Delivered to the Contractor pursuant to this
394 Contract beyond the delivery points specified in subdivision (a) of this Article. The Contractor
395 shall indemnify the United States, its officers, employees, agents, and assigns on account of
396 damage or claim of damage of any nature whatsoever for which there is legal responsibility,
397 including property damage, personal injury, or death arising out of or connected with the control,
398 carriage, handling, use, disposal, or distribution of such Water Delivered beyond such delivery
399 points, except for any damage or claim arising out of: (i) acts or omissions of the Contracting
400 Officer or any of its officers, employees, agents, or assigns, with the intent of creating the
401 situation resulting in any damage or claim; (ii) willful misconduct of the Contracting Officer or
402 any of its officers, employees, agents, or assigns; (iii) negligence of the Contracting Officer or
403 any of its officers, employees, agents, or assigns; or (iv) damage or claims resulting from a
404 malfunction of facilities owned and/or operated by the United States; Provided, That the
405 Contractor is not the entity that owned or operated the malfunctioning facility(ies) from which
406 the damage claim arose.

407 (f) Water diverted by the Contractor pursuant to this Contract shall be
408 measured and recorded by the Contractor for each of the points set forth below through
409 measuring and recording devices, acceptable to the Contracting Officer: Provided, The parties

410 thereto, may agree in writing that such points and/or method of water measurement may be
411 changed or added to. Except for Rock Slough at the intake of Pumping Plant 1, the Contractor
412 shall O&M each of the measuring and recording devices at no cost to the United States. The
413 Contractor shall install all measuring and recording devices:

414 (1) At the intake to Pumping Plant 1 of the Contra Costa Canal
415 System;

416 (2) At the Los Vaqueros intake in Old River;

417 (3) At the intake to the Los Vaqueros storage reservoir; and

418 (4) At the point at which the Los Vaqueros Water Rights Water and
419 Project Water diverted from other than Rock Slough are introduced into the Contra Costa Canal
420 System from Los Vaqueros;

421 (g) The Contractor shall measure or compute and record daily, or at such
422 other intervals as may be agreed upon in writing by the parties, and provide to the United States
423 on or before the 20th day of each month following the month in which the measurement or
424 computation was made the rates and quantities associated with the following:

425 (1) Diversion of Project Water at Rock Slough;

426 (2) Diversion of Project Water from Old River for direct use;

427 (3) Diversion of Los Vaqueros Water Rights Water to storage in Los
428 Vaqueros storage reservoir;

429 (4) Diversion of Project Water to storage in Los Vaqueros storage
430 reservoir;

431 (5) Diversion to storage in Contra Loma Dam and Reservoir;

432 (6) Withdrawal of Project Water from Los Vaqueros storage reservoir;

433 (7) Withdrawal of Los Vaqueros Water Rights Water from Los
434 Vaqueros storage reservoir;

435 (8) Withdrawal of water from Contra Loma Dam and Reservoir for
436 delivery to the East Bay Regional Park District pursuant to Contract No. 4-06-200-6023A, dated
437 September 18, 1972, as amended on November 29, 1977;

438 (9) Withdrawal of water from Contra Loma Dam and Reservoir for
439 purposes other than that specified in subdivision (g)(8) above; and

440 (10) Total M&I water distributed.

441 MEASUREMENT OF WATER WITHIN THE CONTRACTOR'S SERVICE AREA

442 6. (a) The Contractor has established a measuring program satisfactory to the
443 Contracting Officer. The Contractor shall ensure that all surface water delivered for M&I
444 purposes within the Contractor's Service Area is measured at each M&I service connection. The
445 water measuring devices or water measuring methods of comparable effectiveness must be
446 acceptable to the Contracting Officer. The Contractor shall be responsible for installing,
447 operating, and maintaining and repairing all such measuring devices and implementing all such
448 water measuring methods at no cost to the United States. The Contractor shall use the
449 information obtained from such water measuring devices or water measuring methods to ensure
450 its proper management of the water, to bill water users for water delivered by the Contractor;
451 and, if applicable, to record water delivered for M&I purposes by customer class as defined in
452 the Contractor's water conservation plan provided for in Article 26 of this Contract. Nothing
453 herein contained, however, shall preclude the Contractor from establishing and collecting any
454 charges, assessments, or other revenues authorized by California law. The Contractor shall

455 include a summary of all its annual surface water deliveries in the annual report described in
456 subdivision (c) of Article 26.

457 (b) To the extent the information has not otherwise been provided, upon
458 execution of this Contract, the Contractor shall provide to the Contracting Officer a written
459 report describing the measurement devices or water measuring methods being used or to be used
460 to implement subdivision (a) of this Article and identifying the M&I service connections or
461 alternative measurement programs approved by the Contracting Officer, at which such
462 measurement devices or water measuring methods are being used, and, if applicable, identifying
463 the locations at which such devices and/or methods are not yet being used including a time
464 schedule for implementation at such locations. The Contracting Officer shall advise the
465 Contractor in writing within 60 days as to the adequacy and necessary modifications, if any, of
466 the measuring devices or water measuring methods identified in the Contractor's report and if the
467 Contracting Officer does not respond in such time, they shall be deemed adequate. If the
468 Contracting Officer notifies the Contractor that the measuring devices or methods are
469 inadequate, the parties shall within 60 days following the Contracting Officer's response,
470 negotiate in good faith the earliest practicable date by which the Contractor shall modify said
471 measuring devices and/or measuring methods as required by the Contracting Officer to ensure
472 compliance with subdivision (a) of this Article.

473 (c) All new surface water delivery systems installed within the Contractor's
474 Service Area after the effective date of this Contract shall also comply with the measurement
475 provisions described in subdivision (a) of this Article.

476 (d) The Contractor shall inform the Contracting Officer and the State of
477 California in writing by April 30 of each Year of the monthly volume of surface water delivered
478 within the Contractor's Service Area during the previous Year.

479 (e) Omitted.

480 RATES AND METHOD OF PAYMENT FOR WATER

481 7. (a) The Contractor shall pay the United States as provided in this Article for
482 all Delivered Water at Rates, Charges, and the Tiered Pricing Component established in
483 accordance with: (i) the Secretary's then-existing Project ratesetting policy for M&I Water.
484 Such ratesetting policies shall be amended, modified, or superseded only through a public notice
485 and comment procedure; (ii) applicable Federal Reclamation law and associated rules and
486 regulations, or policies; and (iii) other applicable provisions of this Contract. Payments shall be
487 made by cash transaction, electronic funds transfer, or any other mechanism as may be agreed to
488 in writing by the Contractor and the Contracting Officer. The Rates, Charges, and Tiered Pricing
489 Component applicable to the Contractor upon execution of this Contract are set forth in Exhibit
490 "B," as may be revised annually.

491 (a.1) The payment to be made by the Contractor for Los Vaqueros Water Rights
492 Water and Project Water Made Available to it pursuant to this Contract shall be the applicable
493 Rates and Charges determined annually in accordance with the applicable Federal law and
494 associated regulations.

495 (b) The Contracting Officer shall notify the Contractor of the Rates, Charges,
496 and Tiered Pricing Component as follows:

497 (1) Prior to July 1 of each Calendar Year, the Contracting Officer shall
498 provide the Contractor an estimate of the Charges for Project Water that will be applied to the

499 period October 1, of the current Calendar Year, through September 30, of the following Calendar
500 Year, and the basis for such estimate. The Contractor shall be allowed not less than two months
501 to review and comment on such estimates. On or before September 15 of each Calendar Year,
502 the Contracting Officer shall notify the Contractor in writing of the Charges to be in effect during
503 the period October 1 of the current Calendar Year, through September 30, of the following
504 Calendar Year, and such notification shall revise Exhibit "B."

505 (2) Prior to October 1 of each Calendar Year, the Contracting Officer
506 shall make available to the Contractor an estimate of the Rates and Tiered Pricing Components
507 for Project Water for the following Year and the computations and cost allocations upon which
508 those Rates are based. The Contractor shall be allowed not less than two months to review and
509 comment on such computations and cost allocations. By December 31 of each Calendar Year,
510 the Contracting Officer shall provide the Contractor with the final Rates and Tiered Pricing
511 Components to be in effect for the upcoming Year, and such notification shall revise Exhibit
512 "B."

513 (c) At the time the Contractor submits the initial schedule for the delivery of
514 Project Water for each Year pursuant to subdivision (b) of Article 4 of this Contract, the
515 Contractor shall make an advance payment to the United States equal to the total amount payable
516 pursuant to the applicable Rate(s) set under subdivision (a) of this Article, for the Project Water
517 scheduled to be delivered pursuant to this Contract during the first two calendar months of the
518 Year. Before the end of the first month and before the end of each calendar month thereafter, the
519 Contractor shall make an advance payment to the United States, at the Rate(s) set under
520 subdivision (a) of this Article, for the Water Scheduled to be delivered pursuant to this Contract
521 during the second month immediately following. Adjustments between advance payments for

522 Water Scheduled and amounts due for Water Delivered shall be made before the end of the
523 following month; Provided, That any revised schedule submitted by the Contractor pursuant to
524 Article 4 of this Contract which increases the amount of Water Delivered pursuant to this
525 Contract during any month shall be accompanied with appropriate advance payment, at the Rates
526 then in effect, to assure that Project Water is not delivered to the Contractor in advance of such
527 payment. In any month in which the quantity of Water Delivered to the Contractor pursuant to
528 this Contract equals the quantity of Water Scheduled and paid for by the Contractor, no
529 additional Project Water shall be delivered to the Contractor unless and until an advance
530 payment at the Rates then in effect for such additional Project Water is made. Final adjustment
531 between the advance payments for the Water Scheduled and payments for the quantities of Water
532 Delivered during each Year pursuant to this Contract shall be made as soon as practicable but no
533 later than April 30th of the following Year, or 60 days after the delivery of Project Water
534 rescheduled under subdivision (g) of Article 3 of this Contract if such water is not delivered by
535 the last day of February.

536 (d) The Contractor shall also make a payment in addition to the Rate(s) in
537 subdivision (c) of this Article to the United States for Water Delivered, at the Charges and the
538 appropriate Tiered Pricing Component then in effect, before the end of the month following the
539 month of delivery. The payments shall be consistent with the quantities of M&I Water Delivered
540 as shown in the water delivery report for the subject month prepared by the Contractor. The
541 water delivery report shall be deemed a bill for the payment of Charges and the applicable Tiered
542 Pricing Component for Water Delivered. Adjustment for overpayment or underpayment of
543 Charges shall be made through the adjustment of payments due to the United States for Charges

544 for the next month. Any amount to be paid for past due payment of Charges and the Tiered
545 Pricing Component shall be computed pursuant to Article 20 of this Contract.

546 (e) The Contractor shall pay for any Water Delivered under subdivision (a),
547 (f), or (g) of Article 3 of this Contract as determined by the Contracting Officer pursuant to
548 applicable statutes, associated regulations, any applicable provisions of guidelines or ratesetting
549 policies; Provided, That the Rates for Water Delivered under subdivision (f) of Article 3 of this
550 Contract shall be no more than the otherwise applicable Rates for M&I Water under subdivision
551 (a) of this Article.

552 (f) Payments to be made by the Contractor to the United States under this
553 Contract may be paid from any revenues available to the Contractor.

554 (g) All revenues received by the United States from the Contractor relating to
555 the delivery of Project Water or the delivery of non-Project water through Project facilities shall
556 be allocated and applied in accordance with Federal Reclamation law and the associated rules or
557 regulations, and the then-current Project ratesetting policies for M&I Water.

558 (h) The Contracting Officer shall keep its accounts pertaining to the
559 administration of the financial terms and conditions of its long-term contracts, in accordance
560 with applicable Federal standards, so as to reflect the application of Project costs and revenues.
561 The Contracting Officer shall, each Year upon request of the Contractor, provide to the
562 Contractor a detailed accounting of all Project and Contractor expense allocations, the
563 disposition of all Project and Contractor revenues, and a summary of all water delivery
564 information. The Contracting Officer and the Contractor shall enter into good faith negotiations
565 to resolve any discrepancies or disputes relating to accountings, reports, or information.

566 (i) The parties acknowledge and agree that the efficient administration of this
567 Contract is their mutual goal. Recognizing that experience has demonstrated that mechanisms,
568 policies, and procedures used for establishing Rates, Charges, and Tiered Pricing Components,
569 and/or for making and allocating payments, other than those set forth in this Article may be in
570 the mutual best interest of the parties, it is expressly agreed that the parties may enter into
571 agreements to modify the mechanisms, policies, and procedures for any of those purposes while
572 this Contract is in effect without amending this Contract.

573 (j) (1) Beginning at such time as deliveries of Project Water in a Year
574 exceed 80 percent of the Contract Total, then before the end of the month following the month of
575 delivery the Contractor shall make an additional payment to the United States equal to the
576 applicable Tiered Pricing Component. The Tiered Pricing Component for the amount of Water
577 Delivered in excess of 80 percent of the Contract Total, but less than or equal to 90 percent of the
578 Contract Total, shall equal one-half of the difference between the Rates established under
579 subdivision (a) of this Article and the M&I Full Cost Water Rate. The Tiered Pricing
580 Component for the amount of Water Delivered which exceeds 90 percent of the Contract Total
581 shall equal the difference between (i) the Rates established under subdivision (a) of this Article
582 and (ii) M&I Full Cost Water Rate.

583 (2) Omitted.

584 (3) For purposes of determining the applicability of the Tiered Pricing
585 Components pursuant to this Article, Water Delivered shall include Project Water that the
586 Contractor transfers to others but shall not include Project Water transferred to the Contractor,
587 nor shall it include the additional water provided to the Contractor under the provisions of
588 subdivision (f) of Article 3 of this Contract.

589 (4) The Tiered Pricing Component does not apply to Los Vaqueros
590 Water Rights Water.

591 (k) For the term of this Contract, Rates applied under the respective
592 ratesetting policies will be established to recover only reimbursable O&M (including any
593 deficits) and capital costs of the Project, as those terms are used in the then-current Project
594 ratesetting policies, and interest, where appropriate, except in instances where minimum Rates
595 are applicable in accordance with the relevant Project ratesetting policy. Changes of significance
596 in practices which implement the Contracting Officer's ratesetting policies will not be
597 implemented until the Contracting Officer has provided the Contractor an opportunity to discuss
598 the nature, need, and impact of the proposed change.

599 (l) Except as provided in subsections 3405(a)(1)(B) and 3405(f) of the
600 CVPIA, the Rates for Project Water transferred by the Contractor shall be the Contractor's Rates
601 adjusted upward or downward to reflect the changed costs, if any, incurred by the Contracting
602 Officer in the delivery of the transferred Project Water to the transferee's point of delivery in
603 accordance with the then applicable Project ratesetting policy.

604 (m) Omitted.

605 (n) With respect to the Rates for M&I water, the Contractor asserts that it is
606 not legally obligated to pay any Project deficits claimed by the United States to have accrued as
607 of the date of this Contract or deficit-related interest charges thereon. By entering into this
608 Contract, the Contractor does not waive any legal rights or remedies that it may have with
609 respect to such disputed issues. Notwithstanding the execution of this Contract and payments
610 made hereunder, the Contractor may challenge in the appropriate administrative or judicial
611 forums; (1) the existence, the computation, or imposition of any deficit charges accruing during

612 the term of the Existing Contract; (2) interest accruing on any such deficits; (3) the inclusion of
613 any such deficit charges or interest in the Rates; (4) the application by the United States of
614 payments made by the Contractor under its Existing Contract; and (5) the application of such
615 payments in the Rates. The Contracting Officer agrees that the Contractor shall be entitled to the
616 benefit of any administrative or judicial ruling in favor of any Project M&I contractor on any of
617 these issues, and credits for payments heretofore made, provided that the basis for such ruling is
618 applicable to the Contractor. [Pending Litigation]

619 REPAYMENT OF PROJECT WORKS

620 7.1. (a) Contra Costa Canal System. The remaining capitalized cost of the Contra
621 Costa Canal System on December 31, 2004, will be \$839,101. The Contractor shall fully repay
622 \$914,032.56, including interest at 2.5 percent per annum, by making six annual payments of
623 \$152,338.76, beginning January 1, 2005, and ending January 1, 2010.

624 (b) New Facilities. The remaining capitalized cost of the New Facilities on
625 December 31, 2004, will be \$1,446,457.07. The Contractor shall fully repay \$1,620,281.05, plus
626 interest at 3.342 percent per annum, by making six annual payments of \$270,046.84 beginning
627 January 1, 2005, and ending January 1, 2010.

628 (c) Contra Loma Dam and Reservoir. The remaining capitalized costs of the
629 Contra Loma Dam and Reservoir on December 31, 2004, will be \$1,689,039.16. The Contractor
630 shall fully repay \$1,879,257.85, including interest at 3.137 percent per annum, by making six
631 annual payments of \$313,209.63 beginning January 1, 2005, and ending January 1, 2010.

632 (d) The Contractor may, instead of making the payments provided for in
633 subdivisions (a), (b), and (c) above, at any time, make full payment of the sum then due and
634 owing on any or all of the facilities described in those subdivisions: Provided, That the

635 Contractor agrees that such accelerated repayment shall not exempt the Contractor from
636 compliance with the otherwise applicable ownership and full cost pricing provisions of Federal
637 Reclamation laws. If payment is made at any time in the year other than that specified in
638 subdivisions (a), (b), and (c) of this Article, the remaining payment balance as of such date will
639 be determined by the Contracting Officer and provided to the Contractor. Upon full repayment,
640 the Contractor shall have no further repayment obligations associated with the capitalized costs
641 specified in subdivisions (a), (b), and (c) of this Article.

642 NON-INTEREST BEARING OPERATION AND MAINTENANCE DEFICITS

643 8. The Contractor and the Contracting Officer concur that, as of the effective date of
644 this Contract, the Contractor has no non-interest bearing O&M deficits and shall have no further
645 liability therefore.

646 SALES, TRANSFERS, OR EXCHANGES OF WATER

647 9. (a) The right to receive Project Water provided for in this Contract may be
648 sold, transferred, or exchanged to others for reasonable and beneficial uses within the State of
649 California if such sale, transfer, or exchange is authorized by applicable Federal and State laws,
650 and applicable guidelines or regulations then in effect. No sale, transfer, or exchange of Project
651 Water under this Contract may take place without the prior written approval of the Contracting
652 Officer, except as provided for in subdivision (b) of this Article, and no such sales, transfers, or
653 exchanges shall be approved absent all appropriate environmental documentation, including but
654 not limited to, documents prepared pursuant to the NEPA and ESA. Such environmental
655 documentation should include, as appropriate, an analysis of groundwater impacts and economic
656 and social effects, including environmental justice, of the proposed water transfers on both the
657 transferor and transferee.

658 (b) In order to facilitate efficient water management by means of water
659 transfers of the type historically carried out among Project Contractors located within the same
660 geographical area and to allow the Contractor to participate in an accelerated water transfer
661 program during the term of this Contract, the Contracting Officer shall prepare, as appropriate,
662 all necessary environmental documentation including but not limited to documents prepared
663 pursuant to NEPA and ESA analyzing annual transfers within such geographical areas and the
664 Contracting Officer shall determine whether such transfers comply with applicable law.
665 Following the completion of the environmental documentation, such transfers addressed in such
666 documentation shall be conducted with advance notice to the Contracting Officer, but shall not
667 require prior written approval by the Contracting Officer. Such environmental documentation
668 and the Contracting Officer's compliance determination shall be reviewed every five years and
669 updated, as necessary, prior to the expiration of the then existing five-year period. All
670 subsequent environmental documentation shall include an alternative to evaluate not less than the
671 quantity of Project Water historically transferred within the same geographical area.

672 (c) For a water transfer to qualify under subdivision (b) of this Article, such
673 water transfer must: (i) be for irrigation purposes for lands irrigated within the previous three
674 years, for M&I use, groundwater recharge, groundwater banking, or similar groundwater
675 activities, surface water storage, or fish and wildlife resources; not lead to land conversion; and
676 be delivered to established cropland, wildlife refuges, groundwater basins or M&I use; (ii) occur
677 within a single Year; (iii) occur between a willing seller and a willing buyer; (iv) convey water
678 through existing facilities with no new construction or modifications to facilities and be between
679 existing Project Contractors and/or the Contractor and the United States, Department of the
680 Interior; and (v) comply with all applicable Federal, State, and local or tribal laws and

681 requirements imposed for protection of the environment and Indian Trust Assets, as defined
682 under Federal law.

683 PROJECT USE POWER

684 9.1. (a) During each Year, the United States shall furnish to the Contractor the
685 quantity of Project use power, not to exceed 164.8 kWh of energy for each acre-foot of Project
686 Water or Los Vaqueros Water Rights Water, required to operate facilities needed to pump
687 through the Contra Costa Canal System and Contra Loma Dam and Reservoir the full quantity of
688 Project Water scheduled and the Los Vaqueros Water Rights Water forecasted for delivery and
689 diversion to and by the Contractor for use within the Contractor's Service Area during that Year.
690 Such quantity of Project use power may be utilized at one or more of the following locations: the
691 Contra Costa Canal System; the intake of Los Vaqueros in Old River; Contra Loma Dam and
692 Reservoir; and such other points of diversion set forth in Article 5(a) as may be mutually agreed
693 upon. Project use power can only be used to convey Project Water or Los Vaqueros Water
694 Rights Water and shall be available to pump no more than 195,000 acre-feet annually.

695 (b) The United States may, at any time, request in writing that the Contractor
696 take delivery of some or all of the Project Water Made Available to the Contractor pursuant to
697 this Contract at the point of diversion for Los Vaqueros Water Rights Water in lieu of taking
698 delivery of such water at the intake of Pumping Plant 1 of the Contra Costa Canal System at
699 Rock Slough. If the Contractor agrees in writing to such a request, the United States shall
700 furnish to the Contractor during the term of the agreement, the quantity of Project use power
701 required to pump said Project Water and Los Vaqueros Water Rights Water from the point of
702 diversion for Los Vaqueros Water Rights Water to the Los Vaqueros transfer reservoir, not to
703 exceed 350 kWh of energy per acre-foot; Provided, That such a written agreement by the parties

704 for the delivery to and diversion at the point of diversion for Los Vaqueros Water Rights Water
705 of the full supply of Project Water Made Available under this Contract during the term of such
706 agreement shall not be implemented absent modification acceptable to the Contracting Officer of
707 applicable Sacramento-San Joaquin Delta water quality standards during the entire term of such
708 agreement.

709 (c) If the Contracting Officer and the Contractor are required under any
710 biological opinion issued by an agency of the United States to take delivery of some or all of the
711 Project Water Made Available to the Contractor pursuant to this Contract at the point of
712 diversion for Los Vaqueros Water Rights Water in lieu of taking delivery of such water at the
713 intake to Pumping Plant 1 of the Contra Costa Canal System at Rock Slough, the United States
714 shall furnish to the Contractor the quantity of Project use power required to pump said Project
715 water from the point of diversion for Los Vaqueros Water Rights Water to the Los Vaqueros
716 transfer reservoir, not to exceed 350 kWh of energy per acre-foot; Provided, That the quantity of
717 Project use power furnished pursuant to this subdivision shall not exceed the quantity of Project
718 use power needed to convey the quantity of Project Water diverted at the point of diversion of
719 Los Vaqueros Water Rights Water for immediate delivery through the Contra Costa Canal; and
720 Provided further, That the Contractor shall notify the Contracting Officer by March 1 of each
721 calendar year, in accordance with the written schedules submitted pursuant to Article 4(b), of the
722 projected quantity of Project Water which will be pumped with Project use power described in
723 this subdivision.

724 (d) The Contractor shall pay the United States for the quantity of Project use
725 power as set forth in subdivision (a), (b), and (c) above as a component of the water Rates
726 described in Article 7(a) of this Contract.

727 (e) The Contracting Officer may adjust the quantity of Project use power
728 required to pump each acre-foot of Project Water or Los Vaqueros Water Rights Water if the
729 Contracting Officer determines based on substantial evidence that the actual energy required for
730 such pumping is different from the quantity set forth in this Article. Such determinations and
731 adjustments by the Contracting Officer shall not require further amendment to this Contract.

732 APPLICATION OF PAYMENTS AND ADJUSTMENTS

733 10. (a) The amount of any overpayment by the Contractor of the Contractor's
734 O&M, interest, capital, and deficit (if any) obligations for the Year shall be applied first to any
735 current liabilities of the Contractor arising out of this Contract then due and payable.
736 Overpayments of more than \$1,000 shall be refunded at the Contractor's request. In lieu of a
737 refund, any amount of such overpayment, at the option of the Contractor, may be credited against
738 amounts to become due to the United States by the Contractor. With respect to overpayment,
739 such refund or adjustment shall constitute the sole remedy of the Contractor or anyone having or
740 claiming to have the right to the use of any of the Project Water supply provided for herein. All
741 credits and refunds of overpayments shall be made within 30 days of the Contracting Officer
742 obtaining direction as to how to credit or refund such overpayment in response to the notice to
743 the Contractor that it has finalized the accounts for the Year in which the overpayment was
744 made.

745 (b) All advances for miscellaneous costs incurred for work requested by the
746 Contractor pursuant to Article 25 of this Contract shall be adjusted to reflect the actual costs
747 when the work has been completed. If the advances exceed the actual costs incurred, the
748 difference will be refunded to the Contractor. If the actual costs exceed the Contractor's
749 advances, the Contractor will be billed for the additional costs pursuant to Article 25.

TEMPORARY REDUCTIONS--RETURN FLOWS

750 11. (a) Subject to: (i) the authorized purposes and priorities of the Project and the
751 requirements of Federal law and (ii) the obligations of the United States under existing contracts,
752 or renewals thereof, providing for water deliveries from the Project, the Contracting Officer shall
753 make all reasonable efforts to optimize Project Water deliveries to the Contractor as provided in
754 this Contract.

755 (b) The Contracting Officer may temporarily discontinue or reduce the
756 quantity of Water Delivered to the Contractor as herein provided for the purposes of
757 investigation, inspection, maintenance, repair, or replacement of any of the Project facilities or
758 any part thereof necessary for the delivery of Project Water to the Contractor, but so far as
759 feasible the Contracting Officer will give the Contractor due notice in advance of such temporary
760 discontinuance or reduction, except in case of emergency, in which case no notice need be given;
761 Provided, That the United States shall use its best efforts to avoid any discontinuance or
762 reduction in such service. Upon resumption of service after such reduction or discontinuance,
763 and if requested by the Contractor, the United States will, if possible, deliver the quantity of
764 Project Water which would have been delivered hereunder in the absence of such discontinuance
765 or reduction.

766 (c) The United States reserves the right to all seepage and return flow water
767 derived from Water Delivered to the Contractor hereunder which escapes or is discharged
768 beyond the Contractor's Service Area; Provided, That this shall not be construed as claiming for
769 the United States any right to seepage or return flow being put to reasonable and beneficial use
770 pursuant to this Contract within the Contractor's Service Area by the Contractor or those
771 claiming by, through, or under the Contractor.

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CONSTRAINTS ON THE AVAILABILITY OF WATER

12. (a) In its operation of the Project, the Contracting Officer will use all reasonable means to guard against a Condition of Shortage in the quantity of water to be made available to the Contractor pursuant to this Contract. In the event the Contracting Officer determines that a Condition of Shortage appears probable, the Contracting Officer will notify the Contractor of said determination as soon as practicable.

(b) If there is a Condition of Shortage because of errors in physical operations of the Project, drought, other physical causes beyond the control of the Contracting Officer or actions taken by the Contracting Officer to meet legal obligations then, except as provided in subdivision (a) of Article 18 of this Contract, no liability shall accrue against the United States or any of its officers, agents, or employees for any damage, direct or indirect, arising therefrom.

(c) Omitted.

(d) Project Water furnished under this Contract will be allocated in accordance with the then existing Project M&I Water Shortage Policy. Such policy shall be amended, modified, or superseded only through a public notice and comment procedure.

(e) By entering into this Contract, the Contractor does not waive any legal rights or remedies it may have to file or participate in any administrative or judicial proceeding contesting (i) the sufficiency of the manner in which any Project M&I Water Shortage Policy adopted after the effective date of this Contract was promulgated; (ii) the substance of such a policy; or (iii) the applicability of such a policy. By agreeing to the foregoing, the Contracting Officer does not waive any legal defenses or remedies that it may then have to assert in such a proceeding.

13. Omitted.

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RULES AND REGULATIONS

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14. The parties agree that the delivery of M&I Water or use of Federal facilities pursuant to this Contract is subject to the applicable provisions of Federal Reclamation law, and any applicable rules and regulations promulgated by the Secretary of the Interior under such law.

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WATER AND AIR POLLUTION CONTROL

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15. The Contractor, in carrying out this Contract, shall comply with all applicable water and air pollution laws and regulations of the United States and the State of California, and shall obtain all required permits or licenses from the appropriate Federal, State, or local authorities.

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QUALITY OF WATER

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16. (a) Project facilities used to deliver Project Water to the Contractor pursuant

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to this Contract shall be operated and maintained to enable the United States to deliver Project

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Water to the Contractor in accordance with the water quality standards specified in subsection

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2(b) of the Act of August 26, 1937 (50 Stat. 865), as added by Section 101 of the Act of

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October 27, 1986 (100 Stat. 3050) or other existing Federal laws. The United States is under no

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obligation to construct or furnish water treatment facilities to maintain or to improve the quality

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of Water Delivered to the Contractor pursuant to this Contract. The United States does not

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warrant the quality of Water Delivered to the Contractor pursuant to this Contract.

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(b) O&M of Project facilities shall be performed in such manner as is

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practicable to maintain the quality of raw water made available through such facilities at the

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highest level reasonably attainable as determined by the Contracting Officer. The Contractor

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shall be responsible for compliance with all State and Federal water quality standards applicable

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to surface and subsurface agricultural drainage discharges generated through the use of Federal

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or Contractor facilities or Project Water provided by the Contractor within the Contractor's

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Service Area.

820 WATER ACQUIRED BY THE CONTRACTOR
821 OTHER THAN FROM THE UNITED STATES

822 17. (a) Omitted.

823 (b) Water or water rights now owned or hereafter acquired by the Contractor,
824 other than from the United States may be stored, conveyed, and/or diverted through Project
825 facilities, other than Project Works, subject to the completion of appropriate environmental
826 documentation, with the approval of the Contracting Officer and the execution of any contract
827 determined by the Contracting Officer to be necessary, consistent with the following provisions:

828 (1) The Contractor may introduce non-Project water into Project
829 facilities, other than Project Works, subject to payment to the United States of an appropriate rate
830 as determined by the applicable Project ratesetting policy and the RRA, and the Project use
831 power policy, if such Project use power policy is applicable, each as amended, modified, or
832 superseded from time to time. In addition, if electrical power is required to pump non-Project
833 water through the facilities, the Contractor shall be responsible for obtaining the necessary power
834 and paying the necessary charges therefore.

835 (2) Delivery of such non-Project water in and through Project
836 facilities, other than Project Works, shall only be allowed to the extent such deliveries do not:
837 (i) interfere with other Project purposes as determined by the Contracting Officer; (ii) reduce the
838 quantity or quality of water available to other Project Contractors; (iii) interfere with the delivery
839 of contractual water entitlements to any other Project Contractors; or (iv) interfere with the
840 physical maintenance of the Project facilities.

841 (c) The Contractor may use Project Works to convey non-Project water,
842 subject to each of the following conditions:

843 (1) Such conveyance shall not interfere with deliveries of water
844 hereunder;

845 (2) Non-Project water for irrigation use shall be utilized in accordance
846 with the applicable acreage limitation provisions of the Federal Reclamation laws;

847 (3) Project use power shall not be used to pump or convey non-Project
848 water except as provided for in Article 9.1(a);

849 (4) The United States shall not incur any liability or unreimbursed cost
850 or expense thereby;

851 (5) The quantities of non-Project water introduced into and conveyed
852 through the Project Works shall be measured or otherwise determined by the Contractor in a
853 manner consistent with Article 6 of this Contract, acceptable to the Contracting Officer and at no
854 cost to the United States;

855 (6) The amount the Contractor is to pay to the United States for
856 conveying non-Project water through Project Works shall be determined annually by the United
857 States in accordance with the applicable provisions of Federal law, including but not limited to
858 the Warren Act of February 21, 1911 (36 Stat. 935), as amended and supplemented, associated
859 regulations, and the then-current applicable federal ratesetting policies.

860 (d) The United States shall not be responsible for control, care, or distribution
861 of the non-Project water before it is introduced into or after it is delivered from the Project
862 facilities. The Contractor hereby releases and agrees to defend and indemnify the United States
863 and their respective officers, agents, and employees, from any claim for damage to persons or
864 property, direct or indirect, resulting from the Contractor's or its officers', employees', agents',

865 or assigns', act(s) of (i) extracting or diverting non-Project water from any source, or (ii)
866 diverting such non-Project water into Project facilities.

867 (e) Diversion of such non-Project water into Project facilities shall be
868 consistent with all applicable laws, and if involving groundwater, consistent with any applicable
869 groundwater management plan for the area from which it was extracted.

870 (f) After Project purposes are met, as determined by the Contracting Officer,
871 the United States and the Contractor shall share priority to utilize the remaining capacity of the
872 facilities declared to be available by the Contracting Officer for storage, conveyance, and
873 transportation of non-Project water prior to any such remaining capacity being made available to
874 non-Project contractors.

875 OPINIONS AND DETERMINATIONS

876 18. (a) Where the terms of this Contract provide for actions to be based upon the
877 opinion or determination of either party to this Contract, said terms shall not be construed as
878 permitting such action to be predicated upon arbitrary, capricious, or unreasonable opinions or
879 determinations. Both parties, notwithstanding any other provisions of this Contract, expressly
880 reserve the right to seek relief from and appropriate adjustment for any such arbitrary, capricious,
881 or unreasonable opinion or determination. Each opinion or determination by either party shall be
882 provided in a timely manner. Nothing in subdivision (a) of Article 18 of this Contract is
883 intended to or shall affect or alter the standard of judicial review applicable under Federal law to
884 any opinion or determination implementing a specific provision of Federal law embodied in
885 statute or regulation.

886 (b) The Contracting Officer shall have the right to make determinations
887 necessary to administer this Contract that are consistent with the provisions of this Contract, the

888 laws of the United States and of the State of California, and the rules and regulations
889 promulgated by the Secretary of the Interior. Such determinations shall be made in consultation
890 with the Contractor to the extent reasonably practicable.

891 COORDINATION AND COOPERATION

892 19. (a) In order to further their mutual goals and objectives, the Contracting
893 Officer and the Contractor shall communicate, coordinate, and cooperate with each other, and
894 with other affected Project Contractors, in order to improve the operation and management of the
895 Project. The communication, coordination, and cooperation regarding operations and
896 management shall include, but not be limited to, any action which will or may materially affect
897 the quantity or quality of Project Water supply, the allocation of Project Water supply, and
898 Project financial matters including, but not limited to, budget issues. The communication,
899 coordination, and cooperation provided for hereunder shall extend to all provisions of this
900 Contract. Each party shall retain exclusive decision making authority for all actions, opinions,
901 and determinations to be made by the respective party.

902 (b) Within 120 days following the effective date of this Contract, the
903 Contractor, other affected Project Contractors, and the Contracting Officer shall arrange to meet
904 with interested Project Contractors to develop a mutually agreeable, written Project-wide
905 process, which may be amended as necessary separate and apart from this Contract. The goal of
906 this process shall be to provide, to the extent practicable, the means of mutual communication
907 and interaction regarding significant decisions concerning Project operation and management on
908 a real-time basis.

909 (c) In light of the factors referred to in subdivision (b) of Article 3 of this
910 Contract, it is the intent of the Secretary to improve water supply reliability. To carry out this
911 intent:

912 (1) The Contracting Officer will, at the request of the Contractor,
913 assist in the development of integrated resource management plans for the Contractor. Further,
914 the Contracting Officer will, as appropriate, seek authorizations for implementation of
915 partnerships to improve water supply, water quality, and reliability.

916 (2) The Secretary will, as appropriate, pursue program and project
917 implementation and authorization in coordination with Project Contractors to improve the water
918 supply, water quality, and reliability of the Project for all Project purposes.

919 (3) The Secretary will coordinate with Project Contractors and the
920 State of California to seek improved water resource management.

921 (4) The Secretary will coordinate actions of agencies within the
922 Department of the Interior that may impact the availability of water for Project purposes.

923 (5) The Contracting Officer shall periodically, but not less than
924 annually, hold division level meetings to discuss Project operations, division level water
925 management activities, and other issues as appropriate.

926 (d) Without limiting the contractual obligations of the Contracting Officer
927 under the other Articles of this Contract, nothing in this Article shall be construed to limit or
928 constrain the Contracting Officer's ability to communicate, coordinate, and cooperate with the
929 Contractor or other interested stakeholders or to make decisions in a timely fashion as needed to
930 protect health, safety, or the physical integrity of structures or facilities.

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CHARGES FOR DELINQUENT PAYMENTS

932 20. (a) The Contractor shall be subject to interest, administrative and penalty
933 charges on delinquent installments or payments. When a payment is not received by the due
934 date, the Contractor shall pay an interest charge for each day the payment is delinquent beyond
935 the due date. When a payment becomes sixty (60) days delinquent, the Contractor shall pay an
936 administrative charge to cover additional costs of billing and processing the delinquent payment.
937 When a payment is delinquent ninety (90) days or more, the Contractor shall pay an additional
938 penalty charge of six (6%) percent per year for each day the payment is delinquent beyond the
939 due date. Further, the Contractor shall pay any fees incurred for debt collection services
940 associated with a delinquent payment.

941 (b) The interest charge rate shall be the greater of the rate prescribed quarterly
942 in the Federal Register by the Department of the Treasury for application to overdue payments,
943 or the interest rate of one-half of one (0.5%) percent per month prescribed by Section 6 of the
944 Reclamation Project Act of 1939 (Public Law 76-260). The interest charge rate shall be
945 determined as of the due date and remain fixed for the duration of the delinquent period.

946 (c) When a partial payment on a delinquent account is received, the amount
947 received shall be applied, first to the penalty, second to the administrative charges, third to the
948 accrued interest, and finally to the overdue payment.

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EQUAL OPPORTUNITY

950 21. During the performance of this Contract, the Contractor agrees as follows:

951 (a) The Contractor will not discriminate against any employee or applicant for
952 employment because of race, color, religion, sex, or national origin. The Contractor will take
953 affirmative action to ensure that applicants are employed, and that employees are treated during
954 employment, without regard to their race, color, religion, sex, or national origin. Such action
955 shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer;
956 recruitment or recruitment advertising; layoff or termination, rates of payment or other forms of
957 compensation; and selection for training, including apprenticeship. The Contractor agrees to
958 post in conspicuous places, available to employees and applicants for employment, notices to be
959 provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

960 (b) The Contractor will, in all solicitations or advertisements for employees
961 placed by or on behalf of the Contractor, state that all qualified applicants will receive
962 consideration for employment without discrimination because of race, color, religion, sex, or
963 national origin.

964 (c) The Contractor will send to each labor union or representative of workers
965 with which it has a collective bargaining agreement or other contract or understanding, a notice,
966 to be provided by the Contracting Officer, advising the said labor union or workers'
967 representative of the Contractor's commitments under Section 202 of Executive Order 11246 of

968 September 24, 1965, and shall post copies of the notice in conspicuous places available to
969 employees and applicants for employment.

970 (d) The Contractor will comply with all provisions of Executive Order
971 No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders
972 of the Secretary of Labor.

973 (e) The Contractor will furnish all information and reports required by said
974 amended Executive Order and by the rules, regulations, and orders of the Secretary of Labor, or
975 pursuant thereto, and will permit access to its books, records, and accounts by the Contracting
976 Officer and the Secretary of Labor for purposes of investigation to ascertain compliance with
977 such rules, regulations, and orders.

978 (f) In the event of the Contractor's noncompliance with the nondiscrimination
979 clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be
980 canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared
981 ineligible for further Government contracts in accordance with procedures authorized in said
982 amended Executive Order, and such other sanctions may be imposed and remedies invoked as
983 provided in said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as
984 otherwise provided by law.

985 (g) The Contractor will include the provisions of paragraphs (a) through (g) in
986 every subcontract or purchase order unless exempted by the rules, regulations, or orders of the
987 Secretary of Labor issued pursuant to Section 204 of said amended Executive Order, so that such
988 provisions will be binding upon each subcontractor or vendor. The Contractor will take such
989 action with respect to any subcontract or purchase order as may be directed by the Secretary of
990 Labor as a means of enforcing such provisions, including sanctions for noncompliance:
991 Provided, however, That in the event the Contractor becomes involved in, or is threatened with,
992 litigation with a subcontractor or vendor as a result of such direction, the Contractor may request
993 the United States to enter into such litigation to protect the interests of the United States.

994 GENERAL OBLIGATION--BENEFITS CONDITIONED UPON PAYMENT

995 22. (a) The obligation of the Contractor to pay the United States as provided in
996 this Contract is a general obligation of the Contractor notwithstanding the manner in which the
997 obligation may be distributed among the Contractor's water users and notwithstanding the default
998 of individual water users in their obligations to the Contractor.

999 (b) The payment of charges becoming due hereunder is a condition precedent
1000 to receiving benefits under this Contract. The United States shall not make water available to the
1001 Contractor through Project facilities during any period in which the Contractor may be in arrears
1002 in the advance payment of water rates due the United States. The Contractor shall not furnish
1003 water made available pursuant to this Contract for lands or parties which are in arrears in the
1004 advance payment of water rates levied or established by the Contractor.

1005 (c) With respect to subdivision (b) of this Article, the Contractor shall have no
1006 obligation to require advance payment for water rates which it levies.

1007 COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS

1008 23. (a) The Contractor shall comply with Title VI of the Civil Rights Act of 1964
1009 (42 U.S.C. 2000d), Section 504 of the Rehabilitation Act of 1975 (P.L. 93-112, as amended), the
1010 Age Discrimination Act of 1975 (42 U.S.C. 6101, et seq.) and any other applicable civil rights
1011 laws, as well as with their respective implementing regulations and guidelines imposed by the
1012 U.S. Department of the Interior and/or Bureau of Reclamation.

1013 (b) These statutes require that no person in the United States shall, on the
1014 grounds of race, color, national origin, handicap, or age, be excluded from participation in, be
1015 denied the benefits of, or be otherwise subjected to discrimination under any program or activity
1016 receiving financial assistance from the Bureau of Reclamation. By executing this Contract, the
1017 Contractor agrees to immediately take any measures necessary to implement this obligation,
1018 including permitting officials of the United States to inspect premises, programs, and documents.

1019 (c) The Contractor makes this agreement in consideration of and for the
1020 purpose of obtaining any and all Federal grants, loans, contracts, property discounts, or other
1021 Federal financial assistance extended after the date hereof to the Contractor by the Bureau of
1022 Reclamation, including installment payments after such date on account of arrangements for
1023 Federal financial assistance which were approved before such date. The Contractor recognizes
1024 and agrees that such Federal assistance will be extended in reliance on the representations and
1025 agreements made in this Article, and that the United States reserves the right to seek judicial
1026 enforcement thereof.

24. Omitted.

1027 CONTRACTOR TO PAY CERTAIN MISCELLANEOUS COSTS
1028 RELATING TO PROJECT WORKS

1029 25. In addition to all other payments to be made by the Contractor pursuant to this
1030 Contract, the Contractor shall pay to the United States, within 60 days after receipt of a bill and
1031 detailed statement submitted by the Contracting Officer to the Contractor for such specific items
1032 of direct cost incurred by the United States for work requested by the Contractor associated with
1033 this Contract plus indirect costs in accordance with applicable Bureau of Reclamation policies
1034 and procedures. All such amounts referred to in this Article shall not exceed the amount agreed

1035 to in writing in advance by the Contractor. This Article shall not apply to costs for routine
1036 contract administration.

1037 WATER CONSERVATION

1038 26. (a) Prior to the delivery of water provided from or conveyed through
1039 Federally constructed or Federally financed facilities pursuant to this Contract, the Contractor
1040 shall be implementing an effective water conservation and efficiency program based on the
1041 Contractor's water conservation plan that has been determined by the Contracting Officer to meet
1042 the conservation and efficiency criteria for evaluating water conservation plans established under
1043 Federal law. The water conservation and efficiency program shall contain definite water
1044 conservation objectives, appropriate economically feasible water conservation measures, and
1045 time schedules for meeting those objectives. Continued Project Water delivery pursuant to this
1046 Contract shall be contingent upon the Contractor's continued implementation of such water
1047 conservation program. In the event the Contractor's water conservation plan or any revised water
1048 conservation plan completed pursuant to subdivision (d) of Article 26 of this Contract have not
1049 yet been determined by the Contracting Officer to meet such criteria, due to circumstances which
1050 the Contracting Officer determines are beyond the control of the Contractor, water deliveries
1051 shall be made under this Contract so long as the Contractor diligently works with the Contracting
1052 Officer to obtain such determination at the earliest practicable date, and thereafter the Contractor
1053 immediately begins implementing its water conservation and efficiency program in accordance
1054 with the time schedules therein.

1055 (b) Should the amount of M&I Water delivered pursuant to subdivision (a) of
1056 Article 3 of this Contract equal or exceed 2,000 acre-feet per Year, the Contractor shall
1057 implement the Best Management Practices identified by the time frames issued by the California

1058 Urban Water Conservation Council for such M&I Water unless any such practice is determined
1059 by the Contracting Officer to be inappropriate for the Contractor.

1060 (c) The Contractor shall submit to the Contracting Officer a report on the
1061 status of its implementation of the water conservation plan on the reporting dates specified in the
1062 then existing conservation and efficiency criteria established under Federal law.

1063 (d) At five-year intervals, the Contractor shall revise its water conservation
1064 plan to reflect the then current conservation and efficiency criteria for evaluating water
1065 conservation plans established under Federal law and submit such revised water management
1066 plan to the Contracting Officer for review and evaluation. The Contracting Officer will then
1067 determine if the water conservation plan meets Reclamation's then-current conservation and
1068 efficiency criteria for evaluating water conservation plans established under Federal law.

1069 (e) If the Contractor is engaged in direct groundwater recharge, such activity
1070 shall be described in the Contractor's water conservation plan.

1071 EXISTING OR ACQUIRED WATER OR WATER RIGHTS

1072 27. Except as specifically provided in Article 17 of this Contract, the provisions of
1073 this Contract shall not be applicable to or affect non-Project water or water rights now owned or
1074 hereafter acquired by the Contractor or any user of such water within the Contractor's Service
1075 Area. Any such water shall not be considered Project Water under this Contract. In addition,
1076 this Contract shall not be construed as limiting or curtailing any rights which the Contractor or
1077 any water user within the Contractor's Service Area acquires or has available under any other
1078 contract pursuant to Federal Reclamation law.

1079 OPERATIONS AND MAINTENANCE BY NON-FEDERAL OPERATING ENTITY

1080 28. (a) Omitted.

1081 OPERATION AND MAINTENANCE OF PROJECT WORKS
1082 BY THE CONTRACTOR

1083 28.1. (a) The Contractor, without expense to the United States, shall operate and
1084 maintain the Project Works in full compliance with the Federal Reclamation laws and the terms
1085 of this Contract. The provisions of this Article shall be implemented by the Memorandum of
1086 Agreement relating to Details of Transfer Operations and Maintenance of Contra Costa Canal
1087 System, dated June 28, 1972, and Amendment 1, dated May 15, 1995, and may be amended from
1088 time to time in such manner that Project Works shall be maintained in good and efficient
1089 condition. The Contractor shall use proper methods to assure the reasonable and beneficial use
1090 of Water Delivered by means of Project Works. At any time the Contracting Officer determines
1091 the O&M by the Contractor of one or more of the Project Works is insufficient, the United States
1092 may take back the O&M of all or any part of such Project Works and the Contractor hereby
1093 agrees to surrender possession of said Project Works. The O&M of such Project Works so taken
1094 back for O&M may be retransferred to the Contractor upon the furnishing by the Contracting
1095 Officer of a written notice of intention to retransfer O&M to the Contractor 90 days in advance
1096 of the date of retransfer by the United States. Such transfer shall not be made until the Project
1097 Works have been placed in efficient operating condition: Provided, That for Project Works
1098 taken back by the United States for O&M, the Contractor shall pay the United States quarterly, in
1099 advance, sufficient funds, on the basis of an estimate to be submitted by the Contracting Officer,
1100 to finance the O&M of such Project Works. If the actual O&M costs should exceed the
1101 estimated costs, the Contractor shall pay the United States the necessary additional sums of
1102 money within 60 days after receipt of a bill submitted by the Contracting Officer to the
1103 Contractor. Any surplus of advances by the Contractor shall be refunded or, at the option of the

1104 Contracting Officer, be applied against any obligation of the Contractor under this Contract due
1105 at that time.

1106 (b) No substantial change in any of the Project Works or the installation of
1107 Contractor facilities on the lands and rights of way of Project Works shall be made by the
1108 Contractor without first obtaining the written consent of the Contracting Officer. The Contractor
1109 shall promptly make at its expense any and all repairs or replacements to one or more of the
1110 Project Works which the Contracting Officers determines are necessary for the proper O&M of
1111 such Project Works. If at any time, in the opinion of the Contracting Officer one or more of the
1112 Project Works shall from any cause be in a condition unfit for service, the Contracting Officer
1113 may order that the water be shut off from that Project Works until, in the Contracting Officer's
1114 opinion, said Project Works are put in proper condition for service. If the Contractor neglects or
1115 fails to make necessary repairs or replacements, at the option of the Contracting Officer, such
1116 repairs or replacements may be made by the United States and the cost therefore charged to the
1117 Contractor. The Contractor shall repay such costs as a miscellaneous cost in accordance with
1118 Article 25 of this Contract. The Contractor at its own expense shall repair any damage to the
1119 Project Works resulting from negligence of its officers, employees, or agents.

1120 (c) From time to time the Contracting Officer, without cost to the Contractor,
1121 may make a review of the maintenance of the Project Works in order to assist the Contractor in
1122 determining the condition of those facilities and the adequacy of the maintenance program. The
1123 review may include any or all of the Project Works. A report of each such review, including
1124 recommendations, if any, shall be prepared and a copy shall be furnished to the Contractor. If
1125 deemed necessary by the Contracting Officer or when requested by the Contractor, an inspection
1126 of any of the Project Works and of the Contractor's books and records relating thereto may be

1127 made to ascertain whether the requirements of this Contract are being satisfactorily performed by
1128 the Contractor or to assist the Contractor in solving specific problems. Any such inspection
1129 shall, except in a case of emergency, be made after written notice to the Contractor and the actual
1130 cost thereof shall be paid by the Contractor to the United States as a miscellaneous cost pursuant
1131 to Article 25 of this Contract. The Contractor may participate in either the review or inspection.

1132 (d) The Contractor shall have the right to abandon one or more of the Project
1133 Works with the prior written approval of the Contracting Officer: Provided, That abandonment
1134 of one or more of the Project Works shall not relieve the Contractor of its obligation to repay the
1135 capital cost plus interest as appropriate of such Project Works less any disposal or salvage value
1136 which may be realized.

1137 (e) If and when the Contractor fully repays the United States the costs of one
1138 or more of the Project Works and the ownership of such Project Works is transferred to the
1139 Contractor pursuant to an Act of Congress, the provisions of subdivision (a), (b), (c), and (d) of
1140 this Article and subdivision (c) of Article 17 shall no longer apply to such Project Works

1141 EMERGENCY RESERVE FUND

1142 28.2. (a) The Contractor shall accumulate and maintain a reserve fund, as set forth
1143 in subdivision (b) below, which the Contractor shall keep available to pay O&M costs incurred
1144 during periods of special stress caused by damaging droughts, storms, earthquakes, floods, or
1145 other emergencies threatening or causing interruption of water service.

1146 (b) The Contractor shall establish a reserve fund of not less than \$1,000,000 in
1147 a Federally insured interest- or dividend-bearing account, or investments in securities guaranteed
1148 by the Federal Government; Provided, That the money so deposited or invested shall be available
1149 within a reasonable time to meet expenses for the purposes identified in subdivision (d) of this

1150 Article. Whenever said reserve fund is reduced below \$1,000,000 by expenditures therefrom, it
1151 shall be restored to that amount by accumulation of annual deposits at a minimum of \$250,000.
1152 The interest earnings shall continue to accumulate and be retained as part of the reserve fund
1153 except when required to meet expenditures pursuant to subdivisions (a) and (d) of this Article.

1154 (c) By written agreement between the Contractor and the Contracting Officer,
1155 the basic amount of the reserve fund may be adjusted to account for risk and uncertainty
1156 stemming from the size and complexity of the Project Works, the size of the Contractor's annual
1157 O&M budget and O&M costs not contemplated when this Contract was executed.

1158 (d) The Contractor may withdraw money from the reserve fund only for
1159 meeting unusual O&M costs incurred during periods of stress as described in subdivision (a)
1160 above, and unforeseen extraordinary O&M costs, unusual or extraordinary repair or replacement
1161 costs, and betterment costs (in situations where recurrence of severe problems can be eliminated)
1162 during periods of special stress. The Contractor shall notify the Contracting Officer of any
1163 expenditure from the reserve fund pursuant to this subdivision.

1164 TRANSFER OF TITLE TO PROJECT WORKS

1165 28.3. Upon repayment of all outstanding capitalized costs of one or more of the Project
1166 Works, and upon appropriate authorization of Congress, all rights, title, and interests in and to
1167 the relevant Project Work(s) shall be transferred to the Contractor.

1168 PERFORMANCE OF PROJECT WORKS WITH CONTRIBUTED FUNDS

1169 28.4. (a) Pursuant to the Act of March 4, 1921 (41 Stat. 1367, 1404), the
1170 Contracting Officer may accept funds contributed by the Contractor to finance any authorized
1171 construction work on the Project facilities not otherwise provided for by this Contract for which
1172 funds may not be available. Pursuant to the Act of January 12, 1927 (44 Stat. 957, 43 U.S.C. §

1173 397a), the Contracting Officer may also accept funds contributed by the Contractor to finance
1174 any authorized O&M work on the Project facilities not otherwise provided for by this Contract
1175 for which funds may not be available. When the undertaking of such work is approved, funds
1176 therefore shall be advanced by the Contractor as may be directed by the Contracting Officers and
1177 there shall be submitted to the Contracting Officer a certified copy of the resolution of the Board
1178 of Directors of the Contractor describing the work to be done and authorizing its performance
1179 with contributed funds.

1180 (b) After completion of any work on Project facilities financed in whole or in
1181 part with funds contributed by the Contractor under subdivision (a) of this Article, the Contractor
1182 shall be furnished with a statement of the final cost thereof. Any unexpended balance of funds
1183 shall be refunded to the Contractor or applied as otherwise directed by the Contractor. The
1184 amount by which the cost of such work exceeds the amount of funds advanced by the Contractor
1185 therefore shall be paid by the Contractor to the United States as the Contracting Officer may
1186 direct.

1187 CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS

1188 29. The expenditure or advance of any money or the performance of any obligation of
1189 the United States under this Contract shall be contingent upon appropriation or allotment of
1190 funds. Absence of appropriation or allotment of funds shall not relieve the Contractor from any
1191 obligations under this Contract. No liability shall accrue to the United States in case funds are
1192 not appropriated or allotted.

1193 BOOKS, RECORDS, AND REPORTS

1194 30. (a) The Contractor shall establish and maintain accounts and other books and
1195 records pertaining to administration of the terms and conditions of this Contract, including: the
1196 Contractor's financial transactions, water supply data, and Project land and right-of-way
1197 agreements; the water users' land-use (crop census), land ownership, land-leasing and water use
1198 data; and other matters that the Contracting Officer may require. Reports thereon shall be
1199 furnished to the Contracting Officer in such form and on such date or dates as the Contracting
1200 Officer may require. Subject to applicable Federal laws and regulations, each party to this

1201 Contract shall have the right during office hours to examine and make copies of the other party's
1202 books and records relating to matters covered by this Contract.

1203 (b) Notwithstanding the provisions of subdivision (a) of this Article, no
1204 books, records, or other information shall be requested from the Contractor by the Contracting
1205 Officer unless such books, records, or information are reasonably related to the administration or
1206 performance of this Contract. Any such request shall allow the Contractor a reasonable period of
1207 time within which to provide the requested books, records, or information.

1208 (c) Omitted.

1209 ASSIGNMENT LIMITED--SUCCESSORS AND ASSIGNS OBLIGATED

1210 31. (a) The provisions of this Contract shall apply to and bind the successors and
1211 assigns of the parties hereto, but no assignment or transfer of this Contract or any right or interest
1212 therein shall be valid until approved in writing by the Contracting Officer.

1213 (b) The assignment of any right or interest in this Contract by either party
1214 shall not interfere with the rights or obligations of the other party to this Contract absent the
1215 written concurrence of said other party.

1216 (c) The Contracting Officer shall not unreasonably condition or withhold
1217 approval of any proposed assignment.

1218 SEVERABILITY

1219 32. In the event that a person or entity who is neither (i) a party to a Project contract,
1220 nor (ii) a person or entity that receives Project Water from a party to a Project contract, nor (iii)
1221 an association or other form of organization whose primary function is to represent parties to
1222 Project contracts, brings an action in a court of competent jurisdiction challenging the legality or
1223 enforceability of a provision included in this Contract and said person, entity, association, or
1224 organization obtains a final court decision holding that such provision is legally invalid or
1225 unenforceable and the Contractor has not intervened in that lawsuit in support of the plaintiff(s),

1226 the parties to this Contract shall use their best efforts to (i) within 30 days of the date of such
1227 final court decision identify by mutual agreement the provisions in this Contract which must be
1228 revised and (ii) within three months thereafter promptly agree on the appropriate revision(s).
1229 The time periods specified above may be extended by mutual agreement of the parties. Pending
1230 the completion of the actions designated above, to the extent it can do so without violating any
1231 applicable provisions of law, the United States shall continue to make the quantities of Project
1232 Water specified in this Contract available to the Contractor pursuant to the provisions of this
1233 Contract which were not found to be legally invalid or unenforceable in the final court decision.

1234 RESOLUTION OF DISPUTES

1235 33. Should any dispute arise concerning any provisions of this Contract, or the
1236 parties' rights and obligations thereunder, the parties shall meet and confer in an attempt to
1237 resolve the dispute. Prior to the Contractor commencing any legal action, or the Contracting
1238 Officer referring any matter to the Department of Justice, the party shall provide to the other
1239 party 30-days written notice of the intent to take such action; Provided, That such notice shall not
1240 be required where a delay in commencing an action would prejudice the interests of the party
1241 that intends to file suit. During the 30-day notice period, the Contractor and the Contracting
1242 Officer shall meet and confer in an attempt to resolve the dispute. Except as specifically
1243 provided, nothing herein is intended to waive or abridge any right or remedy that the Contractor
1244 or the United States may have.

OFFICIALS NOT TO BENEFIT

1245 34. No Member of or Delegate to Congress, Resident Commissioner, or official of the
1246 Contractor shall benefit from this Contract other than as a water user or landowner in the same
1247 manner as other water users or landowners.

1248 CHANGES IN CONTRACTOR'S SERVICE AREA

1249 35. (a) While this Contract is in effect, no change may be made in the
1250 Contractor's Service Area, by inclusion or exclusion of lands, dissolution, consolidation, merger,
1251 or otherwise, except upon the Contracting Officer's written consent.

1252 (b) Within 30 days of receipt of a request for such a change, the Contracting
1253 Officer will notify the Contractor of any additional information required by the Contracting
1254 Officer for processing said request, and both parties will meet to establish a mutually agreeable
1255 schedule for timely completion of the process. Such process will analyze whether the proposed
1256 change is likely to: (i) result in the use of Project Water contrary to the terms of this Contract;
1257 (ii) impair the ability of the Contractor to pay for Project Water furnished under this Contract or
1258 to pay for any Federally-constructed facilities for which the Contractor is responsible; and (iii)
1259 have an impact on any Project Water rights applications, permits, or licenses. In addition, the
1260 Contracting Officer shall comply with the NEPA and the ESA. The Contractor will be
1261 responsible for all costs incurred by the Contracting Officer in this process, and such costs will
1262 be paid in accordance with Article 25 of this Contract.

1263 FEDERAL LAWS

1264 36. By entering into this Contract, the Contractor does not waive its rights to contest
1265 the validity or application in connection with the performance of the terms and conditions of this
1266 Contract of any Federal law or regulation; Provided, That the Contractor agrees to comply with
1267 the terms and conditions of this Contract unless and until relief from application of such Federal
1268 law or regulation to the implementing provision of the Contract is granted by a court of
1269 competent jurisdiction.

1270 NOTICES

1271 37. Any notice, demand, or request authorized or required by this Contract shall be
1272 deemed to have been given, on behalf of the Contractor, when mailed, postage prepaid, or

1273 delivered to the Area Manager, South-Central California Area Office, 1243 N Street, Fresno,
1274 California 93721, and on behalf of the United States, when mailed, postage prepaid, or delivered
1275 to the Board of Directors, Contra Costa Water District, P. O. Box H₂O, Concord, California
1276 94524. The designation of the addressee or the address may be changed by notice given in the
1277 same manner as provided in this Article for other notices.

1278 CONFIRMATION OF CONTRACT

1279 38. The Contractor, after the execution of this Contract, shall furnish to the
1280 Contracting Officer evidence that pursuant to the laws of the State of California, the Contractor
1281 is a legally constituted entity, and the Contract is lawful, valid, and binding on the Contractor.

1282 IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day
1283 and year first above written.

1284 THE UNITED STATES OF AMERICA

1285 By: _____
1286 Regional Director, Mid-Pacific Region
1287 Bureau of Reclamation

1288 (SEAL)

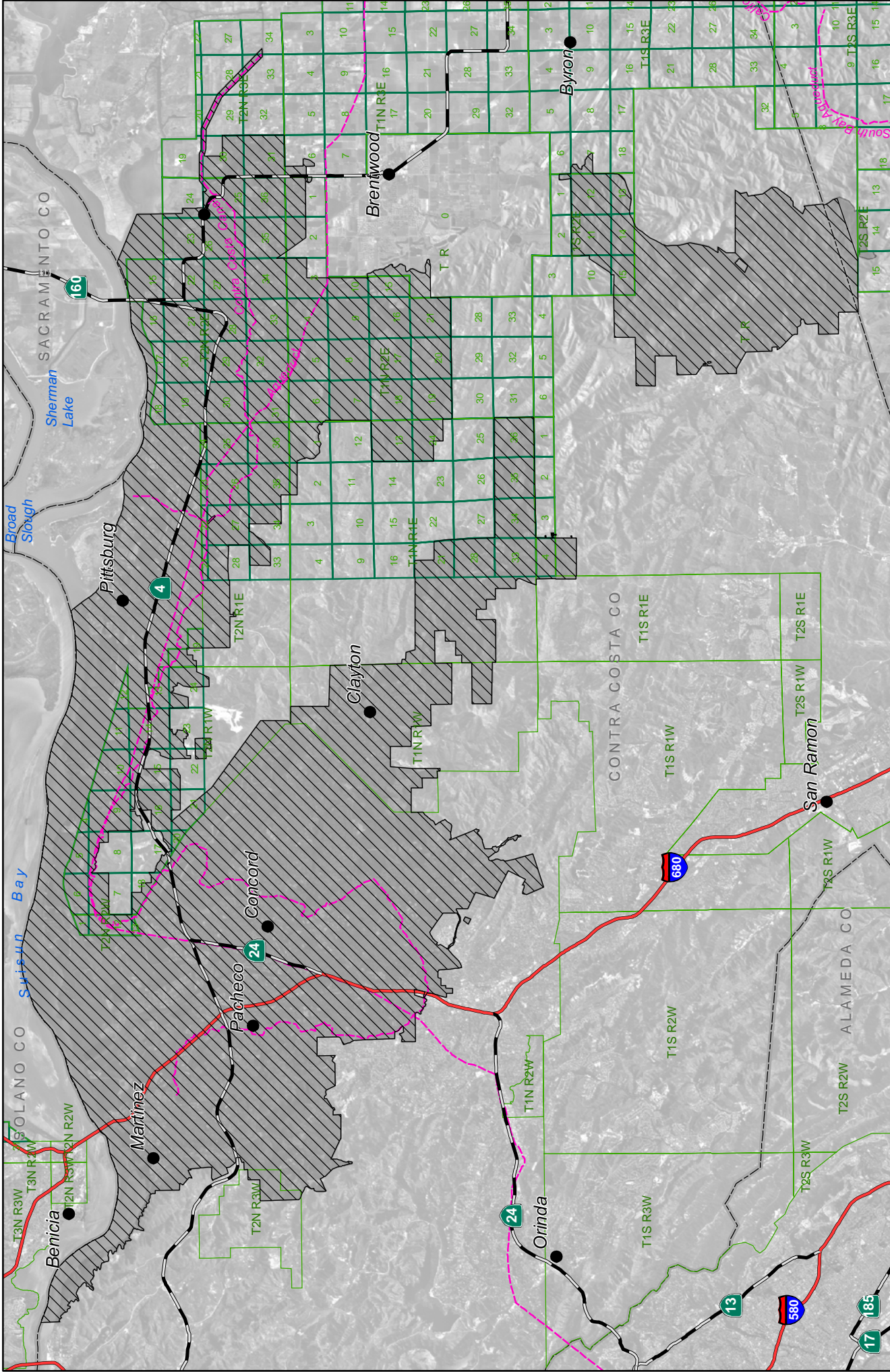
1289 CONTRA COSTA WATER DISTRICT

1290 By: _____
1291 President of the Board of Directors

1292 Attest:

1293 By: _____
1294 Secretary of the Board of Directors

1295 (H:\pub 440\LTRC\Final Draft LTRC's – Fresno, Tracy\11-30-04 Contra Costa WD Final Draft
1296 LTRC with exhibits.doc)



Contra Costa Water District

Contract No. I75r-3401A-LTR1

Exhibit A

-  District Boundary
-  Contractor's Service Area



EXHIBIT B
CONTRA COSTA WATER DISTRICT
2004 Water Rates and Charges

Note: Rates and Charges are 2004 rates. This exhibit will be updated prior to execution of the contract to reflect the current Rates and Charges.

	<u>Central Valley Project</u>	<u>*Non-Project Water</u>		<u>Other</u>
	<u>M&I</u>	<u>Los Vaqueros</u>	<u>M&I</u>	<u>M&I</u>
<u>COST-OF-SERVICE RATES:</u>				
Capital Rates	\$10.75	\$ 1.24		
O&M Rates:				
Water Marketing	\$ 5.01	\$ 5.01	\$ 5.01	
Storage	\$ 6.38			
San Luis Drain				
Direct Pumping	\$ 3.70	\$ 3.70		
Conveyance				
Conveyance Pumping				
Total O&M Rates	\$15.09	\$ 9.95	\$ 5.01	
Deficit Rates:				
Non-Interest Bearing	N/A	N/A	N/A	
Interest Bearing	\$10.49	N/A	N/A	
Total Deficit Rate	\$10.49	N/A	N/A	
Cost-Service Rate	<u>\$36.33</u>	<u>\$ 9.95</u>	<u>\$5.01</u>	

FULL COST RATES as defined in Reclamation Reform Act (96 Stat. 1263):

<u>Section 202(3)</u> Rate is applicable to a Qualified Recipient or to a Limited Recipient receiving irrigation water on or before October 1, 1981.	N/A	N/A	N/A
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<u>Section 205(a)(3)</u> Rate is applicable to a Limited Recipient that did <u>not</u> receive irrigation water on or before October 1, 1981.	N/A	N/A	N/A
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CHARGES UNDER P.L. 102-575 TO RESTORATION FUND: **

Restoration Payments [Section 3407(d)(2)(A)]	\$15.64	N/A	N/A
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* Non-Project Rates/Chares may be modified by various methods on a CVP-Wide Basis at some future point.

** The surcharges are payments in addition to the water rates and were determined pursuant to Title XXXIV of Public Law 102-575. Restoration fund surcharges under P. L. 102-575 are on a fiscal year basis (10/1-9/30).

HISTORIC USE as defined in CVP M&I Water Shortage Policy:

Recent Historic Average - 152,100

APPENDIX B

Table B-1 Special Status Species

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Mammals					
riparian (San Joaquin Valley) woodrat	<i>Neotoma fuscipes riparia</i>	E	Inhabits riparian forest and scrub communities along low portions of the San Joaquin and Stanislaus rivers in the northern San Joaquin Valley. Historical localities are distributed in San Joaquin, Stanislaus, and Merced counties. Known occupied range is limited to the Stanislaus River riparian areas near Caswell Memorial State Park; a possible second population is near Vernalis, San Joaquin County.	NO	The CCWD service area is outside the species known occupied range.
salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E	Inhabits tidal and nontidal salt marshes of Suisun, San Pablo, and central and south San Francisco bays.	YES	CNDDDB results show 25 known occurrences in the project vicinity, in the following USGS quadrangles: <i>Vine Hill, Honker Bay, Antioch North, and Benicia</i> . Suitable habitat is present in the CCWD service area, and the species is known to occur within the CCWD boundary.
riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	E	Found in San Joaquin Valley native riparian areas with large clumps of dense shrubs, low growing vines, and some tall shrubs and scrubby trees. Known populations exist: in Caswell Memorial State Park in southern San Joaquin County, in the Paradise Cut area south of Stockton, and near Lathrop, California.	NO	The CCWD service area is outside the species current known range.
Mammals					
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	Inhabits semiarid communities of the San Joaquin Valley and adjacent foothill grasslands and open canopied woodlands. Current range extends from Contra Costa and San Joaquin counties in the north, south to Kern and Santa Barbara counties.	YES	Suitable habitat in the CCWD service area is highly fragmented, but the species has been observed in the CCWD service area. CNDDDB results show 25 known occurrences in the project vicinity, in the following USGS quadrangles: <i>Woodward Island, Clayton, Antioch South, Brentwood, Tassajara, Byron Hot Springs, Diablo, Altamont, and Livermore</i> .

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Birds					
California brown pelican	<i>Pelecanus occidentalis californicus</i>	E	Winter range is the Pacific Coast from the Gulf of California to southern British Columbia. Forages almost entirely on fish in open water or near shorelines. Rests on water or inaccessible rocks, mudflats, sandy beaches, wharfs, and jetties. Nesting and roosting take place outside the CCWD service area. Nesting is restricted to islands in the Gulf of California and along the outer coast from Baja California to West Anacapa and Santa Barbara Islands in Southern California.	NO	Extremely low probability of occurrence. Suitable foraging habitat may be present. However, the species would occur infrequently or irregularly in the CCWD service area.
California clapper rail	<i>Rallus longirostris obsoletus</i>	E	Occurs within a range of salt and brackish marshes. Requires emergent wetlands and tidal sloughs. Forages in higher marsh vegetation, along vegetation and mudflat interface, and along tidal creeks. Restricted almost entirely to the marshes of San Francisco estuary, where the only known breeding populations occur. Present sporadically and in low numbers at various locations throughout the Suisun Marsh Area (Carquinez Strait to Browns Island, including tidal marshes adjacent to Suisun, Honker, and Grizzly Bays).	YES	Brackish tidal marshes in the area (approximately 4,900 acres) are suitable habitat, and the adjacent grasslands and levees are suitable upland refugia (CCWD 1999). CNDDDB results show four known occurrences in the project vicinity, in the following USGS quadrangles: <i>Vine Hill, Honker Bay, and Benicia.</i>

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Birds					
California least tern	<i>Sterna antillarum</i> (= <i>albifrons</i>) <i>browni</i>	E	Winters in Latin America, but winter range and habitats are unknown. Nesting range is along the Pacific coast from southern Baja California to San Francisco Bay. Nests in colonies on bare or sparsely vegetated flat substrates near the coast. Typical nesting sites are on isolated or specially protected sand beaches or on natural or artificial open areas in remnant coastal wetlands, typically near estuaries, bays, or harbors where small fish are abundant.	YES	Suitable habitat is present in the CCWD service area. Two nesting colonies are present in the CCWD service area, in the <i>Honker Bay</i> quadrangle: one is located at the Pacific Gas and Electric (PG&E) plant in Pittsburg and the second is located at the Avon-Port Chicago Marsh (CNDDDB 2003).
western snowy plover	<i>Charadrius alexandrinus nivosus</i>	T	Breeds on coastal beaches from southern Washington to southern Baja California, Mexico. Northern California populations are concentrated in San Francisco Bay. Nests in flat, open areas with sandy or saline substrates. Uses sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, salt pond levees and gravel bars. May forage in the salt marshes near Suisun Bay.	NO	Extremely low probability of occurrence. Evidence indicates that western snowy plovers do not use marshes in the CCWD service area for nesting. The species would occur infrequently or irregularly in the CCWD service area.
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	Winter visitor and migrant at reservoirs and Delta waterways in the CCWD service area. Requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. Roosts communally in winter in dense, sheltered, remote conifer stands. Current nesting distribution is restricted to mostly mountainous habitats in the northern Sierra Nevada, Cascade Range, and northern Coast Ranges.	NO	Although potential nesting habitat is present in areas adjacent to but outside of the CCWD service area, bald eagles are not known to nest within the CCWD service area. Potential nesting habitat in the CCWD service area is of marginal quality because it lacks suitable nesting trees near reservoirs with minimal human activity. The species would occur infrequently or irregularly in the CCWD service area.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Birds					
Aleutian Canada goose	<i>Branta canadensis leucopareia</i>	D	Wintering geese forage in agricultural fields supporting pasture, corn, wheat, and rice crops and typically roost on land surrounded by water, on open water, and occasionally on open pastureland. In the San Joaquin Valley, they roost on artificially impounded waters, such as farm ponds, sewage ponds, and duck-club ponds. Winters in California's central valley, move south to the Delta as they migrate toward their nesting grounds in the Aleutian Islands.	NO	This species is not known to regularly occur in the CCWD service area and is considered an occasional winter visitor. Additionally, the Aleutian Canada goose was delisted by the Service on March 20, 2001. The species would occur infrequently or irregularly in the CCWD service area.
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	Nests on ledges of large cliff faces and less often on city buildings and bridges. Nesting and wintering habitats include wetlands, woodlands, other forested habitats, cities, agricultural areas and coastal habitats. Current winter range includes most of California, except deserts. Breeding range includes the Channel Islands, coast of southern and central California, inland north coastal mountains, Klamath and Cascade ranges, and the Sierra Nevada.	NO	This species is not known to regularly occur in the CCWD service area and is considered an occasional winter visitor. Additionally, the American peregrine falcon was delisted by the Service on August 25, 1999. The species would occur infrequently or irregularly in the CCWD service area.
Reptiles					
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	T	Typically found in chaparral—northern coastal sage scrub and coastal sage. Recent telemetry data indicate that, although home ranges are centered on shrub communities, the species ventures up to 500 feet into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland. Inhabits the inner coast range in western and central Contra Costa, Alameda, San Joaquin, and Santa Clara counties.	YES	Suitable habitat is present in the CCWD service area. CNDDDB results show 42 known occurrences in the CCWD service area, in the following USGS quadrangles: <i>Briones Valley, Walnut Creek, Clayton, Antioch South, Tassajara, Las Trampas Ridge, Byron Hot Springs, and Diablo</i> . The CCWD service area is within designated critical habitat (Units 1 and 4) for this species.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Reptiles					
Giant garter snake	<i>Thamnophis gigas</i>	T	Inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Requires adequate water during the active season (early-spring through mid-fall); emergent, herbaceous wetland vegetation for escape cover and foraging habitat during the active season; grassy banks and openings in waterside vegetation for basking; and higher elevation uplands for cover and refuge during the winter.	YES	Suitable habitat is present within the CCWD service area, and includes freshwater marshes and agricultural ditches in the Delta, east of the Antioch Bridge (Service 2000). CNDDDB results show three known occurrences in the project vicinity, in the following USGS quadrangles: <i>Jersey Island, Antioch North, and Bouldin Island</i> . The CCWD service area is within designated critical habitat (Units 1 and 4) for this species.
Amphibians					
California red-legged frog	<i>Rana aurora draytonii</i>	T	Occupies a fairly distinct habitat, combining both specific aquatic and riparian components. Adults require dense, shrubby or emergent riparian vegetation closely associated with deep still or slow moving water. Largest frog densities are associated with deep-water pools with dense stands of overhanging willows and an intermixed fringe of cattails. Locally abundant within portions of the San Francisco Bay area (including Marin County) and the central coast, but only isolated populations are documented in the Sierra Nevada, northern Coast, and northern Transverse ranges.	YES	Suitable habitat is present and the species is known to occur in the CCWD service area. CNDDDB results show 146 known occurrences in the project vicinity, in the following USGS quadrangles: <i>Briones Valley, Honker Bay, Clayton, Walnut Creek, Antioch South, Tassajara, Las Trampas Ridge, Byron Hot Springs, Benicia, Altamont, Livermore, and Diablo</i> .

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Amphibians					
California tiger salamander	<i>Ambystoma californiense</i>	PT	Restricted to grasslands and low foothill regions where lowland aquatic sites are available for breeding. Prefer natural vernal pools, vernal playas, large sag ponds, and other ephemeral ponds. Current range includes Sonoma and Santa Barbara counties, the Central Valley from southern Colusa County south to northern Kern County, and the coast ranges from Suisun Bay south to the Temblor Range.	YES	Suitable habitat is present in the CCWD service area. CNDDDB results show 146 known occurrences in the CCWD service area, in the following USGS quadrangles: <i>Antioch North, Honker Bay, Clayton, Walnut Creek, Antioch South, Tassajara, Brentwood, Byron Hot Springs, Altamont, Livermore, and Diablo</i> . This species is discussed in further detail in Section 5.5 .
Fish					
tidewater goby	<i>Eucyclogobius newberryi</i>	E PD	Inhabits brackish shallow lagoons of coastal wetlands and lower stream reaches, where the water is fairly still but not stagnant. Requires backwater, marshy habitats to avoid winter flood flows. Formerly distributed along the California coast. In San Francisco Bay and its associated streams, nine of ten previously identified populations have disappeared, and a survey of streams of the Bay drainage in 1984 failed to record any populations.	NO	Although suitable habitat is present, the species is not known to occur in the CCWD service area. In addition, populations north of Orange County, California were proposed for delisting on June 24, 1999.
Sacramento River winter-run ESU chinook salmon	<i>Oncorhynchus tshawytscha</i>	E	Spawn and rear in mainstem Sacramento River. Juveniles spend five to nine months in the river and Sacramento-San Joaquin Estuary before entering the ocean. Require cool year-round water temperatures, since spawning occurs during the summer. Requires deep pools and riffles, and clean gravel and cobble substrate to spawn. Sacramento River and Delta are designated as critical habitat and essential fish habitat for this species.	YES	Although it does not reside in the CCWD service area, the species migrates through the CCWD service area between upstream spawning grounds as adults, and the ocean as juveniles.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
<i>Fish</i>					
Delta smelt	<i>Hypomesus transpacificus</i>	T	Lives along the freshwater edge of the mixing zone (saltwater-freshwater interface). Shortly before spawning, migrates upstream and disperses widely into river channels and tidally influenced backwater sloughs. Spawns in shallow, fresh or slightly brackish water upstream of the mixing zone. Currently found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties.	YES	This species is known to inhabit the CCWD service area. In addition, the CCWD service area is within designated critical habitat for the species.
Central California Coast ESU coho salmon	<i>Oncorhynchus kisutch</i>	T	The ESU includes all naturally spawned populations of coho salmon from Punta Gorda in northern California south to and including the San Lorenzo River in central California, as well as populations in tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system.	NO	The CCWD service area is outside the species current known range.
Central California Coast ESU steelhead	<i>Oncorhynchus mykiss</i>	T	Occupies river basins from the Russian River, Sonoma County to Aptos Creek, Santa Cruz County and the drainages of San Francisco and San Pablo Bays eastward to the Napa River, excluding the Sacramento-San Joaquin River Basin.	NO	Only a very small portion of the CCWD service area overlaps with the range of this steelhead ESU. Presence of this ESU in the CCWD service area would be unlikely. Implementation of the proposed project would not likely result in adverse effects.
Central Valley ESU steelhead	<i>Oncorhynchus mykiss irideus</i>	T	Spawn and rear in Sacramento River and its tributaries and some San Joaquin tributaries. Require cool, swift shallow water; clean, loose gravel for spawning; and runs and suitable large pools in which to rear and over-summer. Sympatric and synonymous with resident, non-anadromous rainbow trout, which are abundant in Central Valley streams.	YES	This species may rear seasonally and migrates through the CCWD service area between upstream spawning grounds as adults, and the ocean as juveniles.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Fish					
Central Valley spring-run ESU chinook salmon	<i>Oncorhynchus tshawytscha</i>	T	Spawn and rear in the Feather and Sacramento rivers and suitable perennial tributaries. Require cool year-round water temperatures and deep pools for over-summering habitat. Spawn in riffles with gravel and cobble substrate. Sacramento River, suitable perennial tributaries, and Delta are considered essential fish habitat for this species.	YES	This species may rear seasonally and migrates through the CCWD service area between upstream spawning grounds as adults, and the ocean as juveniles.
Invertebrates					
Lange's metalmark butterfly	<i>Apodemia mormo langei</i>	E	Associated with inland dune scrub habitats that support its host plant, the naked buckwheat (<i>Eriogonum nudum</i>). The species' present range is limited to approximately 15 acres of suitable habitat within the Antioch Dunes National Wildlife Refuge, where it is fully protected.	NO	Within the CCWD service area, this species is fully protected within the Antioch Dunes National Wildlife Refuge. No other populations are known or suspected to occur in the CCWD service area. Project implementation would not impact the Refuge system or this species.
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E	Vernal pools / swales and ponded seasonal wetlands. Known to occur in Colusa, Napa, Tehama, Solano, Ventura, and Merced counties.	NO	The species is not known to occur in the CCWD service area, and the CCWD service area is outside the species' current range. The CCWD service area is outside of designated critical habitat for this species.
longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	E	Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales. The species is extremely rare, and are only known from three widely separated locations: the Altamont Pass area in Contra Costa and Alameda counties, and one location in San Luis Obispo County and in Merced County.	YES	CNDDDB results show two occurrences in the project vicinity, in the following USGS quadrangles: <i>Byron Hot Springs</i> and <i>Altamont</i> . Although these occurrences are outside of the CCWD service area. The CCWD service area is outside of designated critical habitat for this species.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Invertebrates					
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	E	Vernal pools, swales, and ephemeral freshwater habitats. Range includes disjunct occurrences in the Central Valley, from Shasta County to north Tulare County, and in the central coast range, from Solano County to Alameda County.	YES	CNDDDB results show one known occurrence in the project vicinity, in the following USGS quadrangles: <i>Honker Bay</i> and <i>Antioch North</i> . The CCWD service area is outside of the designated critical habitat for this species.
callippe silverspot butterfly	<i>Speyeria callippe callippe</i>	E	Inhabits native grasslands and associated habitats. This species' current known range is limited to San Mateo County and a city park in Alameda County.	NO	CCWD service area is outside the species' current known range. A location in Solano County recorded in the CNDDDB is outside of the CCWD service area (CNDDDB 2003). No other populations are known or suspected to occur in the CCWD service area.
California freshwater shrimp	<i>Syncaris pacifica</i>	E	Historically, the shrimp was probably common in low elevation, perennial freshwater streams in Marin, Sonoma, and Napa counties. Today, it is found in sixteen stream segments within these counties. Found only in low-elevation (less than 53-foot) and low-gradient (generally less than 1 percent) streams.	NO	The species is not known to occur in the CCWD service area, and the CCWD service area is outside the species' current range.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	Vernal pools, swales, and ephemeral freshwater habitats. Range includes disjunct occurrences in the Central Valley, from Shasta County to Tulare County, and in the central and southern coast ranges, from northern Solano County to Ventura County. Additional occurrences have been identified in southern California and in Oregon.	YES	CNDDDB results show nine known occurrence in the project vicinity, in the following USGS quadrangles: <i>Altamont</i> , <i>Livermore</i> , <i>Clifton Court Forebay</i> , <i>Woodward Island</i> , <i>Brentwood</i> , <i>Antioch South</i> , and <i>Antioch North</i> . The CCWD service area is outside of designated critical habitat for this species.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Invertebrates					
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	Inhabits elderberry trees or shrubs associated with riparian forests along rivers and streams. Current distribution is patchy throughout the remaining riparian forests of the Central Valley, from Redding, Shasta County, to Bakersfield, Kern County.	YES	The CCWD service area is outside the species' known range and there are no records of this species from the CCWD service area. However, suitable habitat for the species (i.e., elderberry shrubs) has been recorded in the CCWD service area (i.e., north and east of Mount Diablo and east of Pittsburg) and could occur elsewhere along perennial and intermittent streams, levees, stockponds, and foothill seeps.
Delta green ground beetle	<i>Elaphrus viridis</i>	T	Species has been detected around the margins of vernal pools and in bare areas along trails and roadsides in central Solano County. The species' cryptic coloration, small size, and habit of hiding under low-growing vegetation can hinder detection. Adults may also occur in the surrounding grasslands. It is presently known to occur only in Solano County, northeast of the San Francisco Bay Area.	NO	The species is not known to occur in the CCWD service area, and the CCWD service area is outside the species' current range.
Plants					
large-flowered fiddleneck	<i>Amsinckia grandiflora</i>	E	Inhabits cismontane woodland and valley and foothill grassland on a variety of soils, from 902 to 1,805 feet in elevation. At present, two natural populations exist. One consists of two colonies in the hills east of Livermore in Alameda and San Joaquin counties. The other is a recently discovered population in San Joaquin County. Besides these extant natural populations, there are also several experimentally reintroduced populations.	NO	CNDDDB results show three known occurrences in the project vicinity, in the <i>Clayton</i> and <i>Antioch South</i> USGS quadrangles. These populations were experimentally reintroduced to the Black Diamond Mines Regional Preserve, but only one has been somewhat successful. No other populations are known or suspected to occur in the CCWD service area. This location is fully protected.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Plants					
soft bird's-beak	<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	E	Inhabits coastal salt marshes and brackish marshes from northern San Francisco Bay to Suisun Bay in Napa, Solano, and Contra Costa counties.	YES	The species is known to occur in the CCWD service area. CNDDDB reports eight occurrences in the project vicinity, but four of these have likely been extirpated. Remaining known populations exist in the <i>Vine Hill, Honker Bay, and Benicia</i> USGS quadrangles.
Palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	E	Grows on seasonally-flooded, saline-alkali soils in lowland plains and basins at elevations of less than 500 feet. Seven populations of palmate-bracted bird's-beak are currently known in Colusa, Yolo, Fresno, Madera, and Alameda counties.	NO	One known location in the project vicinity is present in the Springtown Wetlands Reserve (CNDDDB 2003), located north of Livermore in Alameda County. This large and genetically diverse population occurs on lands owned by the Federal Communication Commission, the City of Livermore, and private landowners. No other populations are known or suspected to occur in the CCWD service area.
Contra Costa wallflower	<i>Erysimum capitatum</i> ssp. <i>angustatum</i>	E	Grows naturally only in sand dune habitat along the San Joaquin River east of Antioch. Areas of suitable habitat (riverine or wind-blown sandy soils near Antioch) that do not contain visible vegetative, reproductive or senescent/dead plants may support viable seed banks.	NO	Within the CCWD service area, this species is fully protected within the Antioch Dunes National Wildlife Refuge. No other populations are known or suspected to occur in the CCWD service area. The Antioch Dunes National Wildlife Refuge protects critical habitat for this species. Project implementation would not impact the Refuge system or this species.
Plants					
Contra Costa goldfields	<i>Lasthenia conjugens</i>	E	Inhabits vernal pools within open grassy areas in woodlands and valley grasslands from sea level to 1,500 feet. Currently, 13 populations are known from Napa, Contra Costa, Alameda and Solano counties.	YES	Of the five reported occurrences in the project vicinity, only one has been observed in the last fifteen years (CNDDDB 2003). The CCWD service area is outside of designated critical habitat for this species.

Table B-1. Special-Status Species Considered in the Analysis for the Contra Costa Water District Proposed Long-Term Water Service Contract, Contra Costa County, California. (North State Resources, Inc., March 2004)

Species		Federal Status ¹	General Habitat and Distribution	Is Species Analyzed Further in the BA ² ?	Occurrence in the Service Area
Common Name	Scientific Name				
Antioch Dunes evening-primrose	<i>Oenothera deltooides</i> ssp. <i>howellii</i>	E	Endemic to loose sand and stabilized sand dunes near river margins in the vicinity of Antioch. The subspecies occurs in several locations near the confluence of the Sacramento and San Joaquin Rivers. The only natural stand exists within the sand dunes near Antioch in Contra Costa County.	NO	Known highly localized occurrences on protected land. Most of the natural dune habitat is in Antioch Dunes National Wildlife Refuge. PG&E owns the remaining habitat. The area is protected by San Francisco Bay National Wildlife Refuge and PG&E. The Antioch Dunes National Wildlife Refuge protects critical habitat for this species. Project implementation would not impact the Refuge system or this species.
pallid manzanita	<i>Arctostaphylos pallida</i>	T	Occurs in Alameda and Contra Costa counties, in manzanita chaparral habitat at elevations from 656 to 1,460.	YES	The two known occurrences of this species in the CCWD service area were artificially reintroduced. However, suitable habitat for the species is present.
Santa Cruz tarplant	<i>Holocarpha macradenia</i>	T	Occurs in clay soils in grasslands. Range is now limited to 12 natural occurrences in Santa Cruz and Monterey counties.	NO	In 1982, seed was introduced to 22 sites in Wildcat Canyon Regional Park and onto East Bay Municipal Utilities District (EBMUD) lands. Only one of these sites consistently has over 100 plants, and 13 of the sites have not supported any plants in the past four years. These populations are protected.

Plants

Colusa grass	<i>Neostapfia colusana</i>	T	Occurs in large or deep vernal pools with substrates of high mud content. Sparingly restricted to the Sacramento and San Joaquin Valleys. Approximately 44 populations remain along a 100-mile stretch of the eastern San Joaquin Valley in Merced and Stanislaus counties; 4 populations exist in Yolo and Solano counties.	NO	The species is not known to occur in the CCWD service area, and the CCWD service area is outside the species' current range. The CCWD service area is outside of designated critical habitat for this species.
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NOTES: 1 Federal Status Codes: E = Endangered; T = Threatened; P = Proposed; D = Delisted

2 Final Biological Assessment – Long Term Water Service Contract Renewal, Volume 1 (March 31, 2004)

APPENDIX C

Economic Analysis (November 1999)

Economic Analysis of November 1999 Tiered Pricing Proposal for PEIS Preferred Alternative

Date: October 2, 2000

This submittal presents the results of an Economic Analysis of the application to the PEIS Preferred Alternative of the November 1999 unit rates for CVP water and Tiered Pricing Proposal.

The PEIS Preferred Alternative included assumptions for the tiered pricing of CVP water that were developed during the preparation of the Draft PEIS. Subsequent to completion of the Final PEIS, a different tiered pricing proposal was developed. In addition, the PEIS assumed 1992 CVP water rates. This analysis includes the 1999 water rates. This submittal applies the new water rates and the November 1999 proposal to the Preferred Alternative and compares the results to the impact analysis of the PEIS Preferred Alternative. The level of detail presented in this submittal is consistent with the level of detail presented in the main PEIS document and the technical appendices. Tables are presented in the same format as used in the PEIS.

The economic analysis includes an evaluation of agricultural economics using Central Valley Production Model (CVPM), municipal and industrial water use economics for CVP water using the spreadsheet presented with the PEIS, and regional economics using IMPLAN. This memorandum discusses the new assumptions in the November 1999 proposal. However, this memorandum does not discuss the basic assumptions used in the PEIS models and analytical tools. This memorandum must be used in conjunction with the Draft PEIS and Final PEIS, including the methodology and modeling technical appendices, to explain the overall assumptions for evaluating the Preferred Alternative in the PEIS.

For the Agricultural Land Use and Economics analysis, the methodology used for applying CVP water rates was modified to allow for the new tiered pricing and the use of blended rates to determine a total water rate for all CVP water applied by an irrigation district or agency. These changes result in changes in water use due to the affordability of CVP water supplies, not a change in reliability.

For the Municipal and Industrial Water Use Economics analysis, blended rates had been used in the PEIS analysis. In addition, this analysis assumes that the municipal and industrial users will be able to afford the calculated water costs, as described in the PEIS. Therefore, CVP water deliveries do not change for the municipal and industrial analysis. The Regional Economics analysis reflects only changes to agricultural and municipal and industrial sectors, but not recreation sectors.

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SECTION 1
AGRICULTURAL LAND USE AND ECONOMICS

AGRICULTURAL LAND USE AND ECONOMICS

CONTRACT RENEWAL PROPOSAL WITH BLENDED WATER RATES

In the November 1999 proposal, Reclamation has proposed that water sold to CVP water service contractors be sold according to tiered water rates as required by CVPIA section 3404.

Reclamation has also proposed that two categories of water be identified. Category 1 water would be calculated as the average delivery of the previous five years, and would be split into three tiers according to the 80-10-10 quantities defined in the CVPIA. Category 2 water would be any water available in excess of the 5-year rolling average, up to the total contract amount as defined by the Needs Analysis.

Tier 1 water rates include the cost-of-service component and any applicable Restoration charges and surcharges. Both the Restoration Charge and the capital component of the cost-of-service rate are subject to ability-to-pay limits. These limits are in effect for Bella Vista WD and Clear Creek CSD, contractors on the Corning and Tehama-Colusa Canals, and contractors receiving water from New Melones.

Tier 3 water rates include the full-cost rate (as defined in the Reclamation Reform Act) and any applicable Restoration Charges. No ability-to-pay relief is provided in this Tier. The Tier 2 water rate is the average of the applicable Tier 1 and Tier 3 rates. Category 2 water has the same rate as Tier 3.

For this proposal, it is assumed that water conservation guidelines allow contractors to blend the rate of CVP water delivered in any tier or Category, and that they do blend the rates. This is different from the assumption used to assess alternatives in the PEIS, in which contractors were assumed to sell CVP water to growers at tiered rates. Differences between PEIS pricing assumptions and this analysis are:

- This analysis assumes that contractors blend the price of all CVP water received at tiered rates into a single rate. Tiered rates to growers are assumed in the PEIS.
- The project water portion of Sacramento River water rights settlement contracts are not subject to the new pricing policy in this analysis. In the PEIS it was assumed that it was subject to tiered rates.
- Rates are based on the Irrigation Water Rates spreadsheets provided by Reclamation in November 1999. PEIS rates used the 1994 Irrigation Water Rates manual.
- Ability-to-pay relief is incorporated using the current payment capacity studies for Shasta County irrigation contractors, Corning Canal contractors, Tehama Colusa Canal contractors, and New Melones contractors. In the PEIS, payment capacity was based on a 1992 regional study (PEIS, 1999).

- In this analysis, ability to pay relief is provided in Tier 1, with none in Tier 3 - Tier 2 is the average of Tiers 1 and 3, and so provides 50% relief. In the PEIS, the same dollar amount of ability to pay relief is applied in all pricing tiers.
- A \$7.00 per acre-foot Restoration Charge is assumed in this analysis. A \$6.50 per acre-foot charge was used in the PEIS. The Friant surcharge was \$7.00 per acre-foot in both studies.
- There is no lower bound on the usage of CVP water. In the PEIS each subregion was restricted to using at least the Tier 1 quantity of CVP supplies.

METHODOLOGY

Other than the differences listed above, the modeling approach and underlying data were the same as used for the PEIS. The Central Valley Production Model (CVPM) was used in this analysis, with modifications needed to assess the specific water pricing conditions proposed. Table 1 shows the regions of the CVPM and the corresponding service areas. Groundwater hydrology was not assessed as it was in the PEIS alternatives. Therefore, for purposes of analysis, most regions were assumed to have access to replacement groundwater if needed. Based on groundwater hydrology as described in the PEIS, the following subregions are assumed to be unable to replace any CVP water with groundwater on a long term basis: Shasta County irrigation contractors (subregion 1), Corning Canal contractors (subregion 2), and the Tehama-Colusa service area (subregion 3B).

Water deliveries from the CVPIA Preferred Alternative were used (Reclamation CVPIA PEIS, 1999). These deliveries were allocated on a yearly basis into pricing tiers and categories according to the rules described above. Weighted average (i.e., blended) prices were calculated for each year, with quantities in each tier and category based on the previous five years of delivery. In any given year, the quantity and blended price of water depends on the 6-year sequence leading up to and including the current year. Throughout this report the following conventions are used: an Average year represents the average 1922-1990 water delivery from the CVPIA Preferred Alternative (Reclamation CVPIA PEIS, 1999); a Wet year represents the average delivery for the period of 1967-1971 from the CVPIA Preferred Alternative; and a Dry year is the average 1928-1934 delivery from The CVPIA Preferred Alternative.

A total of nine water supply sequences are assessed in this analysis and compared to the CVPIA Preferred Alternative:

Average-Average:	An average water year following a 5-year sequence of average years.
Wet-Average:	An average water year following a 5-year sequence of wet years.
Dry-Average:	An average water year following a 5-year sequence of dry years.
Average-Wet:	A wet water year following a 5-year sequence of average years.
Wet-Wet:	A wet water year following a 5-year sequence of wet years.
Dry-Wet:	A wet water year following a 5-year sequence of dry years.
Average-Dry:	A dry water year following a 5-year sequence of average years.
Wet-Dry:	A dry water year following a 5-year sequence of wet years.
Dry-Dry:	A dry water year following a 5-year sequence of dry years.

The CVP water rates used for each of the nine sequences described above and the CVPIA Preferred Alternative tiered prices are shown in Table 3. Tables 4-12 show the available CVP water service contract supplies by tier and the blended price for each of the 22 subregions under the nine sequences proposed for the Long-Term Contract Renewal analysis.

Results are shown for each of the nine sequences presented as differences compared to the CVPIA Preferred Alternative. When calculating differences from the CVPIA Preferred Alternative, sequences ending in an Average, Wet and Dry years are compared to the Average, Wet and Dry year CVPIA Preferred Alternative results respectively.

IRRIGATED ACRES

Changes in irrigated acres from the Preferred Alternative are summarized by region in Table 13. A complete list of changes by crop and subregion is provided as Table 17.

Both the Average-Average and Wet-Average scenarios show little difference from the Preferred Alternative under the Average hydrology conditions. The Dry-Average sequence shows a larger reduction in irrigated acres almost all of which comes from the Sacramento River region. Compared to the Wet year Preferred Alternative results, there is a similar pattern for the three Long-Term Contract Renewal sequences ending with Wet years. For all three of the Long Term Contract Renewal Sequences ending in a dry year there minimal increases in irrigated acreage compared to the Dry year CPVIA Preferred Alternative results. Irrigated acres remain unchanged under all nine sequences in the San Felipe Division.

The reduction in acreage in Average and Wet years preceded by a series of Dry years is a result of higher CVP water costs. Since the quantity of Category 1 water is based on the average deliveries of the preceding five years, the quantity of water eligible for Category 1 classification shrinks when a sustained drought is experienced. In an average or wet year follows a drought period, water becomes available however a large portion is classified as Category 2 and is priced at the full cost rate. This can be seen in Tables 6 and 9. When this relatively large block of full cost water is incorporated into the blended water price, all CVP supplies become more expensive, and sometimes unaffordable. This result is not seen in the dry-dry sequence because there is not excess water that gets classified as Category 2.

GROSS AND NET REVENUE

Gross revenue (value of production) impacts follow acreage impacts quite closely, and are shown by region in Table 14. Compared to the Average Preferred Alternative, a small reduction of less than \$1 million is estimated for the Average-Average and Wet-Average scenarios, and a \$39 million reduction is estimated in Dry-Average scenario. Gross revenue also declines compared to the Wet Preferred Alternative with approximately \$5 million reductions in Average and Wet years and a larger reduction of \$29 million in the Dry-Wet scenario. In dry years preceded by all three hydrologic conditions, gross revenue is slightly higher when compared to the Preferred Alternative Dry year results. There were no changes in gross revenue for the San Felipe Division since there were no changes in irrigated acres compared to the CVPIA preferred Alternative. A complete list of changes in gross revenue by crop and subregion is provided as Table 18.

Net revenue impacts are separated into five components; Fallowed land, Groundwater pumping costs, Irrigation Costs, CVP water costs and higher crop prices. The CVP water cost component represents the impact to net revenue from changes in both the quantity of CVP water used and the price of CVP water. Therefore when the blended CVP water price increases, farmers frequently use less, and the net impact to the CVP water cost component can be positive even when the water price is higher. Table 15 summarizes the net income impacts by component. A negative entry in the table indicates a reduction in net revenue. A complete list of changes in net income by component for each subregion is provided as Table 19.

Relatively small net income impacts are seen in all water supply sequences at the State level. The Average-Average sequence compared to the Average year Preferred Alternative shows a decline of \$2 million in net revenue for all of California. The Wet-Average scenario is estimated to have a net increase of approximately \$4 million and the Dry-Average sequence a decrease of \$12 million.

The net revenue impact in wet years relative to the Preferred Alternative wet results show a pattern similar to the Average year results. Dry years preceded by a series of Average and Wet years both show net decrease in revenue of about \$12 million while the Dry-Dry sequence results in a \$15 million decrease in State wide net revenue relative the Preferred Alternative Dry results.

Notice that following a series of dry years, the net revenue component associated with crop prices often results in a positive impact to net revenue. This occurs because some subregions are forced to reduce acreage because of higher blended CVP water prices, resulting in higher crop prices received for acreage that remains in production.

There is a negative impact to net revenue from irrigation costs in the Sacramento and San Joaquin River regions in each of the nine Long-Term Contract Renewal sequences. This impact is derived from the irrigation efficiency improvements induced by higher CVP water prices in the Average year sequences. The change in irrigation efficiency is carried through to the Wet and dry year sequences because they are short run analyses and irrigation technology is fixed in the short run. The increase in irrigation efficiency results in a reduction in the total water used in some subregions while irrigated acreage remains constant.

WATER USE

Table 16 summarizes water use changes by region. A complete list of changes in CVP water use and groundwater use by subregion is provided as Table 20. Water supplies other than CVP project water and groundwater are unaffected and not shown. The San Joaquin River region and most of the sequences for the Sacramento River region show the typical response represented by a shift away from CVP supplies to groundwater as CVP water becomes more expensive under the new pricing schemes. The Tulare Lake region and the Sacramento River region during wet years preceded by a series of Average and Wet years show what would be considered an atypical response.

In the Sacramento River region when five years of Wet and Average conditions are followed by a wet year, the model predicts that both groundwater and CVP water use will decline relative to the Preferred Alternative Wet condition. The decrease in groundwater use is mostly attributed to subregion 3b. In this subregion in a wet year coming out of a series of Average or Wet years the blended price is cheaper than the Preferred Alternative Tier 2 water cost as well as the cost of pumping groundwater. Therefore there is a shift away from groundwater to CVP supplies. In Average years preceded by Average or Wet years, the subregion is prevented from shifting to CVP because they are already using their full CVP supply.

In the Tulare Lake region there is a pattern of shifting from groundwater to CVP water that can be attributed to subregions 17. This subregion shifts because under the blended pricing scheme the CVP water becomes cheaper than pumping groundwater; therefore they maximize their CVP water use.

In average and wet years preceded by a series of dry years, there is a large decrease in CVP water use in both the Sacramento and San Joaquin River regions. This is driven by the relatively high cost of CVP supplies under these conditions. Since many subregions receive less water in dry years, or the water falls into the higher tiers and it becomes unaffordable, and the base from which the blended price tier quantities is calculated shrinks. This sets up a condition where when an Average or Wet year comes along, the additional water is classified as Category 2 and assessed the full cost price. The CVP blended price is a weighted average of all CVP supplies therefore the cost for all CVP water increases and the supplies often become unaffordable.

LOCALIZED IMPACTS

Certain subregions are substantially affected by the proposed water pricing.

- The Tehama-Colusa service area is the most-affected region. Limited groundwater availability and very high full-cost price relative to the value of water in agricultural production result in almost 60,000 acres out of production in the Dry-Average sequence and substantially higher cost for lands remaining in production. This analysis shows a one-year snapshot. Because water pricing is based on historic delivery, a region (such as the Tehama-Colusa region) may never be able to “buy its way” back out from a drought. Looked at over a sequence of dry years such as 1928-34 or 1987-92, many or most of the districts in this area could not survive as CVP contractors.
- The analysis predicts that the Delta subregion will make a complete switch to groundwater supplies in all nine hydrologic sequences, assuming groundwater is available in all parts of the service area.
- The analysis estimates that the once an extended drought is experienced the Delta-Mendota service area would switch from its CVP water service supply to groundwater, assuming groundwater is available in all parts of the service area.
- Westlands Water District and many of the Friant Unit contractors would likely continue purchasing CVP water. Since these areas continue to purchase CVP supplies in all years coming out of drought conditions, they would eventually build their base deliveries up or "buy their way" back to pre-drought tier quantities and prices.

**TABLE 1
CVPM SUBREGIONS AND DESCRIPTIONS**

CVPM Subregion	Description of Major Water Users
1	CVP Users: Anderson Cottonwood, Clear Creek, Bella Vista, Sacramento River miscellaneous users.
2	CVP Users: Corning Canal, Kirkwood, Tehema, Sacramento River, miscellaneous users.
3	CVP Users: Glenn Colusa ID, Provident, Princeton-Codora, Maxwell, and Colusa Basin Drain MWC.
3B	Tehama Colusa Canal Service Area. CVP Users: Orland-Artois WD, most of County of Colusa, Davis, Dunnigan, Glide Kanawha, La Grande, Westside WD.
4	CVP Users: Princeton-Codora-Glenn, Colusa Irrigation Co., Meridian Farm WC, Pelger Mutual WC, Recl. Dist. 1004, Recl. Dist. 108, Robers Ditch, Sartain M.D., Sutter MWC, Swinford Tract IC, Tisdale Irrigation, Sacramento River miscellaneous users.
5	Most Feather River Region riparian and appropriative users.
6	Yolo, Solano Counties. CVP Users: Conaway Ranch, Sacramento River miscellaneous users.
7	Sacramento Co. north of American River. CVP Users: Natomas Central MWC, Sacramento River miscellaneous users, Pheasant Grove-Verona, San Juan Suburban.
8	Sacramento Co. south of American River, San Joaquin Co.
9	Delta Regions. CVP Users: Banta Carbona, West Side, Plainview.
10	Delta Mendota Canal. CVP Users: Pacheco, Del Puerto, Hospital, Sunflower, West Stanislaus, Mustang, Orestimba, Patterson, Foothill, San Luis WD, Broadview, Eagle Field, Mercy Springs, Pool Exchange Contractors, Schedule II water rights, more.
11	Stanislaus River water rights: Modesto ID, Oakdale ID, South San Joaquin ID.
12	Turlock ID.
13	Merced ID. CVP Users: Madera, Chowchilla, Gravely Ford.
14	CVP Users: Westlands WD.
15	Tulare Lake Bed. CVP Users: Fresno Slough, James, Tranquility, Traction Ranch, Laguna, Real. Dist. 1606.
16	Eastern Fresno Co. CVP Users: Friant-Kern Canal. Fresno ID, Garfield, International.
17	CVP Users: Friant-Kern Canal. Hills Valley, Tri-Valley Orange Cove.
18	CVP Users: Friant-Kern Canal, County of Fresno, Lower Tule River ID, Pixley ID, portion of Rag Gulch, Ducor, County of Tulare, most of Delano Earlimart, Exeter, Ivanhoe, Lewis Cr., Lindmore, Lindsay-Strathmore, Porterville, Sausalito, Stone Corral, Tea Pot Dome, Terra Bella, Tulare.
19	Kern Co. SWP Service Area.
20	CVP Users: Friant-Kern Canal. Shafter-Wasco, S. San Joaquin.
21	CVP Users: Cross Valley Canal, Friant-Kern Canal. Arvin Edison.

TABLE 2

CVP WATER RATES USED FOR LONG TERM CONTRACT RENEWAL ANALYSIS (\$)

CVPM Subregion	Tiered Water Rates Used for LTCR analysis			Proposed Blended Water Rates for Water Service Contracts								
	Tier 1	Tier 2	Tier 3	Average	Wet	Dry	Average	Wet	Dry	Average	Wet	Dry
				Followed by Average			Followed by Wet			Followed by Dry		
1	12.01	37.56	63.12	19.67	14.98	14.14	23.91	19.67	18.20	25.19	21.09	19.67
2	10.71	36.40	62.09	18.42	10.71	49.66	29.55	18.42	52.83	10.71	10.71	18.42
3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3B	10.25	40.73	71.21	19.39	10.25	58.15	32.35	19.39	61.42	10.25	10.25	19.39
4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5	20.65	23.01	25.36	21.35	21.18	21.77	21.52	21.35	21.92	20.90	20.81	21.35
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	11.77	12.07	12.37	11.86	11.86	11.86	11.86	11.86	11.86	11.86	11.86	11.86
8	10.00	27.46	44.92	15.24	10.00	30.36	25.64	15.24	35.47	10.00	10.00	15.24
9	24.79	55.14	85.50	33.89	24.79	64.53	55.27	33.89	73.22	24.79	24.79	33.89
10	31.15	40.16	49.16	33.85	31.15	42.94	38.01	33.85	44.63	31.15	31.15	33.85
11	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	32.16	38.41	44.65	34.04	33.25	37.44	34.77	34.04	37.94	32.16	32.16	34.04
14	32.62	46.48	60.33	36.78	32.62	50.76	43.17	36.78	53.36	32.62	32.62	36.78
15	32.71	41.91	51.10	35.47	34.55	38.10	36.34	35.47	38.82	33.07	32.71	35.47
16	40.48	46.78	53.08	42.37	41.22	45.32	43.40	42.37	46.07	40.48	40.48	42.37
17	34.18	40.49	46.79	36.07	35.15	39.28	36.92	36.07	39.88	34.18	34.18	36.07
18	33.63	40.48	47.33	35.69	34.73	39.16	36.57	35.69	39.78	33.63	33.63	35.69
19	34.58	42.16	49.73	36.86	35.00	41.21	38.84	36.86	42.52	34.58	34.58	36.86
20	34.58	42.16	49.73	36.86	35.70	40.85	37.92	36.86	41.58	34.58	34.58	36.86
21	32.70	39.00	45.31	34.59	32.98	39.01	36.33	34.59	40.03	32.70	32.70	34.59

NOTES:

1. Blended rates used pricing components from the November, 1999 Irrigation Water Rates spreadsheets, Restoration Charge of \$7.00
2. PEIS rates used regional estimates of payment capacity and allowed the same ATP relief in all tiers.
3. Blended rates use most recent available payment capacity studies from Reclamation, and allow ATP relief in Tier 1 but not in Tier 3.
4. Only Class 1 rates are shown for Friant Division. Friant surcharge is \$7.00 in all rates.

TABLE 3

CVP WATER RATES USED IN PREFERRED ALTERNATIVE (\$)

CVPM Subregion	Tiered Water Rates Used in the PEIS Preferred Alternative (\$)		
	Tier 1	Tier 2	Tier 3
1	5.91	14.63	23.35
2	11.83	24.7	37.57
3	2.83	5.27	7.71
3B	17.16	36.225	55.29
4	5.32	7.625	9.93
5	4.53	6.965	9.4
6	4.53	6.82	9.11
7	6.63	8.83	11.03
8	4.53	7.095	9.66
9	28.54	35.245	41.95
10	33.46	40.015	46.57
11	0	0	0
12	0	0	0
13	33.65	39.395	45.14
14	39.31	54.385	69.46
15	28.16	34.875	41.59
16	38.25	44.255	50.26
17	35.58	41.905	48.23
18	35.01	41.255	47.5
19	36.68	42.885	49.09
20	36.68	42.885	49.09
21	35.4	42.01	48.62

NOTES:
 1. PEIS rates used pricing components from the 1994 Irrigation Water Rates Manual, Restoration Charge of \$6.50
 2. PEIS rates used regional estimates of payment capacity and allowed the same ATP relief in all tiers.
 3. Only Class 1 rates are shown for Friant Division. Friant surcharge is \$7.00 in all rates.

TABLE 4

**PROJECT WATER APPLIED BY PRICING TIERS
AVERAGE YEAR FOLLOWING AVERAGE 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	9.4	1.2	1.2	-	\$ 19.67
2	21.9	2.7	2.7	-	\$ 18.42
3	-	-	-	-	NA
3B	159.7	20.0	20.0	-	\$ 19.39
4	-	-	-	-	NA
5	16.0	2.0	2.0	-	\$ 21.35
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	41.3	5.2	5.2	-	\$ 15.24
9	22.5	2.8	2.8	-	\$ 33.89
10	231.4	28.9	28.9	-	\$ 33.85
11	-	-	-	-	
12	-	-	-	-	
13	153.6	19.2	19.2	-	\$ 34.04
14	539.1	67.4	67.4	-	\$ 36.78
15	32.3	4.0	4.0	-	\$ 35.47
16	18.9	2.4	2.4	-	\$ 42.37
17	34.9	4.4	4.4	-	\$ 36.07
18	484.2	60.5	60.5	-	\$ 35.69
19	13.1	1.6	1.6	-	\$ 36.86
20	194.2	24.3	24.3	-	\$ 36.86
21	129.7	16.2	16.2	-	\$ 34.59

Table 5

**PROJECT WATER APPLIED BY PRICING TIERS
AVERAGE YEAR FOLLOWING WET 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	10.4	1.3	0.0	-	\$ 14.98
2	27.3	-	-	-	\$ 10.71
3	-	-	-	-	NA
3B	199.6	-	-	-	\$ 10.25
4	-	-	-	-	NA
5	16.6	2.1	1.2	-	\$ 21.18
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	51.6	-	-	-	\$ 10.00
9	28.2	-	-	-	\$ 24.79
10	289.2	-	-	-	\$ 31.15
11	-	-	-	-	NA
12	-	-	-	-	NA
13	165.0	20.6	6.3	-	\$ 33.25
14	673.8	-	-	-	\$ 32.62
15	34.2	4.3	1.9	-	\$ 34.55
16	21.0	2.6	0.1	-	\$ 41.22
17	37.9	4.7	1.0	-	\$ 35.15
18	523.8	65.5	15.9	-	\$ 34.73
19	15.5	0.9	-	-	\$ 35.00
20	211.7	26.5	4.6	-	\$ 35.70
21	154.9	7.2	-	-	\$ 32.98

Table 6

**PROJECT WATER APPLIED BY PRICING TIERS
AVERAGE YEAR FOLLOWING DRY 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	10.8	1.0	-	-	\$ 14.14
2	6.2	0.8	0.8	19.6	\$ 49.66
3	-	-	-	-	NA
3B	40.2	5.0	5.0	149.3	\$ 58.15
4	-	-	-	-	NA
5	14.3	1.8	1.8	2.1	\$ 21.77
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	20.2	2.5	2.5	26.3	\$ 30.36
9	9.2	1.1	1.1	16.7	\$ 64.53
10	94.0	11.8	11.8	171.7	\$ 42.94
11	-	-	-	-	NA
12	-	-	-	-	NA
13	104.4	13.0	13.0	61.6	\$ 37.44
14	219.1	27.4	27.4	400.0	\$ 50.76
15	26.8	3.4	3.4	6.8	\$ 38.10
16	13.7	1.7	1.7	6.5	\$ 45.32
17	24.5	3.1	3.1	13.1	\$ 39.28
18	339.7	42.5	42.5	180.6	\$ 39.16
19	8.7	1.1	1.1	5.6	\$ 41.21
20	133.9	16.7	16.7	75.3	\$ 40.85
21	76.2	9.5	9.5	66.8	\$ 39.01

Table 7

**PROJECT WATER APPLIED BY PRICING TIERS
WET YEAR FOLLOWING AVERAGE 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	9.4	1.2	1.2	1.3	\$ 23.91
2	21.9	2.7	2.7	9.4	\$ 29.55
3	-	-	-	-	NA
3B	159.7	20.0	20.0	66.6	\$ 32.35
4	-	-	-	-	NA
5	16.0	2.0	2.0	0.9	\$ 21.52
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	41.3	5.2	5.2	27.8	\$ 25.64
9	22.5	2.8	2.8	19.9	\$ 55.27
10	231.4	28.9	28.9	107.8	\$ 38.01
11	-	-	-	-	NA
12	-	-	-	-	NA
13	153.6	19.2	19.2	14.3	\$ 34.77
14	539.1	67.4	67.4	251.2	\$ 43.17
15	32.3	4.0	4.0	2.4	\$ 36.34
16	18.9	2.4	2.4	2.5	\$ 43.40
17	34.9	4.4	4.4	3.8	\$ 36.92
18	484.2	60.5	60.5	49.6	\$ 36.57
19	13.1	1.6	1.6	3.0	\$ 38.84
20	194.2	24.3	24.3	21.9	\$ 37.92
21	129.7	16.2	16.2	31.5	\$ 36.33

Table 8

**PROJECT WATER BY PRICING TIERS
WET YEAR FOLLOWING WET 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	10.4	1.3	1.3	-	\$ 19.67
2	29.4	3.7	3.7	-	\$ 18.42
3	-	-	-	-	NA
3B	212.9	26.6	26.6	-	\$ 19.39
4	-	-	-	-	NA
5	16.6	2.1	2.1	-	\$ 21.35
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	63.5	7.9	7.9	-	\$ 15.24
9	38.5	4.8	4.8	-	\$ 33.89
10	317.6	39.7	39.7	-	\$ 33.85
11	-	-	-	-	NA
12	-	-	-	-	NA
13	165.0	20.6	20.6	-	\$ 34.04
14	740.0	92.5	92.5	-	\$ 36.78
15	34.2	4.3	4.3	-	\$ 35.47
16	21.0	2.6	2.6	-	\$ 42.37
17	37.9	4.7	4.7	-	\$ 36.07
18	523.8	65.5	65.5	-	\$ 35.69
19	15.5	1.9	1.9	-	\$ 36.86
20	211.7	26.5	26.5	-	\$ 36.86
21	154.9	19.4	19.4	-	\$ 34.59

Table 9

**PROJECT WATER APPLIED BY PRICING TIERS
WET YEAR FOLLOWING DRY 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	10.8	1.3	0.9	-	\$ 18.20
2	6.2	0.8	0.8	28.9	\$ 52.83
3	-	-	-	-	NA
3B	40.2	5.0	5.0	215.9	\$ 61.42
4	-	-	-	-	NA
5	14.3	1.8	1.8	2.9	\$ 21.92
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	20.2	2.5	2.5	54.1	\$ 35.47
9	9.2	1.1	1.1	36.7	\$ 73.22
10	94.0	11.8	11.8	279.5	\$ 44.63
11	-	-	-	-	NA
12	-	-	-	-	NA
13	104.4	13.0	13.0	75.9	\$ 37.94
14	219.1	27.4	27.4	651.1	\$ 53.36
15	26.8	3.4	3.4	9.1	\$ 38.82
16	13.7	1.7	1.7	9.1	\$ 46.07
17	24.5	3.1	3.1	16.8	\$ 39.88
18	339.7	42.5	42.5	230.2	\$ 39.78
19	8.7	1.1	1.1	8.5	\$ 42.52
20	133.9	16.7	16.7	97.2	\$ 41.58
21	76.2	9.5	9.5	98.3	\$ 40.03

Table 10

**PROJECT WATER APPLIED BY PRICING TIERS
 DRY YEAR FOLLOWING AVERAGE 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	9.4	1.2	1.2	1.7	\$ 25.19
2	7.8	-	-	-	\$ 10.71
3	-	-	-	-	NA
3B	50.3	-	-	-	\$ 10.25
4	-	-	-	-	NA
5	16.0	1.9	-	-	\$ 20.90
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	25.3	-	-	-	\$ 10.00
9	11.5	-	-	-	\$ 24.79
10	117.5	-	-	-	\$ 31.15
11	-	-	-	-	NA
12	-	-	-	-	NA
13	130.4	-	-	-	\$ 32.16
14	273.9	-	-	-	\$ 32.62
15	32.3	1.3	-	-	\$ 33.07
16	17.1	-	-	-	\$ 40.48
17	30.6	-	-	-	\$ 34.18
18	424.6	-	-	-	\$ 33.63
19	10.9	-	-	-	\$ 34.58
20	167.4	-	-	-	\$ 34.58
21	95.3	-	-	-	\$ 32.70

Table 11

**PROJECT WATER APPLIED BY PRICING TIERS
 DRY YEAR FOLLOWING WET 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	10.4	1.3	1.3	0.4	\$ 21.09
2	7.8	-	-	-	\$ 10.71
3	-	-	-	-	NA
3B	50.3	-	-	-	\$ 10.25
4	-	-	-	-	NA
5	16.6	1.2	-	-	\$ 20.81
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	25.3	-	-	-	\$ 10.00
9	11.5	-	-	-	\$ 24.79
10	117.5	-	-	-	\$ 31.15
11	-	-	-	-	NA
12	-	-	-	-	NA
13	130.4	-	-	-	\$ 32.16
14	273.9	-	-	-	\$ 32.62
15	33.6	-	-	-	\$ 32.71
16	17.1	-	-	-	\$ 40.48
17	30.6	-	-	-	\$ 34.18
18	424.6	-	-	-	\$ 33.63
19	10.9	-	-	-	\$ 34.58
20	167.4	-	-	-	\$ 34.58
21	95.3	-	-	-	\$ 32.70

Table 12

**PROJECT WATER BY PRICING TIERS
DRY YEAR FOLLOWING DRY 5-YEAR BASE CONDITION**

CVPM Subregion	Tier 1	Tier 2	Tier 3	Category 2	Blended Price (\$/AF)
	(1000 AF)				
1	10.8	1.3	1.3	-	\$ 19.67
2	6.2	0.8	0.8	-	\$ 18.42
3	-	-	-	-	NA
3B	40.2	5.0	5.0	-	\$ 19.39
4	-	-	-	-	NA
5	14.3	1.8	1.8	-	\$ 21.35
6	-	-	-	-	NA
7	12.0	1.5	1.5	-	\$ 11.86
8	20.2	2.5	2.5	-	\$ 15.24
9	9.2	1.1	1.1	-	\$ 33.89
10	94.0	11.8	11.8	-	\$ 33.85
11	-	-	-	-	NA
12	-	-	-	-	NA
13	104.4	13.0	13.0	-	\$ 34.04
14	219.1	27.4	27.4	-	\$ 36.78
15	26.8	3.4	3.4	-	\$ 35.47
16	13.7	1.7	1.7	-	\$ 42.37
17	24.5	3.1	3.1	-	\$ 36.07
18	339.7	42.5	42.5	-	\$ 35.69
19	8.7	1.1	1.1	-	\$ 36.86
20	133.9	16.7	16.7	-	\$ 36.86
21	76.2	9.5	9.5	-	\$ 34.59

TABLE 13

IRRIGATED ACRES BY SUBREGION (1000 ACRES)

CVPM Subregion	Average Preferred Alternative	Change Compared to			Wet Preferred Alternative	Change Compared to			Dry Preferred Alternative	Change Compared to		
		Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
		followed by Average				followed by Wet				followed by Dry		
Sacramento River	2015.5	-1.7	-0.8	-65.3	2020.0	-4.4	-4.4	-53.0	1984.8	0.1	0.1	0.0
San Joaquin River	2526.6	-0.2	-0.2	-1.2	2529.1	-1.7	-1.6	-1.9	2505.9	-0.1	-0.1	-0.1
Tulare Lake	1992.4	0.0	0.0	-0.2	1996.2	-1.2	-1.2	-1.3	1953.7	0.1	0.1	0.1
San Felipe	50.7	0.0	0.0	0.0	69.5	0.0	0.0	0.0	22.2	0.0	0.0	0.0
California Total	6585.2	-1.9	-1.0	-66.7	6614.8	-7.3	-7.3	-56.2	6466.6	0.1	0.1	0.1

TABLE 14

VALUE OF PRODUCTION BY SUBREGION (Million \$)

CVPM Subregion	Average Preferred Alternative	Change Compared to			Wet Preferred Alternative	Change Compared to Wet			Dry Preferred Alternative	Change Compared to Dry PA		
		Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
		followed by Average				followed by Wet				followed by Dry		
Sacramento River	1,825.3	-0.4	-0.2	-37.6	1,828.0	-1.6	-1.6	-26.8	1,810.0	0.4	0.4	0.3
San Joaquin River	4,402.3	-0.1	-0.1	-1.0	4,403.8	-0.9	-0.9	-1.1	4,384.2	-0.2	-0.2	-0.2
Tulare Lake	3,876.3	0.0	0.0	-0.3	3,879.4	-1.0	-1.0	-1.1	3,842.7	0.1	0.1	0.1
San Felipe	68.0	0.0	0.0	0.0	70.0	0.0	0.0	0.0	44.0	0.0	0.0	0.0
California Total	10,172.0	-0.5	-0.4	-38.8	10,181.2	-3.6	-3.6	-28.9	10,080.8	0.3	0.3	0.3

TABLE 15

NET REVENUE CHANGES BY REGION (Million \$)

Cause of Net Revenue Change	Compared to Average Year			Compared to Wet Year PA			Compared to Dry Year PA		
	Average	Wet	Dry	Average	Wet	Dry	Average	Wet	Dry
	followed by Average			followed by Wet			followed by Dry		
Sacramento River									
Fallowed Land	-0.1	0.0	-6.7	-0.3	-0.3	-4.6	0.0	0.0	0.0
Groundwater Pumping Cost	-0.3	-0.3	-0.4	1.0	1.0	-4.5	-0.2	-0.2	-0.2
Irrigation Cost	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
CVP Water Cost	-0.3	1.7	3.6	-5.1	-1.0	4.6	-0.1	-0.1	-0.7
Higher Crop Prices	0.0	0.0	1.9	0.1	0.1	1.0	0.0	0.0	0.0
Net Change	-1.0	1.0	-1.9	-4.6	-0.5	-3.8	-0.6	-0.6	-1.2
San Joaquin River									
Fallowed Land	0.0	0.0	-0.1	-0.2	-0.2	-0.2	0.0	0.0	0.0
Groundwater Pumping Cost	0.0	0.0	-10.3	-7.4	0.2	-14.1	-1.0	-1.0	-1.0
Irrigation Cost	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
CVP Water Cost	1.0	4.0	2.3	7.9	6.1	6.2	-5.9	-5.9	-7.5
Higher Crop Prices	0.1	0.0	2.5	0.2	0.2	1.0	0.0	0.0	0.0
Net Change	0.9	3.9	-5.7	0.4	6.1	-7.3	-7.0	-7.0	-8.6
Tulare Lake									
Fallowed Land	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0
Groundwater Pumping Cost	0.1	0.1	0.1	1.0	1.0	1.0	-3.2	-3.2	-3.2
Irrigation Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVP Water Cost	-2.3	-1.2	-5.7	-3.1	-2.1	-6.4	-0.9	-0.9	-2.3
Higher Crop Prices	0.0	0.0	1.4	0.1	0.1	0.4	0.0	0.0	0.0
Net Change	-2.1	-1.1	-4.2	-2.1	-1.1	-5.1	-4.1	-4.1	-5.5
San Felipe									
Fallowed Land	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Groundwater Pumping Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVP Water Cost	-0.2	0.0	-0.6	-0.5	-0.2	-0.9	0.0	0.0	-0.1
Higher Crop Prices	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Change	-0.2	0.0	-0.6	-0.5	-0.2	-0.9	0.0	0.0	-0.1
Total									
Fallowed Land	-0.1	-0.1	-6.9	-0.6	-0.6	-4.9	0.0	0.0	0.0
Groundwater Pumping Cost	-0.2	-0.2	-10.5	-5.3	2.2	-17.6	-4.4	-4.4	-4.4
Irrigation Cost	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
CVP Water Cost	-1.6	4.5	0.2	-0.3	3.1	4.5	-6.9	-6.8	-10.5
Higher Crop Prices	0.1	0.1	5.8	0.4	0.4	2.3	0.0	0.0	0.0
Net Change	-2.3	3.7	-11.9	-6.3	4.6	-16.1	-11.7	-11.7	-15.3

Note: A negative value in a cost category represents an increase in cost that produces a decrease in net revenue

**TABLE 16
IRRIGATION WATER APPLIED BY REGION (1000 AF)**

Region	Average Preferred Alternative	Change Compared to			Wet Preferred Alternative	Change Compared to Wet PA			Dry Preferred Alternative	Change Compared to Dry				
		Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry		
		followed by Average					followed by Wet					followed by Dry		
Sacramento River														
CVP Water*	625.9	-27.6	-23.4	-243.5	694.3	-2.4	-2.6	-305.5	402.1	-20.3	-20.3	-20.4		
Groundwater	2,621.3	10.5	10.7	11.2	2,456.9	-24.5	-24.3	114.7	3,261.6	4.1	4.2	4.0		
San Joaquin River														
CVP Water*	960.2	-8.7	-9.0	-269.0	1,226.6	-226.3	-21.0	-378.7	506	-17.5	-17.5	-17.5		
Groundwater	3,606.2	3.3	3.5	260.0	2,974.2	215.1	10.3	366.8	4723	12.0	12.0	12.0		
Tulare Lake														
CVP Water*	919.5	1.9	2.0	2.0	967.3	3.7	3.8	3.6	685.3	0.1	0.1	0.0		
Groundwater	3,369.0	-1.8	-2.0	-2.0	2,683.5	-7.7	-7.7	-7.5	4,542.9	0.0400	0.0400	0.0400		
San Felipe														
CVP Water*	71.0	0.0	0.0	0.0	71.0	0.0	0.0	0.0	71.0	0.0	0.0	0.0		
Groundwater	na	na	na	na	na	na	na	na	na	na	na	na		
Total														
CVP Water*	2,505.5	-34.4	-30.4	-510.5	2,888.2	-224.9	-19.9	-680.6	1,593.9	-37.7	-37.8	-37.8		
Groundwater	9,596.5	11.9	12.3	269.2	8,114.6	182.8	-21.6	474.0	12,527.1	16.1	16.2	16.1		

*CVP water applied is project water only. It excludes exchange contract delivery and the base supply portion of settlement contracts.

**TABLE 17
IRRIGATED ACREAGE BY SUBREGION**

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CVPM Sub-region	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
1	Pasture	18.3	-1.2	-0.3	-0.1	18.3	-1.5	-1.5	-1.5	18.1	-1.8	-1.8	-1.8
	Alfalfa	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0
	Other Field Crops	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0
	Deciduous Orchard	3.8	0.0	0.0	0.0	3.8	0.0	0.0	0.0	3.8	0.0	0.0	0.0
	Small Grain	2.4	0.0	0.0	0.0	2.4	0.0	0.0	0.0	2.4	0.0	0.0	0.0
	Subtotal	26.6	-1.3	-0.3	-0.1	26.5	-1.6	-1.6	-1.6	26.3	-1.9	-1.9	-1.9
2	Pasture	34.1	0.0	0.0	-3.6	33.9	0.0	0.0	-5.9	33.1	0.0	0.0	0.0
	Alfalfa	9.5	0.0	0.0	-0.3	9.5	0.0	0.0	-0.6	9.4	0.0	0.0	0.0
	Sugar Beets	4.0	0.0	0.0	0.0	4.0	0.0	0.0	-0.1	4.0	0.0	0.0	0.0
	Other Field Crops	17.3	0.0	0.0	-0.5	17.2	0.0	0.0	-0.7	17.1	0.0	0.0	0.0
	Rice	4.5	0.0	0.0	-0.2	4.5	0.0	0.0	-0.3	4.5	0.0	0.0	0.0
	Truck Crops	15.5	0.0	0.0	0.0	15.5	0.0	0.0	0.0	15.5	0.0	0.0	0.0
	Deciduous Orchard	86.0	0.0	0.0	-0.1	86.0	0.0	0.0	0.0	86.0	0.0	0.0	0.0
	Small Grain	14.0	0.0	0.0	-0.2	13.9	0.0	0.0	-0.6	13.7	0.0	0.0	0.0
	Subtropical Orchard	10.2	0.0	0.0	0.0	10.2	0.0	0.0	0.0	10.2	0.0	0.0	0.0
Subtotal	195.0	0.0	0.0	-4.9	194.7	0.0	0.0	-8.2	193.5	0.0	0.0	0.0	
3	Pasture	7.8	0.0	0.0	0.0	7.9	0.0	0.0	0.0	7.5	0.0	0.0	0.0
	Alfalfa	18.2	0.0	0.0	0.0	18.3	0.0	0.0	0.0	18.0	0.0	0.0	0.0
	Sugar Beets	9.9	0.0	0.0	0.0	9.9	0.0	0.0	0.0	9.8	0.0	0.0	0.0
	Other Field Crops	15.7	0.0	0.0	0.0	15.8	0.0	0.0	0.0	15.5	0.0	0.0	0.0
	Rice	138.9	0.0	0.0	0.0	139.5	0.0	0.0	0.0	136.7	0.0	0.0	0.0
	Truck Crops	25.2	0.0	0.0	0.0	25.2	0.0	0.0	0.0	25.2	0.0	0.0	0.0
	Tomatoes	25.9	0.0	0.0	0.0	25.9	0.0	0.0	0.0	25.8	0.0	0.0	0.0
	Deciduous Orchard	17.8	0.0	0.0	0.0	17.8	0.0	0.0	0.0	17.8	0.0	0.0	0.0
	Small Grain	30.5	0.0	0.0	0.0	30.6	0.0	0.0	0.0	29.8	0.0	0.0	0.0
	Subtotal	289.8	0.0	0.0	0.0	290.7	0.0	0.0	0.0	286.2	0.0	0.0	0.0
3B	Pasture	5.7	0.0	0.0	-5.7	5.8	0.1	0.1	-1.5	4.3	0.0	0.0	0.0
	Alfalfa	10.1	0.0	0.0	-10.1	10.2	0.1	0.1	-2.6	7.6	0.0	0.0	0.0
	Sugar Beets	5.6	0.0	0.0	-5.3	5.6	0.0	0.0	-2.8	5.1	0.0	0.0	0.0
	Other Field Crops	13.4	0.0	0.0	-13.4	13.5	0.0	0.0	-13.5	10.4	0.0	0.0	0.0
	Rice	9.6	0.0	0.0	-9.6	9.7	0.1	0.1	-9.7	6.2	0.0	0.0	0.0
	Truck Crops	0.6	0.0	0.0	-0.1	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0
	Tomatoes	6.1	0.0	0.0	-3.8	6.1	0.0	0.0	-1.8	5.7	0.0	0.0	0.0
	Deciduous Orchard	26.9	0.0	0.0	-3.3	26.9	0.0	0.0	0.0	26.9	0.0	0.0	0.0
	Small Grain	8.5	0.0	0.0	-8.5	8.6	0.0	0.0	-8.6	6.2	0.0	0.0	0.0
	Subtropical Orchard	1.0	0.0	0.0	-0.1	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Subtotal	87.6	0.0	0.0	-59.9	87.9	0.3	0.3	-40.4	74.0	0.0	0.0	0.0	

TABLE 17
IRRIGATED ACREAGE BY SUBREGION

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CVPM Sub- region	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
4	Pasture	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.1	0.0	0.0	0.0
	Alfalfa	6.8	0.0	0.0	0.0	6.8	0.0	0.0	0.0	6.8	0.0	0.0	0.0
	Sugar Beets	10.3	0.0	0.0	0.0	10.3	0.0	0.0	0.0	10.3	0.0	0.0	0.0
	Other Field Crops	40.1	0.0	0.0	0.0	40.1	0.0	0.0	0.0	39.8	0.0	0.0	0.0
	Rice	87.8	0.0	0.0	0.0	87.9	0.0	0.0	0.0	87.1	0.0	0.0	0.0
	Truck Crops	17.1	0.0	0.0	0.0	17.1	0.0	0.0	0.0	17.1	0.0	0.0	0.0
	Tomatoes	34.1	0.0	0.0	0.0	34.1	0.0	0.0	0.0	34.0	0.0	0.0	0.0
	Deciduous Orchard	30.6	0.0	0.0	0.0	30.6	0.0	0.0	0.0	30.6	0.0	0.0	0.0
	Small Grain	47.5	0.0	0.0	0.0	47.6	0.0	0.0	0.0	46.8	0.0	0.0	0.0
	Subtotal	275.3	0.0	0.0	0.0	275.7	0.0	0.0	-0.1	273.6	0.0	0.0	0.0
5	Pasture	21.4	0.0	0.0	0.0	21.5	0.0	0.0	0.0	21.0	0.0	0.0	0.0
	Alfalfa	4.7	0.0	0.0	0.0	4.7	0.0	0.0	0.0	4.7	0.0	0.0	0.0
	Sugar Beets	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
	Other Field Crops	15.4	0.0	0.0	0.0	15.4	0.0	0.0	0.0	15.4	0.0	0.0	0.0
	Rice	166.0	0.0	0.0	0.0	166.6	-0.1	-0.1	-0.1	165.2	-0.1	-0.1	-0.1
	Truck Crops	6.6	0.0	0.0	0.0	6.6	0.0	0.0	0.0	6.6	0.0	0.0	0.0
	Tomatoes	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0
	Deciduous Orchard	121.6	0.0	0.0	0.0	121.6	0.0	0.0	0.0	121.6	0.0	0.0	0.0
	Small Grain	22.3	0.0	0.0	0.0	22.4	0.0	0.0	0.0	21.9	0.0	0.0	0.0
	Subtropical Orchard	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0
Subtotal	364.1	0.0	0.0	0.0	364.9	-0.2	-0.2	-0.1	362.4	-0.2	-0.2	-0.2	
6	Pasture	12.1	0.0	0.0	0.0	12.5	-0.4	-0.4	-0.4	11.8	0.0	0.0	0.0
	Alfalfa	28.7	0.0	0.0	0.1	29.0	-0.3	-0.3	-0.3	28.6	0.0	0.0	0.0
	Sugar Beets	21.2	0.0	0.0	0.0	21.2	-0.1	-0.1	-0.1	21.1	0.0	0.0	0.0
	Other Field Crops	59.4	0.0	0.0	0.0	59.9	-0.5	-0.5	-0.5	59.1	0.0	0.0	0.0
	Rice	12.9	0.0	0.0	0.0	13.1	-0.2	-0.2	-0.2	12.8	0.0	0.0	0.0
	Truck Crops	3.4	0.0	0.0	0.0	3.4	0.0	0.0	0.0	3.4	0.0	0.0	0.0
	Tomatoes	45.8	0.0	0.0	0.0	45.9	-0.1	-0.1	-0.1	45.7	0.0	0.0	0.0
	Deciduous Orchard	24.6	0.0	0.0	0.0	24.6	0.0	0.0	0.0	24.6	0.0	0.0	0.0
	Small Grain	64.3	0.0	0.0	0.0	64.6	-0.4	-0.4	-0.4	63.3	0.2	0.2	0.2
	Grapes	8.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0
Subtotal	280.2	0.0	0.0	0.0	282.2	-1.9	-1.9	-1.8	278.4	0.2	0.2	0.2	
7	Pasture	14.5	0.0	0.0	0.0	14.5	0.0	0.0	0.0	14.2	0.0	0.0	0.0
	Alfalfa	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0
	Sugar Beets	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0
	Other Field Crops	3.8	0.0	0.0	0.0	3.8	0.0	0.0	0.0	3.8	0.0	0.0	0.0
	Rice	48.3	0.0	0.0	0.0	48.3	0.0	0.0	0.0	47.9	0.0	0.0	0.0
	Truck Crops	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0
	Tomatoes	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	Deciduous Orchard	8.9	0.0	0.0	0.0	8.9	0.0	0.0	0.0	8.9	0.0	0.0	0.0
	Small Grain	9.4	0.0	0.0	0.0	9.3	0.0	0.0	0.0	9.2	0.0	0.0	0.0
	Grapes	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Subtotal	91.4	0.0	0.0	0.0	91.5	0.0	0.0	0.0	90.5	0.0	0.0	0.0	

**TABLE 17
IRRIGATED ACREAGE BY SUBREGION**

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CVPM Sub- region	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
8	Pasture	47.7	0.0	0.0	0.0	47.6	0.0	0.0	0.0	46.9	0.0	0.0	0.0
	Alfalfa	12.3	0.0	0.0	0.0	12.3	0.0	0.0	0.0	12.2	0.0	0.0	0.0
	Sugar Beets	12.8	0.0	0.0	0.0	12.8	0.0	0.0	0.0	12.8	0.0	0.0	0.0
	Other Field Crops	42.7	0.0	0.0	0.0	42.7	0.0	0.0	0.0	42.5	0.0	0.0	0.0
	Rice	4.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0
	Truck Crops	17.1	0.0	0.0	0.0	17.1	0.0	0.0	0.0	17.1	0.0	0.0	0.0
	Tomatoes	12.9	0.0	0.0	0.0	12.9	0.0	0.0	0.0	12.9	0.0	0.0	0.0
	Deciduous Orchard	46.9	0.0	0.0	0.0	46.9	0.0	0.0	0.0	46.9	0.0	0.0	0.0
	Small Grain	29.0	0.0	0.0	0.0	29.1	0.0	0.0	0.0	28.2	0.0	0.0	0.0
	Grapes	58.9	0.0	0.0	0.0	58.9	0.0	0.0	0.0	58.9	0.0	0.0	0.0
	Subtotal	284.8	0.0	0.0	0.0	284.9	0.0	0.0	0.0	282.8	0.0	0.0	0.0
9	Pasture	24.6	-0.2	-0.2	-0.1	24.6	-0.4	-0.4	-0.4	23.4	0.7	0.7	0.7
	Alfalfa	43.8	-0.1	-0.1	0.0	43.8	-0.2	-0.2	-0.2	43.1	0.4	0.4	0.4
	Sugar Beets	28.6	0.0	0.0	0.0	28.6	-0.1	-0.1	0.0	28.5	0.1	0.1	0.1
	Other Field Crops	114.9	-0.2	-0.2	-0.2	115.0	-0.4	-0.4	-0.4	113.6	0.7	0.7	0.7
	Rice	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0
	Truck Crops	46.0	0.0	0.0	0.0	46.0	0.0	0.0	0.0	46.0	0.0	0.0	0.0
	Tomatoes	42.5	0.0	0.0	0.0	42.5	0.0	0.0	0.0	42.3	0.1	0.1	0.1
	Deciduous Orchard	21.3	0.0	0.0	0.0	21.3	0.0	0.0	0.0	21.3	0.0	0.0	0.0
	Small Grain	96.8	-0.1	-0.1	-0.1	97.5	-0.3	-0.3	-0.3	93.7	1.0	1.0	1.0
	Grapes	5.8	0.0	0.0	0.0	5.8	0.0	0.0	0.0	5.8	0.0	0.0	0.0
	Subtotal	425.0	-0.6	-0.6	-0.4	425.9	-1.5	-1.5	-1.4	418.4	3.0	3.0	3.0
10	Pasture	13.3	0.0	0.0	-0.2	13.3	0.0	0.0	0.0	13.3	0.0	0.0	0.0
	Alfalfa	40.8	0.0	0.0	-0.3	40.9	-0.1	0.0	-0.1	40.8	0.0	0.0	0.0
	Sugar Beets	13.9	0.0	0.0	0.0	13.9	0.0	0.0	0.0	13.9	0.0	0.0	0.0
	Other Field Crops	48.2	0.0	0.0	-0.1	48.2	0.1	0.0	0.0	48.3	0.0	0.0	0.0
	Rice	2.9	0.0	0.0	0.0	2.9	0.0	0.0	0.0	2.9	0.0	0.0	0.0
	Truck Crops	112.9	0.0	0.0	0.0	112.9	0.0	0.0	0.0	113.0	0.0	0.0	0.0
	Tomatoes	40.2	0.0	0.0	0.0	40.2	0.0	0.0	0.0	40.2	0.0	0.0	0.0
	Deciduous Orchard	36.6	0.0	0.0	0.0	36.6	0.0	0.0	0.0	36.6	0.0	0.0	0.0
	Small Grain	14.0	0.0	0.0	0.0	14.0	0.1	0.0	0.1	14.0	0.0	0.0	0.0
	Grapes	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Cotton	103.1	0.0	0.0	-0.5	103.1	-0.1	0.0	-0.1	103.1	0.0	0.0	0.0
	Subtropical Orchard	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Subtotal	427.1	0.0	0.0	-1.1	427.2	-0.1	0.0	-0.1	427.1	0.0	0.0	0.0
11	Pasture	42.9	0.0	0.0	0.0	43.0	0.0	0.0	0.0	42.7	0.0	0.0	0.0
	Alfalfa	8.4	0.0	0.0	0.0	8.4	0.0	0.0	0.0	8.3	0.0	0.0	0.0
	Sugar Beets	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Other Field Crops	17.8	0.0	0.0	0.0	17.9	0.0	0.0	0.0	17.8	0.0	0.0	0.0
	Rice	4.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0
	Truck Crops	6.3	0.0	0.0	0.0	6.3	0.0	0.0	0.0	6.3	0.0	0.0	0.0
	Tomatoes	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0
	Deciduous Orchard	80.8	0.0	0.0	0.0	80.8	0.0	0.0	0.0	80.8	0.0	0.0	0.0
	Small Grain	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0
	Grapes	10.4	0.0	0.0	0.0	10.4	0.0	0.0	0.0	10.4	0.0	0.0	0.0
	Subtotal	174.0	0.0	0.0	0.0	174.2	0.0	0.0	0.0	173.7	0.0	0.0	0.0

TABLE 17
IRRIGATED ACREAGE BY SUBREGION

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CVPM Sub- region	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
12	Pasture	18.3	0.0	0.0	0.0	18.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0
	Alfalfa	18.2	0.0	0.0	0.0	18.1	0.0	0.0	0.0	18.1	0.0	0.0	0.0
	Sugar Beets	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Other Field Crops	41.2	0.0	0.0	0.0	41.0	0.0	0.0	0.0	41.0	0.0	0.0	0.0
	Truck Crops	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
	Deciduous Orchard	94.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0
	Small Grain	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0
	Grapes	14.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0
	Cotton	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Subtropical Orchard	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Subtotal	200.8	0.0	0.0	0.0	200.2	0.0	0.0	0.0	200.1	0.0	0.0	0.0
13	Pasture	39.6	0.0	0.0	0.0	39.9	-0.2	-0.2	-0.3	39.5	-0.3	-0.3	-0.3
	Alfalfa	41.8	0.0	0.0	0.1	42.1	-0.2	-0.2	-0.2	41.8	-0.2	-0.2	-0.2
	Sugar Beets	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0
	Other Field Crops	54.8	0.0	0.0	0.0	55.0	-0.1	-0.1	-0.2	54.6	-0.1	-0.1	-0.1
	Rice	3.9	0.0	0.0	0.0	3.9	0.0	0.0	0.0	3.9	0.0	0.0	0.0
	Truck Crops	18.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0
	Tomatoes	7.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0
	Deciduous Orchard	135.0	0.0	0.0	0.0	135.0	0.0	0.0	0.0	135.0	0.0	0.0	0.0
	Small Grain	46.9	0.0	0.0	0.0	47.2	-0.1	-0.1	-0.1	46.4	-0.1	-0.1	-0.1
	Grapes	99.0	0.0	0.0	0.0	99.0	0.0	0.0	0.0	99.0	0.0	0.0	0.0
	Cotton	71.8	0.0	0.0	0.0	72.1	-0.2	-0.2	-0.3	71.6	-0.2	-0.2	-0.2
Subtropical Orchard	9.9	0.0	0.0	0.0	9.9	0.0	0.0	0.0	9.9	0.0	0.0	0.0	
	Subtotal	532.5	0.0	0.0	0.0	534.1	-0.9	-0.9	-1.1	531.6	-0.9	-0.9	-0.9
14	Pasture	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Alfalfa	14.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	13.4	0.0	0.0	0.0
	Sugar Beets	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0
	Other Field Crops	18.4	0.0	0.0	0.0	18.3	0.0	0.0	0.0	17.9	0.0	0.0	0.0
	Truck Crops	136.4	0.0	0.0	0.0	136.4	0.0	0.0	0.0	136.2	0.0	0.0	0.0
	Tomatoes	77.0	0.0	0.0	0.1	77.0	0.0	0.0	0.0	76.2	0.0	0.0	0.0
	Deciduous Orchard	24.9	0.0	0.0	0.0	24.9	0.0	0.0	0.0	24.9	0.0	0.0	0.0
	Small Grain	10.4	0.0	0.0	0.0	10.4	0.0	0.0	0.0	9.7	0.0	0.0	0.0
	Grapes	7.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0
	Cotton	206.5	0.0	0.0	-0.1	206.6	0.0	0.0	0.0	198.8	0.0	0.0	0.0
	Subtropical Orchard	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Subtotal	500.4	0.0	0.0	0.0	500.5	0.0	0.0	0.0	489.9	0.0	0.0	0.0

**TABLE 17
IRRIGATED ACREAGE BY SUBREGION**

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CVPM Sub-region	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
15	Pasture	3.9	0.0	0.0	0.0	3.9	0.0	0.0	0.0	3.7	0.0	0.0	0.0
	Alfalfa	83.1	0.0	0.0	0.2	83.4	0.0	0.0	0.1	80.6	0.0	0.0	0.0
	Sugar Beets	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0
	Other Field Crops	86.0	0.0	0.0	0.0	86.1	0.0	0.0	0.0	84.2	0.0	0.0	0.0
	Rice	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Truck Crops	12.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0
	Tomatoes	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
	Deciduous Orchard	38.0	0.0	0.0	0.0	38.0	0.0	0.0	0.0	38.0	0.0	0.0	0.0
	Small Grain	71.0	0.0	0.0	0.0	71.6	0.0	0.0	0.0	67.9	0.0	0.0	0.0
	Grapes	56.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0
	Cotton	242.1	0.0	0.0	-0.2	242.7	0.0	0.0	-0.1	235.5	0.0	0.0	0.0
	Subtropical Orchard	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Subtotal	600.1	0.0	0.0	-0.1	601.7	0.0	0.0	0.0	585.9	0.0	0.0	0.0	
16	Pasture	6.2	0.0	0.0	0.0	6.3	-0.2	-0.2	-0.1	6.1	0.0	0.0	0.0
	Alfalfa	5.1	0.0	0.0	0.0	5.2	-0.1	-0.1	-0.1	5.1	0.0	0.0	0.0
	Other Field Crops	6.1	0.0	0.0	0.0	6.1	-0.1	-0.1	-0.1	6.0	0.0	0.0	0.0
	Truck Crops	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0
	Deciduous Orchard	16.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0
	Small Grain	4.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	4.0	0.0	0.0	0.0
	Grapes	55.0	0.0	0.0	0.0	55.0	0.0	0.0	0.0	55.0	0.0	0.0	0.0
	Cotton	5.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	5.0	0.0	0.0	0.0
	Subtropical Orchard	9.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0
	Subtotal	111.4	-0.1	-0.1	0.0	111.8	-0.4	-0.4	-0.4	111.3	-0.1	-0.1	-0.1
17	Pasture	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0
	Alfalfa	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
	Sugar Beets	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Other Field Crops	8.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0
	Truck Crops	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
	Tomatoes	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Deciduous Orchard	73.0	0.0	0.0	0.0	73.0	0.0	0.0	0.0	73.0	0.0	0.0	0.0
	Small Grain	6.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0
	Grapes	109.0	0.0	0.0	0.0	109.0	0.0	0.0	0.0	109.0	0.0	0.0	0.0
	Cotton	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	8.7	0.0	0.0	0.0
Subtropical Orchard	35.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0	
Subtotal	260.1	0.0	0.0	0.0	260.3	0.0	0.0	0.0	255.3	0.0	0.0	0.0	
18	Pasture	4.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	3.7	0.0	0.0	0.0
	Alfalfa	62.2	0.0	0.0	0.1	62.8	-0.3	-0.3	-0.2	59.0	0.0	0.0	0.0
	Sugar Beets	1.9	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.9	0.0	0.0	0.0
	Other Field Crops	78.1	0.0	0.0	-0.1	78.5	-0.2	-0.2	-0.2	75.3	0.0	0.0	0.0
	Truck Crops	13.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0
	Tomatoes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Deciduous Orchard	69.0	0.0	0.0	0.0	69.0	0.0	0.0	0.0	69.0	0.0	0.0	0.0
	Small Grain	41.0	0.0	0.0	0.0	41.4	-0.1	-0.1	-0.1	38.8	0.1	0.1	0.1
	Grapes	56.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0
	Cotton	170.3	0.0	0.0	-0.1	171.2	-0.5	-0.5	-0.5	163.7	0.0	0.0	0.1
Subtropical Orchard	97.0	0.0	0.0	0.0	97.0	0.0	0.0	0.0	97.0	0.0	0.0	0.0	
Subtotal	592.5	0.0	0.0	-0.1	594.9	-1.2	-1.2	-1.2	577.2	0.1	0.1	0.1	

**TABLE 17
IRRIGATED ACREAGE BY SUBREGION**

CVPM Sub- region	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
19	Pasture	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Alfalfa	25.8	0.0	0.0	0.0	25.9	0.0	0.0	0.0	25.2	0.0	0.0	0.0
	Sugar Beets	4.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0
	Other Field Crops	6.7	0.0	0.0	0.0	6.7	0.0	0.0	0.0	6.7	0.0	0.0	0.0
	Truck Crops	24.0	0.0	0.0	0.0	24.0	0.0	0.0	0.0	24.0	0.0	0.0	0.0
	Tomatoes	1.7	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.7	0.0	0.0	0.0
	Deciduous Orchard	50.9	0.0	0.0	0.0	50.9	0.0	0.0	0.0	50.9	0.0	0.0	0.0
	Small Grain	7.6	0.0	0.0	0.0	7.6	0.0	0.0	0.0	7.2	0.0	0.0	0.0
	Grapes	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
	Cotton	117.9	0.0	0.0	-0.1	117.8	0.0	0.0	0.0	115.1	0.0	0.0	0.0
	Subtropical Orchard	4.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
Subtotal	253.6	0.0	0.0	0.0	253.6	0.0	0.0	0.0	249.7	0.0	0.0	0.0	
20	Pasture	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Alfalfa	12.0	0.0	0.0	0.0	12.1	0.0	0.0	0.0	11.0	0.0	0.0	0.0
	Sugar Beets	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	Other Field Crops	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0
	Truck Crops	41.0	0.0	0.0	0.0	41.0	0.0	0.0	0.0	40.9	0.0	0.0	0.0
	Tomatoes	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0
	Deciduous Orchard	52.0	0.0	0.0	0.0	52.0	0.0	0.0	0.0	52.0	0.0	0.0	0.0
	Small Grain	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0
	Grapes	33.0	0.0	0.0	0.0	33.0	0.0	0.0	0.0	33.0	0.0	0.0	0.0
	Cotton	33.0	0.0	0.0	0.0	33.1	0.0	0.0	0.0	30.8	0.0	0.0	0.0
	Subtropical Orchard	27.0	0.0	0.0	0.0	27.0	0.0	0.0	0.0	27.0	0.0	0.0	0.0
Subtotal	202.8	0.0	0.0	0.0	203.0	0.0	0.0	0.0	199.3	0.0	0.0	0.0	
21	Pasture	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0
	Alfalfa	27.6	0.0	0.0	0.0	27.7	0.0	0.0	0.0	27.3	0.0	0.0	0.0
	Sugar Beets	7.4	0.0	0.0	0.0	7.4	0.0	0.0	0.0	7.4	0.0	0.0	0.0
	Other Field Crops	16.1	0.0	0.0	0.0	16.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0
	Rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Truck Crops	107.8	0.0	0.0	0.0	107.8	0.0	0.0	0.0	107.8	0.0	0.0	0.0
	Tomatoes	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Deciduous Orchard	25.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0
	Small Grain	1.8	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.8	0.0	0.0	0.0
	Grapes	36.9	0.0	0.0	0.0	36.9	0.0	0.0	0.0	36.9	0.0	0.0	0.0
	Cotton	120.8	0.0	0.0	-0.1	120.8	0.0	0.0	0.0	119.3	0.0	0.0	0.0
Subtropical Orchard	14.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	
Subtotal	359.2	0.0	0.0	0.0	359.2	0.0	0.0	0.0	357.2	0.0	0.0	0.0	

NOTES:

1. All acreage values in thousands.
2. A negative value represents a lower acreage in an alternative than in the Preferred Alternative.
3. Not all 12 crops are grown in all subregions.
4. Subregions 3 and 3B should be added together to get the complete subregion 3. 3B represents the area within this subregion served by the Tehama Colusa Canal.

TABLE 18
VALUE OF PRODUCTION BY SUBREGION (Million \$)

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CVPM Subregion	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
1	Pasture	2.7	-0.2	0.0	0.0	2.6	-0.2	-0.2	-0.2	2.6	-0.3	-0.3	-0.3
	Alfalfa	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	Other Field Crops	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	Deciduous Orchard	4.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
	Small Grain	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
	Subtotal	8.4	-0.2	-0.1	0.0	8.3	-0.3	-0.3	-0.3	8.3	-0.3	-0.3	-0.3
2	Pasture	4.9	0.0	0.0	-0.5	4.9	0.0	0.0	-0.8	4.8	0.0	0.0	0.0
	Alfalfa	5.1	0.0	0.0	-0.2	5.1	0.0	0.0	-0.3	5.0	0.0	0.0	0.0
	Sugar Beets	2.9	0.0	0.0	0.0	2.9	0.0	0.0	0.0	2.9	0.0	0.0	0.0
	Other Field Crops	7.8	0.0	0.0	-0.2	7.8	0.0	0.0	-0.3	7.7	0.0	0.0	0.0
	Rice	3.8	0.0	0.0	-0.1	3.8	0.0	0.0	-0.3	3.8	0.0	0.0	0.0
	Truck Crops	55.1	0.0	0.0	-0.1	55.1	0.0	0.0	-0.1	55.1	0.0	0.0	0.0
	Deciduous Orchard	91.3	0.0	0.0	-0.1	91.3	0.0	0.0	0.0	91.3	0.0	0.0	0.0
	Small Grain	4.0	0.0	0.0	-0.1	3.9	0.0	0.0	-0.2	3.9	0.0	0.0	0.0
	Subtropical Orchard	14.6	0.0	0.0	0.0	14.6	0.0	0.0	0.0	14.6	0.0	0.0	0.0
	Subtotal	189.5	0.0	0.0	-1.3	189.4	0.0	0.0	-2.1	189.1	0.0	0.0	0.0
3	Pasture	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0
	Alfalfa	9.7	0.0	0.0	0.0	9.7	0.0	0.0	0.0	9.6	0.0	0.0	0.0
	Sugar Beets	7.3	0.0	0.0	0.0	7.3	0.0	0.0	0.0	7.2	0.0	0.0	0.0
	Other Field Crops	7.1	0.0	0.0	0.0	7.1	0.0	0.0	0.0	7.0	0.0	0.0	0.0
	Rice	118.1	0.0	0.0	0.0	118.6	0.0	0.0	0.0	116.2	0.0	0.0	0.0
	Truck Crops	89.6	0.0	0.0	0.0	89.6	0.0	0.0	0.0	89.6	0.0	0.0	0.0
	Tomatoes	37.9	0.0	0.0	0.0	38.0	0.0	0.0	0.0	37.9	0.0	0.0	0.0
	Deciduous Orchard	18.9	0.0	0.0	0.0	18.9	0.0	0.0	0.0	18.9	0.0	0.0	0.0
	Small Grain	8.7	0.0	0.0	0.0	8.7	0.0	0.0	0.0	8.5	0.0	0.0	0.0
	Subtotal	298.4	0.0	0.0	0.0	299.0	0.0	0.0	0.0	295.9	0.0	0.0	0.0
3B	Pasture	0.8	0.0	0.0	-0.8	0.8	0.0	0.0	-0.2	0.6	0.0	0.0	0.0
	Alfalfa	5.4	0.0	0.0	-5.4	5.4	0.0	0.0	-1.4	4.1	0.0	0.0	0.0
	Sugar Beets	4.1	0.0	0.0	-3.9	4.1	0.0	0.0	-2.0	3.8	0.0	0.0	0.0
	Other Field Crops	6.1	0.0	0.0	-6.0	6.1	0.0	0.0	-6.1	4.7	0.0	0.0	0.0
	Rice	8.2	0.0	0.0	-8.2	8.2	0.0	0.0	-8.2	5.2	0.0	0.0	0.0
	Truck Crops	2.0	0.0	0.0	-0.2	2.0	0.0	0.0	-0.1	2.0	0.0	0.0	0.0
	Tomatoes	8.9	0.0	0.0	-5.6	8.9	0.0	0.0	-2.7	8.4	0.0	0.0	0.0
	Deciduous Orchard	28.6	0.0	0.0	-3.5	28.6	0.0	0.0	0.0	28.6	0.0	0.0	0.0
	Small Grain	2.4	0.0	0.0	-2.4	2.4	0.0	0.0	-2.4	1.8	0.0	0.0	0.0
	Subtropical Orchard	1.4	0.0	0.0	-0.1	1.4	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Subtotal	67.9	0.0	0.0	-36.2	68.1	0.1	0.1	-23.1	60.5	0.0	0.0	0.0	
4	Pasture	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	Alfalfa	3.6	0.0	0.0	0.0	3.7	0.0	0.0	0.0	3.6	0.0	0.0	0.0
	Sugar Beets	7.5	0.0	0.0	0.0	7.5	0.0	0.0	0.0	7.5	0.0	0.0	0.0
	Other Field Crops	18.0	0.0	0.0	0.0	18.1	0.0	0.0	0.0	17.9	0.0	0.0	0.0
	Rice	74.6	0.0	0.0	0.0	74.8	0.0	0.0	0.0	74.1	0.0	0.0	0.0
	Truck Crops	60.8	0.0	0.0	0.0	60.8	0.0	0.0	0.0	60.8	0.0	0.0	0.0
	Tomatoes	49.9	0.0	0.0	0.0	49.9	0.0	0.0	0.0	49.9	0.0	0.0	0.0
	Deciduous Orchard	32.5	0.0	0.0	0.0	32.5	0.0	0.0	0.0	32.5	0.0	0.0	0.0
	Small Grain	13.5	0.0	0.0	0.0	13.5	0.0	0.0	0.0	13.3	0.0	0.0	0.0
Subtotal	260.7	0.0	0.0	0.0	260.9	0.0	0.0	0.0	259.7	0.0	0.0	0.0	

TABLE 18
VALUE OF PRODUCTION BY SUBREGION (Million \$)

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CVPM Subregion	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
5	Pasture	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0	3.0	0.0	0.0	0.0
	Alfalfa	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0
	Sugar Beets	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0
	Other Field Crops	6.9	0.0	0.0	0.0	6.9	0.0	0.0	0.0	6.9	0.0	0.0	0.0
	Rice	141.2	0.0	0.0	0.0	141.7	-0.1	-0.1	-0.1	140.5	-0.1	-0.1	-0.1
	Truck Crops	23.5	0.0	0.0	0.0	23.5	0.0	0.0	0.0	23.5	0.0	0.0	0.0
	Tomatoes	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0
	Deciduous Orchard	129.1	0.0	0.0	0.0	129.1	0.0	0.0	0.0	129.1	0.0	0.0	0.0
	Small Grain	6.3	0.0	0.0	0.0	6.3	0.0	0.0	0.0	6.2	0.0	0.0	0.0
	Subtropical Orchard	3.6	0.0	0.0	0.0	3.6	0.0	0.0	0.0	3.6	0.0	0.0	0.0
Subtotal	320.0	0.0	0.0	0.0	320.5	-0.1	-0.1	-0.1	319.1	-0.1	-0.1	-0.1	
6	Pasture	1.7	0.0	0.0	0.0	1.8	-0.1	-0.1	-0.1	1.7	0.0	0.0	0.0
	Alfalfa	16.8	0.0	0.0	0.0	17.0	-0.2	-0.2	-0.2	16.8	0.0	0.0	0.0
	Sugar Beets	16.2	0.0	0.0	0.0	16.3	-0.1	-0.1	0.0	16.2	0.0	0.0	0.0
	Other Field Crops	28.9	0.0	0.0	0.0	29.2	-0.2	-0.2	-0.2	28.8	0.0	0.0	0.0
	Rice	10.6	0.0	0.0	0.0	10.8	-0.2	-0.2	-0.2	10.5	0.0	0.0	0.0
	Truck Crops	14.1	0.0	0.0	0.0	14.1	0.0	0.0	0.0	14.1	0.0	0.0	0.0
	Tomatoes	70.0	0.0	0.0	0.0	70.2	-0.1	-0.1	-0.1	70.0	0.0	0.0	0.0
	Deciduous Orchard	26.2	0.0	0.0	0.0	26.2	0.0	0.0	0.0	26.2	0.0	0.0	0.0
	Small Grain	21.9	0.0	0.0	0.0	22.0	-0.1	-0.1	-0.1	21.5	0.1	0.1	0.1
	Grapes	13.8	0.0	0.0	0.0	13.8	0.0	0.0	0.0	13.8	0.0	0.0	0.0
Subtotal	220.3	0.0	0.0	0.0	221.2	-0.9	-0.9	-0.9	219.6	0.0	0.0	0.0	
7	Pasture	2.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0
	Alfalfa	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0
	Sugar Beets	1.9	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.9	0.0	0.0	0.0
	Other Field Crops	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0
	Rice	39.6	0.0	0.0	0.0	39.7	0.0	0.0	0.0	39.3	0.0	0.0	0.0
	Truck Crops	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0
	Tomatoes	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0
	Deciduous Orchard	9.5	0.0	0.0	0.0	9.5	0.0	0.0	0.0	9.5	0.0	0.0	0.0
	Small Grain	3.2	0.0	0.0	0.0	3.2	0.0	0.0	0.0	3.1	0.0	0.0	0.0
	Grapes	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Subtotal	62.3	0.0	0.0	0.0	62.4	0.0	0.0	0.0	61.9	0.0	0.0	0.0	
8	Pasture	6.9	0.0	0.0	0.0	6.9	0.0	0.0	0.0	6.8	0.0	0.0	0.0
	Alfalfa	7.2	0.0	0.0	0.0	7.2	0.0	0.0	0.0	7.2	0.0	0.0	0.0
	Sugar Beets	9.8	0.0	0.0	0.0	9.8	0.0	0.0	0.0	9.8	0.0	0.0	0.0
	Other Field Crops	20.8	0.0	0.0	0.0	20.8	0.0	0.0	0.0	20.7	0.0	0.0	0.0
	Rice	3.7	0.0	0.0	0.0	3.7	0.0	0.0	0.0	3.7	0.0	0.0	0.0
	Truck Crops	70.9	0.0	0.0	0.0	70.9	0.0	0.0	0.0	70.9	0.0	0.0	0.0
	Tomatoes	19.8	0.0	0.0	0.0	19.8	0.0	0.0	0.0	19.7	0.0	0.0	0.0
	Deciduous Orchard	49.9	0.0	0.0	0.0	49.9	0.0	0.0	0.0	49.9	0.0	0.0	0.0
	Small Grain	9.2	0.0	0.0	0.0	9.2	0.0	0.0	0.0	8.9	0.0	0.0	0.0
	Grapes	101.7	0.0	0.0	0.0	101.7	0.0	0.0	0.0	101.7	0.0	0.0	0.0
Subtotal	299.9	0.0	0.0	0.0	300.0	0.0	0.0	0.0	299.3	0.0	0.0	0.0	
9	Pasture	3.6	0.0	0.0	0.0	3.6	-0.1	-0.1	-0.1	3.4	0.1	0.1	0.1
	Alfalfa	25.6	-0.1	-0.1	0.0	25.7	-0.1	-0.1	-0.1	25.2	0.2	0.2	0.2
	Sugar Beets	22.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	21.9	0.1	0.1	0.1
	Other Field Crops	55.9	-0.1	-0.1	-0.1	56.0	-0.2	-0.2	-0.2	55.3	0.3	0.3	0.3
	Rice	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
	Truck Crops	190.8	0.0	0.0	0.0	190.8	0.0	0.0	0.0	190.6	0.1	0.1	0.1
	Tomatoes	64.9	0.0	0.0	0.0	65.0	-0.1	-0.1	0.0	64.8	0.1	0.1	0.1
	Deciduous Orchard	22.7	0.0	0.0	0.0	22.7	0.0	0.0	0.0	22.7	0.0	0.0	0.0
	Small Grain	30.7	0.0	0.0	0.0	30.9	-0.1	-0.1	-0.1	29.7	0.3	0.3	0.3
	Grapes	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
Subtotal	426.8	-0.3	-0.3	-0.1	427.2	-0.6	-0.6	-0.6	424.2	1.2	1.2	1.2	

TABLE 18
VALUE OF PRODUCTION BY SUBREGION (Million \$)

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CVPM Subregion	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
10	Pasture	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0
	Alfalfa	23.6	0.0	0.0	-0.2	23.6	-0.1	0.0	-0.1	23.6	0.0	0.0	0.0
	Sugar Beets	12.2	0.0	0.0	0.0	12.2	0.0	0.0	0.0	12.2	0.0	0.0	0.0
	Other Field Crops	31.0	0.0	0.0	-0.1	31.0	0.0	0.0	0.0	31.0	0.0	0.0	0.0
	Rice	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0
	Truck Crops	718.0	0.0	0.0	0.0	717.9	0.1	0.0	0.1	718.1	0.0	0.0	0.0
	Tomatoes	60.1	0.0	0.0	0.0	60.1	0.0	0.0	0.0	60.1	0.0	0.0	0.0
	Deciduous Orchard	52.4	0.0	0.0	0.0	52.4	0.0	0.0	0.0	52.4	0.0	0.0	0.0
	Small Grain	7.6	0.0	0.0	0.0	7.5	0.1	0.0	0.1	7.6	0.0	0.0	0.0
	Grapes	1.9	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.9	0.0	0.0	0.0
	Cotton	102.6	0.0	0.0	-0.5	102.7	-0.1	0.0	-0.1	102.6	0.0	0.0	0.0
	Subtropical Orchard	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Subtotal	1015.1	0.0	0.0	-0.8	1015.1	0.0	0.0	0.0	1015.2	0.0	0.0	0.0
11	Pasture	10.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0
	Alfalfa	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0
	Sugar Beets	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0
	Other Field Crops	11.5	0.0	0.0	0.0	11.5	0.0	0.0	0.0	11.4	0.0	0.0	0.0
	Rice	3.5	0.0	0.0	0.0	3.6	0.0	0.0	0.0	3.5	0.0	0.0	0.0
	Truck Crops	40.1	0.0	0.0	0.0	40.1	0.0	0.0	0.0	40.0	0.0	0.0	0.0
	Tomatoes	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0
	Deciduous Orchard	115.8	0.0	0.0	0.0	115.8	0.0	0.0	0.0	115.8	0.0	0.0	0.0
	Small Grain	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Grapes	19.4	0.0	0.0	0.0	19.4	0.0	0.0	0.0	19.4	0.0	0.0	0.0
	Subtotal	207.6	0.0	0.0	0.0	207.6	0.0	0.0	0.0	207.5	0.0	0.0	0.0
12	Pasture	4.2	0.0	0.0	0.0	4.2	0.0	0.0	0.0	4.2	0.0	0.0	0.0
	Alfalfa	10.5	0.0	0.0	0.0	10.4	0.0	0.0	0.0	10.5	0.0	0.0	0.0
	Sugar Beets	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Other Field Crops	26.5	0.0	0.0	0.0	26.4	0.0	0.0	0.0	26.3	0.0	0.0	0.0
	Truck Crops	19.1	0.0	0.0	0.0	19.1	0.0	0.0	0.0	19.1	0.0	0.0	0.0
	Deciduous Orchard	134.7	0.0	0.0	0.0	134.7	0.0	0.0	0.0	134.7	0.0	0.0	0.0
	Small Grain	5.4	0.0	0.0	0.0	5.4	0.0	0.0	0.0	5.3	0.0	0.0	0.0
	Grapes	26.2	0.0	0.0	0.0	26.2	0.0	0.0	0.0	26.2	0.0	0.0	0.0
	Cotton	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
	Subtropical Orchard	3.5	0.0	0.0	0.0	3.5	0.0	0.0	0.0	3.5	0.0	0.0	0.0
	Subtotal	231.2	0.0	0.0	0.0	230.9	0.0	0.0	0.0	230.8	0.0	0.0	0.0
13	Pasture	9.2	0.0	0.0	0.0	9.3	-0.1	-0.1	-0.1	9.2	-0.1	-0.1	-0.1
	Alfalfa	24.2	0.0	0.0	0.0	24.3	-0.1	-0.1	-0.1	24.2	-0.1	-0.1	-0.1
	Sugar Beets	4.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0
	Other Field Crops	35.2	0.0	0.0	0.0	35.4	-0.1	-0.1	-0.1	35.1	-0.1	-0.1	-0.1
	Rice	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0
	Truck Crops	114.4	0.0	0.0	0.0	114.4	0.0	0.0	0.0	114.4	0.0	0.0	0.0
	Tomatoes	10.5	0.0	0.0	0.0	10.5	0.0	0.0	0.0	10.5	0.0	0.0	0.0
	Deciduous Orchard	193.4	0.0	0.0	0.0	193.4	0.0	0.0	0.0	193.4	0.0	0.0	0.0
	Small Grain	25.3	0.0	0.0	0.0	25.4	0.0	0.0	-0.1	25.0	0.0	0.0	0.0
	Grapes	184.9	0.0	0.0	0.0	184.9	0.0	0.0	0.0	184.9	0.0	0.0	0.0
Cotton	71.4	0.0	0.0	-0.1	71.8	-0.2	-0.2	-0.3	71.2	-0.2	-0.2	-0.2	
Subtropical Orchard	34.7	0.0	0.0	0.0	34.7	0.0	0.0	0.0	34.7	0.0	0.0	0.0	
	Subtotal	710.6	0.0	0.0	0.0	711.5	-0.5	-0.5	-0.7	709.9	-0.6	-0.6	-0.6

TABLE 18
VALUE OF PRODUCTION BY SUBREGION (Million \$)

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CVPM Subregion	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
14	Pasture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Alfalfa	8.6	0.0	0.0	0.0	8.6	0.0	0.0	0.0	8.2	0.0	0.0	
	Sugar Beets	3.9	0.0	0.0	0.0	4.0	0.0	0.0	0.0	3.9	0.0	0.0	
	Other Field Crops	11.0	0.0	0.0	0.0	10.9	0.0	0.0	0.0	10.7	0.0	0.0	
	Truck Crops	817.9	0.0	0.0	0.0	817.8	0.0	0.0	0.0	816.9	0.0	0.0	
	Tomatoes	114.6	0.0	0.0	0.1	114.6	0.0	0.0	0.0	113.3	0.0	0.0	
	Deciduous Orchard	38.5	0.0	0.0	0.0	38.5	0.0	0.0	0.0	38.5	0.0	0.0	
	Small Grain	5.2	0.0	0.0	0.0	5.2	0.0	0.0	0.0	4.9	0.0	0.0	
	Grapes	15.1	0.0	0.0	0.0	15.1	0.0	0.0	0.0	15.1	0.0	0.0	
	Cotton	234.6	0.0	0.0	-0.1	234.7	0.0	0.0	0.0	225.8	0.0	0.0	
	Subtropical Orchard	3.7	0.0	0.0	0.0	3.7	0.0	0.0	0.0	3.7	0.0	0.0	
Subtotal	1253.1	0.0	0.0	0.0	1253.1	0.0	0.0	0.0	1241.1	0.0	0.0	0.0	
15	Pasture	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0	
	Alfalfa	51.3	0.0	0.0	0.1	51.4	0.0	0.0	0.0	49.7	0.0	0.0	
	Sugar Beets	4.1	0.0	0.0	0.0	4.1	0.0	0.0	0.0	4.0	0.0	0.0	
	Other Field Crops	51.2	0.0	0.0	0.0	51.3	0.0	0.0	0.0	50.2	0.0	0.0	
	Rice	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	
	Truck Crops	72.0	0.0	0.0	0.0	72.0	0.0	0.0	0.0	71.9	0.0	0.0	
	Tomatoes	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	
	Deciduous Orchard	58.7	0.0	0.0	0.0	58.7	0.0	0.0	0.0	58.7	0.0	0.0	
	Small Grain	41.6	0.0	0.0	0.0	41.9	0.0	0.0	0.0	39.7	0.0	0.0	
	Grapes	121.7	0.0	0.0	0.0	121.7	0.0	0.0	0.0	121.7	0.0	0.0	
	Cotton	275.0	0.0	0.0	-0.2	275.7	0.0	0.0	-0.1	267.5	0.0	0.0	
Subtropical Orchard	3.7	0.0	0.0	0.0	3.7	0.0	0.0	0.0	3.7	0.0	0.0		
Subtotal	683.2	0.0	0.0	-0.1	684.5	0.0	0.0	0.0	671.1	0.0	0.0	0.0	
16	Pasture	1.4	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.4	0.0	0.0	
	Alfalfa	3.1	0.0	0.0	0.0	3.2	0.0	0.0	0.0	3.1	0.0	0.0	
	Other Field Crops	3.6	0.0	0.0	0.0	3.6	0.0	0.0	0.0	3.6	0.0	0.0	
	Truck Crops	30.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0	
	Deciduous Orchard	24.7	0.0	0.0	0.0	24.7	0.0	0.0	0.0	24.7	0.0	0.0	
	Small Grain	2.4	0.0	0.0	0.0	2.4	0.0	0.0	0.0	2.3	0.0	0.0	
	Grapes	119.6	0.0	0.0	0.0	119.6	0.0	0.0	0.0	119.6	0.0	0.0	
	Cotton	5.7	0.0	0.0	0.0	5.8	-0.1	-0.1	-0.1	5.7	0.0	0.0	
	Subtropical Orchard	33.7	0.0	0.0	0.0	33.7	0.0	0.0	0.0	33.7	0.0	0.0	
	Subtotal	224.3	0.0	0.0	0.0	224.5	-0.2	-0.2	-0.2	224.2	0.0	0.0	0.0
17	Pasture	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.5	0.0	0.0	
	Alfalfa	3.1	0.0	0.0	0.0	3.1	0.0	0.0	0.0	2.5	0.0	0.0	
	Sugar Beets	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	
	Other Field Crops	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	4.2	0.0	0.0	
	Truck Crops	60.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0	59.7	0.0	0.0	
	Tomatoes	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.4	0.0	0.0	
	Deciduous Orchard	112.8	0.0	0.0	0.0	112.8	0.0	0.0	0.0	112.8	0.0	0.0	
	Small Grain	3.5	0.0	0.0	0.0	3.5	0.0	0.0	0.0	3.1	0.0	0.0	
	Grapes	236.9	0.0	0.0	0.0	236.9	0.0	0.0	0.0	236.9	0.0	0.0	
	Cotton	11.4	0.0	0.0	0.0	11.4	0.0	0.0	0.0	9.9	0.0	0.0	
Subtropical Orchard	131.0	0.0	0.0	0.0	131.0	0.0	0.0	0.0	131.0	0.0	0.0		
Subtotal	565.7	0.0	0.0	0.0	565.7	0.0	0.0	0.0	562.0	0.0	0.0	0.0	
18	Pasture	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.8	0.0	0.0	
	Alfalfa	38.4	0.0	0.0	0.1	38.7	-0.2	-0.2	-0.2	36.4	0.0	0.0	
	Sugar Beets	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.5	0.0	0.0	
	Other Field Crops	46.5	0.0	0.0	0.0	46.7	-0.1	-0.1	-0.1	44.8	0.0	0.0	
	Truck Crops	78.0	0.0	0.0	0.0	78.0	0.0	0.0	0.0	77.9	0.0	0.0	
	Tomatoes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Deciduous Orchard	106.6	0.0	0.0	0.0	106.6	0.0	0.0	0.0	106.6	0.0	0.0	
	Small Grain	24.0	0.0	0.0	0.0	24.3	-0.1	-0.1	-0.1	22.7	0.1	0.1	
	Grapes	121.7	0.0	0.0	0.0	121.7	0.0	0.0	0.0	121.7	0.0	0.0	
	Cotton	193.5	0.0	0.0	-0.1	194.6	-0.6	-0.6	-0.6	186.0	0.0	0.0	
Subtropical Orchard	363.1	0.0	0.0	0.0	363.1	0.0	0.0	0.0	363.1	0.0	0.0		
Subtotal	974.2	0.0	0.0	-0.1	976.1	-1.0	-1.0	-1.0	961.5	0.1	0.1	0.1	

TABLE 18
VALUE OF PRODUCTION BY SUBREGION (Million \$)

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CVPM Subregion	Crop Category	Preferred Alternative Average	Changes Compared to Avg. PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
19	Pasture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Alfalfa	15.7	0.0	0.0	0.0	15.7	0.0	0.0	0.0	15.3	0.0	0.0	0.0
	Sugar Beets	4.3	0.0	0.0	0.0	4.3	0.0	0.0	0.0	4.2	0.0	0.0	0.0
	Other Field Crops	4.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0
	Truck Crops	147.1	0.0	0.0	0.0	147.0	0.0	0.0	0.0	147.0	0.0	0.0	0.0
	Tomatoes	2.7	0.0	0.0	0.0	2.7	0.0	0.0	0.0	2.7	0.0	0.0	0.0
	Deciduous Orchard	80.2	0.0	0.0	0.0	80.2	0.0	0.0	0.0	80.2	0.0	0.0	0.0
	Small Grain	3.6	0.0	0.0	0.0	3.6	0.0	0.0	0.0	3.5	0.0	0.0	0.0
	Grapes	33.0	0.0	0.0	0.0	33.0	0.0	0.0	0.0	33.0	0.0	0.0	0.0
	Cotton	125.2	0.0	0.0	-0.1	125.1	0.0	0.0	0.0	122.2	0.0	0.0	0.0
	Subtropical Orchard	17.1	0.0	0.0	0.0	17.1	0.0	0.0	0.0	17.1	0.0	0.0	0.0
Subtotal	433.3	0.0	0.0	0.0	433.3	0.0	0.0	0.0	429.7	0.0	0.0	0.0	
20	Pasture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Alfalfa	7.3	0.0	0.0	0.0	7.3	0.0	0.0	0.0	6.7	0.0	0.0	0.0
	Sugar Beets	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Other Field Crops	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0
	Truck Crops	251.6	0.0	0.0	0.0	251.6	0.0	0.0	0.0	251.2	0.0	0.0	0.0
	Tomatoes	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
	Deciduous Orchard	81.8	0.0	0.0	0.0	81.8	0.0	0.0	0.0	81.8	0.0	0.0	0.0
	Small Grain	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Grapes	109.1	0.0	0.0	0.0	109.1	0.0	0.0	0.0	109.1	0.0	0.0	0.0
	Cotton	35.0	0.0	0.0	0.0	35.2	0.0	0.0	0.0	32.7	0.0	0.0	0.0
	Subtropical Orchard	115.6	0.0	0.0	0.0	115.6	0.0	0.0	0.0	115.6	0.0	0.0	0.0
Subtotal	603.9	0.0	0.0	0.0	604.1	0.0	0.0	0.0	600.4	0.0	0.0	0.0	
21	Pasture	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	Alfalfa	16.8	0.0	0.0	0.0	16.8	0.0	0.0	0.0	16.6	0.0	0.0	0.0
	Sugar Beets	6.4	0.0	0.0	0.0	6.4	0.0	0.0	0.0	6.3	0.0	0.0	0.0
	Other Field Crops	10.8	0.0	0.0	0.0	10.8	0.0	0.0	0.0	10.8	0.0	0.0	0.0
	Rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Truck Crops	661.4	0.0	0.0	0.0	661.3	0.0	0.0	0.1	661.3	0.0	0.0	0.0
	Tomatoes	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0
	Deciduous Orchard	39.3	0.0	0.0	0.0	39.3	0.0	0.0	0.0	39.3	0.0	0.0	0.0
	Small Grain	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0
	Grapes	122.1	0.0	0.0	0.0	122.1	0.0	0.0	0.0	122.1	0.0	0.0	0.0
	Cotton	128.3	0.0	0.0	-0.1	128.3	0.0	0.0	0.0	126.7	0.0	0.0	0.0
Subtropical Orchard	59.9	0.0	0.0	0.0	59.9	0.0	0.0	0.0	59.9	0.0	0.0	0.0	
Subtotal	1047.6	0.0	0.0	0.0	1047.6	0.0	0.0	0.0	1045.7	0.0	0.0	0.0	

NOTES:

1. All values in millions of 1992 dollars.
2. A negative value represents a lower gross revenue in an alternative than in the Preferred Alternative.
3. Not all 12 crops are grown in all subregions.
4. Subregions 3 and 3B should be added together to get the complete subregion 3. 3B represents the area within this subregion served by the Tehama Colusa Canal.

TABLE 19
CHANGES IN NET REVENUE BY SUBREGION (Million \$)

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CVPM Subregion	Cause of Net Revenue Change	Change Compared to Avg.PA				Change Compared to Wet PA				Change Compared to Dry PA			
		Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry	
		Followed By Average				Followed By Wet				Followed By Dry			
1	Fallowed Land	1.8	-0.1	0.0	0.0	1.8	-0.1	-0.1	-0.1	1.7	-0.1	-0.1	-0.1
	Groundwater Pumping Cost	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	0.1	0.1
	Irrigation Cost	2.3	-0.2	-0.2	-0.2	-2.3	-0.2	-0.2	-0.2	-2.3	-0.2	-0.2	-0.2
	CVP Water Cost	0.6	0.3	0.2	0.1	-0.7	0.4	0.4	0.4	-0.7	0.4	0.4	0.4
	Higher Crop Prices	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Net Change		0.1	0.0	0.0	-1.2	0.2	0.2	0.2	-1.2	0.2	0.2	0.2
2	Fallowed Land	30.1	0.0	0.0	-0.3	30.1	0.0	0.0	-0.4	30.0	0.0	0.0	0.0
	Groundwater Pumping Cost	20.4	0.0	0.0	0.0	-19.9	0.0	0.0	0.0	-24.6	0.0	0.0	0.0
	Irrigation Cost	22.1	0.0	0.0	0.0	-22.1	0.0	0.0	0.0	-21.9	0.0	0.0	0.0
	CVP Water Cost	0.4	-0.2	0.0	0.1	-0.6	-0.6	-0.2	0.5	-0.1	0.0	0.0	-0.1
	Higher Crop Prices	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	Net Change		-0.2	0.0	0.0	-12.4	-0.6	-0.2	0.1	-16.5	0.0	0.0	-0.1
3	Fallowed Land	39.3	0.0	0.0	0.0	39.4	0.0	0.0	0.0	38.9	0.0	0.0	0.0
	Groundwater Pumping Cost	9.0	0.0	0.0	0.0	-7.9	0.0	0.0	0.0	-14.5	0.0	0.0	0.0
	Irrigation Cost	21.2	0.0	0.0	0.0	-21.3	0.0	0.0	0.0	-21.0	0.0	0.0	0.0
	CVP Water Cost	1.6	0.0	0.0	0.0	-1.6	-0.2	-0.2	-0.2	-1.4	-0.3	-0.3	-0.3
	Higher Crop Prices	0.2	0.0	0.0	0.3	0.1	0.0	0.0	0.2	0.4	0.0	0.0	0.0
	Net Change		0.0	0.0	0.3	8.7	-0.2	-0.2	0.0	2.4	-0.3	-0.3	-0.3
3B	Fallowed Land	11.9	0.0	0.0	-6.4	11.9	0.0	0.0	-3.8	10.6	0.0	0.0	0.0
	Groundwater Pumping Cost	3.0	0.0	0.0	0.0	-1.8	1.4	1.4	-4.1	-8.3	0.0	0.0	0.0
	Irrigation Cost	9.0	0.0	0.0	0.0	-9.1	0.0	0.0	0.0	-7.7	0.0	0.0	0.0
	CVP Water Cost	3.7	-0.4	1.4	3.7	-4.2	-4.7	-1.2	4.2	-0.9	0.2	0.2	-0.3
	Higher Crop Prices	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
	Net Change		-0.4	1.4	-2.8	-3.1	-3.3	0.2	-3.7	-6.3	0.2	0.2	-0.3
4	Fallowed Land	34.3	0.0	0.0	0.0	34.3	0.0	0.0	0.0	34.1	0.0	0.0	0.0
	Groundwater Pumping Cost	9.3	0.0	0.0	0.0	-8.5	0.0	0.0	0.0	-13.5	0.0	0.0	0.0
	Irrigation Cost	20.2	0.0	0.0	0.0	-20.3	0.0	0.0	0.0	-20.1	0.0	0.0	0.0
	CVP Water Cost	1.3	0.0	0.0	0.0	-1.3	-0.1	-0.1	-0.1	-1.1	-0.2	-0.2	-0.2
	Higher Crop Prices	0.2	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0
	Net Change		0.0	0.0	0.3	4.4	-0.1	-0.1	0.0	-0.3	-0.2	-0.2	-0.2
5	Fallowed Land	53.4	0.0	0.0	0.0	53.5	0.0	0.0	0.0	53.2	0.0	0.0	0.0
	Groundwater Pumping Cost	14.9	0.0	0.0	0.0	-13.0	0.0	0.0	0.0	-18.7	0.0	0.0	0.0
	Irrigation Cost	22.5	0.0	0.0	0.0	-22.6	0.0	0.0	0.0	-22.4	0.0	0.0	0.0
	CVP Water Cost	0.2	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3
	Higher Crop Prices	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0
	Net Change		-0.3	-0.3	0.0	17.7	-0.3	-0.3	-0.2	12.1	-0.3	-0.3	-0.3
6	Fallowed Land	32.3	0.0	0.0	0.0	32.5	-0.2	-0.2	-0.2	32.2	0.0	0.0	0.0
	Groundwater Pumping Cost	14.9	0.0	0.0	0.0	-14.4	0.3	0.3	0.3	-17.6	-0.1	-0.1	-0.1
	Irrigation Cost	21.6	0.0	0.0	0.0	-21.8	0.0	0.0	0.0	-21.5	0.0	0.0	0.0
	CVP Water Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Higher Crop Prices	0.3	0.0	0.0	0.4	0.2	0.0	0.0	0.2	0.5	0.0	0.0	0.0
	Net Change		0.0	0.0	0.4	-3.6	0.1	0.1	0.3	-6.4	-0.1	-0.1	-0.1

TABLE 19
CHANGES IN NET REVENUE BY SUBREGION (Million \$)

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7	Fallowed Land	10.5	0.0	0.0	0.0	10.5	0.0	0.0	0.0	10.4	0.0	0.0	0.0
	Groundwater Pumping Cost	7.6	0.0	0.0	0.0	-6.9	0.0	0.0	0.0	-9.1	0.0	0.0	0.0
	Irrigation Cost	4.4	0.0	0.0	0.0	-4.4	0.0	0.0	0.0	-4.3	0.0	0.0	0.0
	CVP Water Cost	0.3	-0.1	-0.1	-0.1	-0.3	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1
	Higher Crop Prices	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
	Net Change		-0.1	-0.1	0.0	-1.0	-0.1	-0.1	0.0	-3.1	-0.1	-0.1	-0.1
8	Fallowed Land	46.4	0.0	0.0	0.0	46.5	0.0	0.0	0.0	46.4	0.0	0.0	0.0
	Groundwater Pumping Cost	30.8	0.0	0.0	0.0	-29.1	0.1	0.1	0.1	-35.4	-0.1	-0.1	-0.1
	Irrigation Cost	21.1	0.0	0.0	0.0	-21.1	0.0	0.0	0.0	-21.0	0.0	0.0	0.0
	CVP Water Cost	0.3	-0.8	-0.5	-1.6	-0.5	-2.0	-1.2	-2.8	-0.1	-0.3	-0.3	-0.4
	Higher Crop Prices	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.3	0.0	0.0	0.0
	Net Change		-0.8	-0.5	-1.3	-4.1	-1.9	-1.0	-2.5	-9.8	-0.3	-0.3	-0.5
9	Fallowed Land	52.9	-0.1	-0.1	0.0	52.9	-0.1	-0.1	-0.1	52.4	0.2	0.2	0.2
	Groundwater Pumping Cost	2.5	-0.6	-0.6	-0.6	-2.1	-1.2	-1.2	-1.2	-3.2	-0.4	-0.4	-0.4
	Irrigation Cost	34.4	-0.3	-0.3	-0.3	-34.4	-0.3	-0.3	-0.3	-33.9	-0.3	-0.3	-0.3
	CVP Water Cost	1.2	1.2	1.2	1.2	-2.0	2.0	2.0	2.0	-0.5	0.5	0.5	0.5
	Higher Crop Prices	0.3	0.0	0.0	0.5	0.3	0.0	0.0	0.2	0.6	0.0	0.0	0.0
	Net Change		0.3	0.3	0.7	14.5	0.5	0.5	0.7	15.5	0.0	0.0	0.0
10	Fallowed Land	97.8	0.0	0.0	-0.1	97.8	0.0	0.0	0.0	97.8	0.0	0.0	0.0
	Groundwater Pumping Cost	15.4	0.0	0.0	-6.8	-12.5	-8.3	-0.8	-8.6	-20.6	-6.8	0.0	0.0
	Irrigation Cost	38.9	0.0	0.0	0.0	-38.9	0.0	0.0	0.0	-38.9	0.0	0.0	0.0
	CVP Water Cost	6.3	-0.1	0.4	6.3	-8.1	7.9	0.7	8.1	-3.2	0.2	0.2	-0.1
	Higher Crop Prices	0.5	0.0	0.0	0.4	0.4	0.0	0.0	0.2	0.9	0.0	0.0	0.0
	Net Change		-0.1	0.4	-0.1	38.7	-0.5	0.0	-0.3	36.0	0.2	0.2	-0.1
11	Fallowed Land	35.5	0.0	0.0	0.0	35.5	0.0	0.0	0.0	35.4	0.0	0.0	0.0
	Groundwater Pumping Cost	1.0	0.0	0.0	0.0	-0.8	0.0	0.0	0.0	-1.1	0.0	0.0	0.0
	Irrigation Cost	16.0	0.0	0.0	0.0	-16.0	0.0	0.0	0.0	-16.0	0.0	0.0	0.0
	CVP Water Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Higher Crop Prices	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0
	Net Change		0.0	0.0	0.3	18.7	0.0	0.0	0.1	18.6	0.0	0.0	0.0
12	Fallowed Land	41.8	0.0	0.0	0.0	41.7	0.0	0.0	0.0	41.7	0.0	0.0	0.0
	Groundwater Pumping Cost	6.1	0.0	0.0	0.0	-4.8	0.0	0.0	0.0	-8.4	0.0	0.0	0.0
	Irrigation Cost	19.9	0.0	0.0	0.0	-19.8	0.0	0.0	0.0	-19.8	0.0	0.0	0.0
	CVP Water Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Higher Crop Prices	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0
	Net Change		0.0	0.0	0.3	17.2	0.0	0.0	0.1	13.7	0.0	0.0	0.0
13	Fallowed Land	112.2	0.0	0.0	0.0	112.3	-0.1	-0.1	-0.1	112.1	-0.1	-0.1	-0.1
	Groundwater Pumping Cost	38.4	0.8	0.7	-2.7	-33.9	1.6	1.6	-4.9	-50.7	0.2	0.2	0.2
	Irrigation Cost	53.6	0.0	0.0	0.0	-53.8	0.0	0.0	0.0	-53.6	0.0	0.0	0.0
	CVP Water Cost	6.8	-0.8	-0.6	2.1	-6.4	-1.7	-1.5	4.3	-5.4	-0.2	-0.2	-0.4
	Higher Crop Prices	0.4	0.0	0.0	0.5	0.4	0.0	0.0	0.2	0.8	0.0	0.0	0.0
	Net Change		0.0	0.1	-0.1	18.7	-0.1	0.0	-0.5	3.3	-0.1	-0.1	-0.3
14	Fallowed Land	111.5	0.0	0.0	0.0	111.5	0.0	0.0	0.0	110.3	0.0	0.0	0.0
	Groundwater Pumping Cost	81.1	0.0	0.0	0.0	-58.3	0.0	0.0	0.0	-118.6	0.0	0.0	0.0
	Irrigation Cost	62.8	0.0	0.0	0.0	-62.8	0.0	0.0	0.0	-61.1	0.0	0.0	0.0
	CVP Water Cost	32.8	1.3	3.5	-6.0	-45.1	1.8	6.4	-5.5	-14.4	-6.3	-6.3	-7.3
	Higher Crop Prices	0.7	0.0	0.0	0.5	0.6	0.0	0.0	0.2	1.2	0.0	0.0	0.0
	Net Change		1.3	3.5	-5.6	-53.9	1.8	6.4	-5.3	-82.6	-6.3	-6.3	-7.3

TABLE 19
CHANGES IN NET REVENUE BY SUBREGION (Million \$)

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15	Fallowed Land	94.1	0.0	0.0	0.0	94.2	0.0	0.0	0.0	92.6	0.0	0.0	0.0
	Groundwater Pumping Cost	81.0	0.0	0.0	0.0	-69.3	0.3	0.3	0.3	-102.9	-1.5	-1.5	-1.5
	Irrigation Cost	61.8	0.0	0.0	0.0	-61.9	0.0	0.0	0.0	-60.3	0.0	0.0	0.0
	CVP Water Cost	1.8	-0.3	-0.2	-0.4	-1.9	-0.2	-0.2	-0.3	-1.5	-0.4	-0.4	-0.5
	Higher Crop Prices	0.7	0.0	0.0	0.4	0.6	0.1	0.0	0.2	1.5	0.0	0.0	0.0
Net Change		-0.3	-0.2	0.1	-38.3	0.2	0.2	0.2	-70.7	-1.9	-1.9	-1.9	
16	Fallowed Land	37.3	0.0	0.0	0.0	37.3	0.0	0.0	0.0	37.3	0.0	0.0	0.0
	Groundwater Pumping Cost	1.9	-0.6	-0.6	-0.6	0.0	-0.5	-0.5	-0.5	-4.3	-0.5	-0.5	-0.5
	Irrigation Cost	11.0	0.0	0.0	0.0	-11.1	0.0	0.0	0.0	-11.0	0.0	0.0	0.0
	CVP Water Cost	0.7	0.7	0.7	0.7	-0.7	0.7	0.7	0.7	-0.5	0.5	0.5	0.5
	Higher Crop Prices	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Net Change		0.0	0.0	0.1	25.7	0.1	0.1	0.1	21.6	0.0	0.0	0.0	
17	Fallowed Land	95.8	0.0	0.0	0.0	95.8	0.0	0.0	0.0	95.2	0.0	0.0	0.0
	Groundwater Pumping Cost	17.7	0.2	0.2	0.2	-12.7	0.3	0.3	0.3	-25.5	0.0	0.0	0.0
	Irrigation Cost	27.8	0.0	0.0	0.0	-27.8	0.0	0.0	0.0	-27.4	0.0	0.0	0.0
	CVP Water Cost	1.4	-0.1	-0.1	-0.3	-1.2	-0.4	-0.3	-0.5	-1.1	0.0	0.0	-0.1
	Higher Crop Prices	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Net Change		0.0	0.1	0.1	54.2	0.0	0.0	-0.1	41.5	0.0	0.0	-0.1	
18	Fallowed Land	153.6	0.0	0.0	0.0	153.9	-0.1	-0.1	-0.1	151.9	0.0	0.0	0.0
	Groundwater Pumping Cost	57.9	0.0	0.0	0.0	-46.2	0.2	0.2	0.2	-78.0	0.0	0.0	0.0
	Irrigation Cost	64.9	0.0	0.0	0.0	-65.1	0.0	0.0	0.0	-63.2	0.0	0.0	0.0
	CVP Water Cost	17.7	-1.5	-1.0	-3.3	-17.7	-2.2	-1.7	-3.9	-15.2	0.8	0.8	0.0
	Higher Crop Prices	0.6	0.0	0.0	0.4	0.5	0.0	0.0	0.1	1.1	0.0	0.0	0.0
Net Change		-1.5	-1.0	-2.9	25.3	-2.1	-1.6	-3.7	-3.4	0.8	0.8	0.0	
19	Fallowed Land	54.3	0.0	0.0	0.0	54.3	0.0	0.0	0.0	53.9	0.0	0.0	0.0
	Groundwater Pumping Cost	31.6	0.0	0.0	0.0	-21.3	0.2	0.2	0.2	-51.5	-1.2	-1.2	-1.2
	Irrigation Cost	28.8	0.0	0.0	0.0	-28.8	0.0	0.0	0.0	-28.3	0.0	0.0	0.0
	CVP Water Cost	0.5	-0.5	-0.5	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.5	-0.5	-0.5
	Higher Crop Prices	0.3	0.0	0.0	0.2	0.3	0.0	0.0	0.1	0.6	0.0	0.0	0.0
Net Change		-0.5	-0.5	-0.3	3.9	-0.3	-0.3	-0.3	-25.7	-1.8	-1.8	-1.8	
20	Fallowed Land	81.5	0.0	0.0	0.0	81.5	0.0	0.0	0.0	81.0	0.0	0.0	0.0
	Groundwater Pumping Cost	24.7	0.0	0.0	0.0	-19.7	0.0	0.0	0.0	-36.6	-0.2	-0.2	-0.2
	Irrigation Cost	20.9	0.0	0.0	0.0	-20.9	0.0	0.0	0.0	-20.5	0.0	0.0	0.0
	CVP Water Cost	9.2	-0.1	0.2	-0.9	-9.5	-0.3	-0.1	-1.1	-7.0	-0.2	-0.2	-0.5
	Higher Crop Prices	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Net Change		-0.1	0.2	-0.8	31.5	-0.3	0.0	-1.1	17.2	-0.3	-0.3	-0.7	
21	Fallowed Land	112.4	0.0	0.0	0.0	112.4	0.0	0.0	0.0	112.1	0.0	0.0	0.0
	Groundwater Pumping Cost	49.3	0.0	0.0	0.0	-37.6	0.2	0.2	0.2	-68.4	-0.8	-0.8	-0.8
	Irrigation Cost	37.1	0.0	0.0	0.0	-37.1	0.0	0.0	0.0	-36.8	0.0	0.0	0.0
	CVP Water Cost	8.4	0.1	0.3	-0.5	-9.6	0.2	0.5	-0.4	-5.5	-0.7	-0.7	-0.9
	Higher Crop Prices	0.4	0.0	0.0	0.2	0.4	0.0	0.0	0.1	0.7	0.0	0.0	0.0
Net Change		0.1	0.3	-0.3	28.5	0.4	0.7	-0.1	2.1	-1.5	-1.5	-1.7	
Total	Fallowed Land		-0.1	0.0	-6.8	1100.4	-0.4	-0.3	-4.6	1093.0	-0.2	-0.2	-0.2
	Groundwater Pumping		0.4	0.4	-9.9	-364.0	-4.4	3.1	-16.6	-616.9	-4.0	-4.0	-4.0
	Irrigation Cost		-0.3	-0.3	-0.3	-503.5	-0.3	-0.3	-0.3	-496.0	-0.3	-0.3	-0.3
	CVP Water Cost		-1.3	4.3	2.3	-91.1	0.0	2.9	6.5	-42.5	-8.0	-7.9	-10.7
	Higher Crop Prices		0.1	0.0	4.7	4.1	0.4	0.4	1.9	8.6	0.0	0.0	0.0
Net Change		-1.1	4.4	-10.0	146.0	-4.6	5.8	-13.2	-53.9	-12.4	-12.4	-15.1	

Notes:

1. All values in millions of 1992 dollars
2. A negative value represents a reduction in net revenue compared to the Preferred Alternative
3. Subregions 3 and 3B should be added together to get the complete subregion 3. 3B represents the area within this subregion served by the Tehama Colusa Canal
4. PA is the Preferred Alternative

**TABLE 20
IRRIGATION WATER APPLIED BY SUBREGION**

CVP Subregion	Water Source	Preferred Alternative Average	Changes Compared to Average PA			Preferred Alternative Wet	Changes Compared to Wet PA			Preferred Alternative Dry	Changes Compared to Dry PA		
			Average	Wet	Dry		Average	Wet	Dry		Average	Wet	Dry
			Followed by Average				Followed by Wet				Followed by Dry		
1	CVP Water	19.3	-10.8	-6.4	-5.4	20.5	-13.0	-13.0	-13.0	21.0	-13.5	-13.5	-13.5
	Groundwater	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	-1.5	-1.5	-1.5
2	CVP Water	27.7	0.0	0.0	-21.6	37.1	0.0	0.1	-36.7	8.2	0.0	0.0	0.0
	Groundwater	512.1	0.0	0.0	0.0	506.4	0.0	-0.1	0.0	584.7	0.0	0.0	0.0
3	CVP Water	170.4	0.0	0.0	0.0	174.2	0.0	0.0	0.0	154.3	0.0	0.0	0.0
	Groundwater	248.9	0.0	0.0	0.0	227.0	0.0	0.0	0.0	355.3	0.0	0.0	0.0
3B	CVP Water	199.6	0.1	0.0	-199.6	227.0	39.3	39.1	-227.0	50.3	0.0	0.0	-0.1
	Groundwater	78.7	-0.1	0.0	0.0	50.4	-38.4	-38.2	99.6	191.9	0.0	0.0	0.0
4	CVP Water	129.8	0.0	0.0	0.0	133.1	0.0	0.0	0.0	113.9	0.0	0.0	0.0
	Groundwater	326.6	0.0	0.0	0.0	305.1	0.0	0.0	0.0	442.8	0.0	0.0	0.0
5	CVP Water	19.9	0.1	0.0	0.1	20.8	0.1	0.0	0.0	17.9	0.0	-0.1	0.0
	Groundwater	492.6	-0.1	0.0	-0.1	449.3	-1.1	-1.0	-0.4	588.7	-1.1	-1.0	-1.1
6	CVP Water	2.2	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1.8	0.0	0.0	0.0
	Groundwater	452.8	0.0	0.0	0.0	447.6	-6.4	-6.4	-6.0	521.0	0.0	0.0	0.0
7	CVP Water	22.0	0.0	0.0	0.0	22.6	0.0	0.0	0.0	19.1	0.0	0.0	0.0
	Groundwater	193.2	0.0	0.0	0.0	177.9	0.0	0.0	0.0	217.5	0.0	0.0	0.0
8	CVP Water	51.6	0.1	0.0	-0.1	79.4	0.1	-0.1	-0.1	25.3	0.0	0.0	-0.1
	Groundwater	756.4	-0.1	0.0	0.1	717.3	0.0	0.0	0.0	851.3	-0.2	-0.2	-0.1
9	CVP Water	28.2	-28.2	-28.2	-28.2	48.1	-48.1	-48.1	-48.1	11.5	-11.5	-11.5	-11.5
	Groundwater	80.3	17.9	17.9	18.7	70.2	35.6	35.6	36.0	100.1	11.5	11.5	11.4
10	CVP Water	183.4	0.0	0.0	-183.4	234.4	-228.4	-22.8	-234.4	92.1	0.0	0.0	0.0
	Groundwater	496.2	0.0	0.0	179.4	414.4	227.7	22.7	233.7	632.4	0.0	0.0	-0.1
11	CVP Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Groundwater	34.1	0.0	0.0	0.0	26.8	0.0	0.0	0.0	34.5	0.0	0.0	0.0
12	CVP Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Groundwater	173.1	0.0	0.0	0.0	141.8	0.0	0.0	0.0	228.2	0.0	0.0	0.0
13	CVP Water	163.6	16.7	16.6	-60.2	159.0	33.2	33.1	-113.1	128.2	0.0	0.0	0.0
	Groundwater	912.5	-16.7	-16.6	60.2	812.0	-36.2	-36.2	109.1	1,181.4	-3.8	-3.8	-3.8
14	CVP Water	524.4	0.1	0.0	0.1	719.0	0.1	0.0	0.0	230.2	0.0	0.0	0.0
	Groundwater	826.3	-0.1	0.0	-0.1	603.6	-0.1	0.0	0.0	1,176.4	0.0	0.0	0.0
15	CVP Water	35.1	0.0	0.1	0.1	38.1	0.0	0.1	0.0	28.6	0.0	0.0	0.0
	Groundwater	1,276.6	0.0	-0.1	-0.1	1,099.1	0.0	0.0	0.0	1,600.7	0.0	0.0	0.0
16	CVP Water	16.2	-16.2	-16.2	-16.2	15.7	-15.7	-15.7	-15.7	12.9	-12.9	-12.9	-12.9
	Groundwater	49.6	14.9	14.8	15.0	0.0	13.2	13.2	13.2	107.3	11.5	11.5	11.5
17	CVP Water	34.6	3.9	3.8	4.0	32.5	7.4	7.3	7.4	27.1	0.0	0.0	0.1
	Groundwater	415.1	-3.8	-3.8	-3.9	303.2	-7.4	-7.2	-7.4	577.4	0.0	0.0	0.0
18	CVP Water	517.3	0.0	0.0	0.1	526.3	0.0	0.0	0.1	399.0	0.0	0.0	0.1
	Groundwater	1,018.0	0.0	0.0	-0.1	821.8	-4.0	-4.0	-3.8	1,334.9	0.0	0.0	0.0
19	CVP Water	13.3	-0.1	0.0	0.1	15.4	-0.1	-0.1	0.0	9.4	0.0	0.0	0.0
	Groundwater	366.8	0.1	0.0	-0.1	250.7	0.0	0.0	0.0	578.4	0.0	0.0	0.0
20	CVP Water	208.7	0.1	0.1	-0.2	219.8	0.1	0.1	-0.1	154.1	0.0	0.0	-0.1
	Groundwater	303.6	-0.1	-0.1	0.1	244.8	0.0	0.0	0.0	437.3	0.0	0.0	0.0
21	CVP Water	138.3	0.0	0.0	-0.1	163.0	0.0	0.1	-0.1	89.3	0.0	0.0	-0.1
	Groundwater	579.4	0.0	0.0	0.1	445.2	0.0	-0.1	0.0	783.1	0.0	0.0	0.0
Total	CVP Water	2,505.5	-34.4	-30.4	-510.5	2,888.2	-224.9	-19.8	-680.6	1,593.9	-37.7	-37.8	-37.8
	Groundwater	9,596.5	11.9	12.3	269.2	8,114.6	182.8	-21.6	474.0	12,527.1	16.1	16.2	16.1

Notes:
1. All quantities in thousands of acre-feet
2. A negative value represents a lower quantity than in the Preferred Alternative
3. Subregions 3 and 3B should be added together to get the complete subregion 3. 3B represents the area within this subregion served by the Tehama Colusa Canal
4. PA is the Preferred Alternative

**TABLE 21
SUBREGION ANALYSIS OF SIGNIFICANT CHANGES IN WATER USE**

Subregion	Outcome	Explanation
1	Decrease in CVP use and no GW substitution in all sequences	Less CVP water is used than in the Preferred Alternative because the blended price is 140% to 330% higher than the Preferred Alternative Tier 1 (the only tier of water that was used for this scenario). For hydrologic reasons, subregion 1 is restricted from switching to groundwater.
2	Decrease in CVP use and no GW substitution in Dry to Average and Dry to Wet sequences	Less CVP water is used than in the Preferred Alternative because the blended prices for the Dry to Average and Dry to Wet sequences are 320% and 345% higher than the Preferred Alternative Tier 1 price (the only water tier that was used for this scenario). For hydrologic reasons, subregion 2 is restricted from switching to groundwater.
3B	Decrease CVP and no GW substitution in Dry to Average sequence	Less CVP water is used than in the Preferred Alternative because the blended price is 240% higher than the Tier 1 price from the Preferred Alternative, which is the only tier of water that was used. For hydrologic reasons the region is restricted from switching to groundwater in this long-run scenario.
3B	Decrease in CVP use and GW substitution in Dry to Wet sequence	CVP water use decreases because the blended price is 260% higher than the Preferred Alternative Tier 1 price. The model allowed a shift to groundwater on a short run basis to provide water to permanent crops during the wet year when groundwater would have been recharged.
3B	Shift from Groundwater to CVP water in Average to Wet and Wet to Wet sequences	In the Preferred Alternative wet year analysis subregion 3B has 39 TAF of water that falls in Tiers 2 or 3. Under the LTCR blended pricing mechanism all of the subregions CVP water is priced at a level that is lower than the Preferred Alternative Tier 2. This additional affordable CVP water is used resulting in a less groundwater being pumped.
9	Shift from CVP to Groundwater in all sequences	The blended price of CVP water in subregion 9 is greater than the groundwater pumping cost resulting in the shift from CVP to groundwater.
10	Shift from CVP to Groundwater in Dry to Average and Average, Wet and Dry to Wet sequences	Due to an increase in the CVP price relative to the Preferred Alternative, the depth to which groundwater can be affordable pumped increases resulting in the shift from CVP supplies to groundwater.
13	Shift from groundwater to CVP in Average to Average, Wet to Average, Average to Wet and Wet to Wet sequences	In the Preferred Alternative Average and Wet conditions subregion 13 had water classified as Tier 2 or Tier 3 which was not affordable, and pumped groundwater to supplement it's Tier 1 supply down to a depth at which it was no longer affordable. In the LTCR sequences, the blended price is less expensive than the Preferred Alternative upper Tier price, therefore a shift is made from the deepest groundwater to the now affordable CVP supply.
13	Shift from CVP to Groundwater in Dry to Average and Dry to Wet sequences	Under the LTCR blended price mechanism, when coming out of a drought into a Average or Wet year the blended price increases. In these situations, shallow groundwater is less expensive than the CVP blended price. As more groundwater is pumped the cost increases as the pump lift increases and the cost eventually becomes greater than the CVP blended price. When this happens the remainder of the subregions water supply is taken from the CVP supplies.
16	Shift from CVP to Groundwater in all sequences	The blended price of CVP water in subregion 16 is greater than the groundwater pumping cost resulting in the shift from CVP to groundwater.
17	Shift from groundwater to CVP	In the Preferred Alternative Average and Wet conditions this subregion had water classified as Tier 2 or Tier 3 which was not affordable. The subregion pumped groundwater down to a depth at which it was no longer affordable to supplement the CVP water it was able to afford. In the LTCR sequences, the blended price is less expensive than the least expensive CVP tier that was not used, therefore a shift is made from the deepest groundwater to the now affordable CVP supply.
19	Shift from CVP to Groundwater in Dry to Dry sequence	The blended pricing causes the Dry to Dry CVP water cost to rise higher than the groundwater pumping cost resulting in the shift from CVP to groundwater.

SECTION 2
REGIONAL ECONOMICS

REGIONAL ECONOMICS

This analysis identifies the regional economic impacts of two out of the nine total Long Term Contract Renewal sequences; an Average year following an Average 5-year base condition, and a Average year following a Dry 5-year base condition. The regional economic analysis is restricted to these sequences because they are the only sequences that represent long-run conditions. The Input-Output model used in the regional economic analysis assumes a long run equilibrium is reached, therefore it is inappropriate to model short run responses represented by the Wet and Dry year conditions. While the Average year following the Dry 5-year base condition is not strictly a long-run scenario, as described in the Agricultural and Land Use and Economics section, there are some regions that will be permanently impacted by a five year series of drought years. Because of this, the results can be considered long run.

The assumptions and baseline data used in this analysis are the same as what was used in the Preferred Alternative. Tables 23 and 24 show the results of the Average year following an Average 5-year base condition, Tables 25 and 26 the Average year following an Wet 5-year base condition, and Tables 27 and 28 the Average year following an Dry 5-year base condition. Tables 23, 25, and 27 present the impacts by economic sectors that are aggregations of SIC industries. Tables 24, 26, and 28 present the regional economic impacts broken out by the source of the impact including reduced agricultural output, changes in net farm income, and changes in M&I water costs. Note that regional economic impacts are not reported for the North Coast or the Central and South Coast regions because the rolling five year average tiered pricing mechanism has no impact on these regions.

AVERAGE YEAR FOLLOWING AVERAGE 5-YEAR BASE CONDITION

Table 23 shows the employment, output and income effects on all sectors in each regional economy of the long-term contract renewals. Most of the impacts are felt in the Manufacturing, Trade and Services sectors. These impacts are derived from the impact to net income. The economic impacts by region from each source can be seen in Table 24. Reduction in net income resulting from changes in CVP water cost, groundwater pumping, irrigation costs and changes in crop prices have the greatest impact at the statewide level.

AVERAGE YEAR FOLLOWING DRY 5-YEAR BASE CONDITION

Table 27 shows the employment, output and income effects for each regional economy and the State as a whole broken out by the impacted sectors. Table 28 shows how each of the impact sources contribute to the total impact. The reduction in agricultural output in the Sacramento River region relative to the Preferred Alternative dominates the Statewide impact.

TABLE 22

REGIONAL ECONOMIC IMPACTS ON ALL SECTORS: AVERAGE YEAR FOLLOWING AVERAGE 5-YEAR
BASE CONDITION COMPARED TO THE PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION

Region Directly Impacted	Impacts on all Sectors					
	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Sacramento River						
Agriculture						
Reduced Output	-10	-20	-0.5	-1.2	-0.2	-0.6
Reduced Net Income	-20	-50	-0.9	-2.3	-0.5	-1.3
Total Agriculture	-30	-60	-1.4	-3.5	-0.7	-1.9
M&I Water Costs	-60	-130	-3.9	-8.5	-2.0	-4.7
TOTAL 1/	-90	-190	-5.3	-12.0	-2.8	-6.6
San Joaquin River						
Agriculture						
Reduced Output	0	0	-0.2	-0.3	-0.1	-0.2
Reduced Net Income	20	40	0.8	1.8	0.5	1.0
Total Agriculture	20	30	0.7	1.5	0.4	0.9
M&I Water Costs	-80	-150	-5.0	-9.4	-2.6	-5.1
TOTAL 1/	-60	-120	-4.3	-7.9	-2.2	-4.2
Tulare Lake						
Agriculture						
Reduced Output	0	0	0.0	0.0	0.0	0.0
Reduced Net Income	-50	-80	-2.1	-4.1	-1.1	-2.2
Total Agriculture	-50	-80	-2.1	-4.1	-1.1	-2.2
M&I Water Costs	0	0	0.0	0.0	0.0	0.0
TOTAL 1/	-50	-80	-2.1	-4.1	-1.1	-2.2
Bay Area						
Agriculture						
Reduced Output	0	0	0.0	0.0	0.0	0.0
Reduced Net Income	0	-10	-0.2	-0.4	-0.1	-0.2
Total Agriculture	0	-10	-0.2	-0.4	-0.1	-0.2
M&I Water Costs	-60	-130	-4.4	-9.4	-2.4	-5.4
TOTAL 1/	-60	-130	-4.6	-9.8	-2.5	-5.6
California Total						
Agriculture						
Reduced Output	-10	-20	-0.7	-1.5	-0.3	-0.8
Reduced Net Income	-50	-100	-2.3	-5.0	-1.2	-2.7
Total Agriculture	-60	-120	-3.0	-6.5	-1.6	-3.5
M&I Water Costs	-200	-410	-13.3	-27.4	-7.0	-15.1
TOTAL 1/	-260	-530	-16.3	-33.9	-8.6	-18.6

Note: (1) May differ from sum of elements due to rounding.

TABLE 23
REGIONAL ECONOMIC IMPACT: AVERAGE YEAR FOLLOWING AVERAGE 5-YEAR BASE CONDITION COMPARED TO THE
PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION

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Region and Affected Sector	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Sacramento River						
Agric., Frst., Fish.	-10	-10	-0.4	-0.5	-0.2	-0.3
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	-0.2	0.0	-0.1
Manufacturing	-10	-20	-1.6	-2.2	-0.6	-0.8
TCU	0	-10	-0.2	-0.9	-0.1	-0.5
Trade	-40	-70	-1.1	-2.1	-0.7	-1.3
FIRE	-10	-20	-0.8	-2.6	-0.5	-1.7
Services	-20	-60	-0.9	-2.8	-0.6	-1.7
Government	0	-10	-0.2	-0.7	-0.1	-0.3
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-90	-190	-5.3	-12.0	-2.8	-6.6
San Joaquin River						
Agric., Frst., Fish.	0	-10	-0.2	-0.3	-0.1	-0.1
Mining	0	0	-0.1	-0.1	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	-0.1
Manufacturing	-10	-10	-0.8	-1.1	-0.2	-0.3
TCU	0	-10	-0.3	-0.6	-0.2	-0.3
Trade	-10	-30	-0.4	-1.1	-0.2	-0.6
FIRE	-10	-20	-1.1	-2.1	-0.7	-1.3
Services	-30	-50	-1.2	-2.2	-0.7	-1.3
Government	0	0	-0.2	-0.3	-0.1	-0.1
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-60	-120	-4.3	-7.9	-2.2	-4.2
Tulare Lake						
Agric., Frst., Fish.	0	0	0.0	0.0	0.0	0.0
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	0.0	0.0	0.0
Manufacturing	-10	-10	-1.0	-1.3	-0.4	-1.3
TCU	0	0	0.0	-0.2	0.0	-0.2
Trade	-40	-50	-1.0	-1.4	-0.7	-1.4
FIRE	0	0	0.0	-0.4	0.0	-0.4
Services	0	-10	0.0	-0.6	0.0	-0.6
Government	0	0	0.0	-0.1	0.0	-0.1
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-50	-80	-2.1	-4.1	-1.1	-4.1

TABLE 23
REGIONAL ECONOMIC IMPACT: AVERAGE YEAR FOLLOWING AVERAGE 5-YEAR BASE CONDITION COMPARED TO THE
PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION

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Region and Affected Sector	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Bay Area						
Agric., Frst., Fish.	0	0	0.0	-0.1	0.0	0.0
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	-0.1
Manufacturing	-10	-10	-1.2	-1.9	-0.4	-0.7
TCU	0	-10	-0.3	-0.8	-0.2	-0.4
Trade	-20	-40	-0.9	-1.7	-0.5	-1.0
FIRE	-10	-20	-1.0	-2.3	-0.6	-1.5
Services	-20	-50	-1.1	-2.6	-0.7	-1.6
Government	0	0	-0.2	-0.3	-0.1	-0.1
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-60	-130	-4.6	-9.8	-2.5	-5.6
California Total						
Agric., Frst., Fish.	-10	-20	-0.6	-0.9	-0.3	-0.5
Mining	0	0	-0.1	-0.1	0.0	0.0
Construction	0	-10	0.0	-0.5	0.0	-0.3
Manufacturing	-30	-50	-4.7	-6.5	-1.6	-3.1
TCU	-10	-20	-0.8	-2.5	-0.4	-1.4
Trade	-110	-190	-3.4	-6.3	-2.2	-4.4
FIRE	-20	-60	-2.9	-7.4	-1.8	-4.9
Services	-70	-180	-3.2	-8.1	-1.9	-5.2
Government	0	-10	-0.6	-1.4	-0.3	-0.7
Misc	0	0	-0.1	-0.1	-0.1	-0.1
TOTAL/1	-260	-530	-16.3	-33.9	-8.6	-20.5
Note:(1) May differ from sum of elements due to rounding.						

**TABLE 24
REGIONAL ECONOMIC IMPACTS ON ALL SECTORS: AVERAGE YEAR FOLLOWING WET 5-YEAR
BASE CONDITION COMPARED TO THE PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION**

Region Directly Impacted	Impacts on all Sectors					
	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Sacramento River						
Agriculture						
Reduced Output	0	-10	-0.4	-0.8	-0.2	-0.4
Reduced Net Income	30	50	1.0	2.6	0.5	1.4
Total Agriculture	20	40	0.6	1.8	0.4	1.0
M&I Water Costs	-60	-130	-3.9	-8.5	-2.0	-4.7
TOTAL 1/	-40	-90	-3.3	-6.7	-1.6	-3.6
San Joaquin River						
Agriculture						
Reduced Output	0	0	-0.2	-0.3	-0.1	-0.2
Reduced Net Income	100	170	3.7	8.1	2.1	4.5
Total Agriculture	90	160	3.6	7.8	2.0	4.4
M&I Water Costs	-80	-150	-5.0	-9.4	-2.6	-5.1
TOTAL 1/	20	10	-1.4	-1.6	-0.6	-0.7
Tulare Lake						
Agriculture						
Reduced Output	0	0	0.0	0.0	0.0	0.0
Reduced Net Income	-30	-40	-1.1	-2.1	-0.6	-1.1
Total Agriculture	-30	-40	-1.1	-2.1	-0.6	-1.1
M&I Water Costs	0	0	0.0	0.0	0.0	0.0
TOTAL 1/	-30	-40	-1.1	-2.1	-0.6	-1.1
Bay Area						
Agriculture						
Reduced Output	0	0	0.0	0.0	0.0	0.0
Reduced Net Income	0	0	-0.1	-0.2	0.0	-0.1
Total Agriculture	0	0	-0.1	-0.2	0.0	-0.1
M&I Water Costs	-60	-130	-4.4	-9.4	-2.4	-5.4
TOTAL 1/	-60	-130	-4.5	-9.6	-2.5	-5.5
California Total						
Agriculture						
Reduced Output	0	-10	-0.5	-1.1	-0.2	-0.6
Reduced Net Income	100	180	3.6	8.4	2.0	4.7
Total Agriculture	100	170	3.0	7.3	1.7	4.2
M&I Water Costs	-200	-410	-13.3	-27.4	-7.0	-15.1
TOTAL 1/	-100	-240	-10.3	-20.1	-5.3	-11.0

Note: (1) May differ from sum of elements due to rounding.

TABLE 25
REGIONAL ECONOMIC IMPACT: AVERAGE YEAR FOLLOWING WET 5-YEAR BASE CONDITION
COMPARED TO THE PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION

Region and Affected Sector	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Sacramento River						
Agric., Frst., Fish.	0	-10	-0.2	-0.3	-0.1	-0.2
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	-0.1
Manufacturing	0	-10	-0.7	-0.9	-0.2	-0.3
TCU	0	0	-0.2	-0.6	-0.1	-0.3
Trade	0	-10	-0.2	-0.7	0.0	-0.3
FIRE	-10	-20	-0.8	-1.8	-0.5	-1.1
Services	-20	-40	-0.9	-1.9	-0.6	-1.1
Government	0	0	-0.2	-0.5	-0.1	-0.2
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-40	-90	-3.3	-6.7	-1.6	-3.6
San Joaquin River						
Agric., Frst., Fish.	0	0	-0.1	-0.2	-0.1	-0.1
Mining	0	0	-0.1	-0.1	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	0.0
Manufacturing	10	10	0.6	0.8	0.3	0.4
TCU	0	0	-0.3	-0.4	-0.2	-0.2
Trade	60	60	1.0	1.1	0.8	0.9
FIRE	-10	-10	-1.1	-1.2	-0.7	-0.8
Services	-30	-30	-1.2	-1.2	-0.7	-0.7
Government	0	0	-0.2	-0.2	-0.1	-0.1
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	20	10	-1.4	-1.6	-0.6	-0.7
Tulare Lake						
Agric., Frst., Fish.	0	0	0.0	0.0	0.0	0.0
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	0.0	0.0	0.0
Manufacturing	0	-10	-0.5	-0.7	-0.2	-0.7
TCU	0	0	0.0	-0.1	0.0	-0.1
Trade	-20	-30	-0.5	-0.7	-0.4	-0.7
FIRE	0	0	0.0	-0.2	0.0	-0.2
Services	0	-10	0.0	-0.3	0.0	-0.3
Government	0	0	0.0	0.0	0.0	0.0
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-30	-40	-1.1	-2.1	-0.6	-2.1
Bay Area						
Agric., Frst., Fish.	0	0	0.0	-0.1	0.0	0.0
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	-0.1
Manufacturing	-10	-10	-1.2	-1.9	-0.4	-0.7
TCU	0	-10	-0.3	-0.8	-0.2	-0.4
Trade	-20	-40	-0.8	-1.6	-0.5	-1.0
FIRE	-10	-10	-1.0	-2.2	-0.6	-1.5
Services	-20	-50	-1.1	-2.6	-0.7	-1.6
Government	0	0	-0.2	-0.3	-0.1	-0.1
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-60	-130	-4.5	-9.6	-2.5	-5.5
California Total						
Agric., Frst., Fish.	-10	-10	-0.4	-0.7	-0.2	-0.3
Mining	0	0	-0.1	-0.1	0.0	0.0
Construction	0	0	0.0	-0.3	0.0	-0.2
Manufacturing	-10	-10	-1.7	-2.7	-0.5	-1.2
TCU	-10	-10	-0.8	-1.8	-0.4	-1.0
Trade	20	-20	-0.5	-1.9	-0.1	-1.2
FIRE	-20	-40	-2.9	-5.5	-1.8	-3.6
Services	-70	-130	-3.2	-5.9	-1.9	-3.8
Government	0	-10	-0.6	-1.0	-0.3	-0.5
Misc	0	0	-0.1	-0.1	-0.1	-0.1
TOTAL/1	-100	-250	-10.3	-20.1	-5.3	-12.0

Note:(1) May differ from sum of elements due to rounding.

**TABLE 26
REGIONAL ECONOMIC IMPACTS ON ALL SECTORS: AVERAGE YEAR FOLLOWING DRY 5-YEAR
BASE CONDITION COMPARED TO THE PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION**

Region Directly Impacted	Impacts on all Sectors					
	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Sacramento River						
Agriculture						
Reduced Output	-700	-2240	-92.1	-194.5	-30.8	-86.9
Reduced Net Income	130	240	4.7	12.4	2.6	6.9
Total Agriculture	-570	-2000	-87.4	-182.1	-28.2	-80.0
M&I Water Costs	-60	-140	0.4	-0.9	-0.2	-0.5
TOTAL 1/	-630	-2140	-91.8	-191.6	-30.5	-85.2
San Joaquin River						
Agriculture						
Reduced Output	-10	-20	-0.7	-1.5	-0.3	-0.7
Reduced Net Income	-140	-240	-5.4	-11.7	-3.0	-6.5
Total Agriculture	-150	-270	-6.1	-13.2	-3.3	-7.3
M&I Water Costs	-80	-150	0.0	0.0	0.0	0.0
TOTAL 1/	-230	-420	-11.0	-22.7	-5.9	-12.4
Tulare Lake						
Agriculture						
Reduced Output	0	-10	-0.2	-0.5	-0.1	-0.2
Reduced Net Income	-100	-170	-3.6	-7.1	-1.9	-3.8
Total Agriculture	-100	-170	-3.8	-7.6	-2.0	-4.0
M&I Water Costs	0	0	0.0	0.0	0.0	0.0
TOTAL 1/	-100	-170	-4.4	-8.8	-2.3	-4.6
Bay Area						
Agriculture						
Reduced Output	0	0	0.0	0.0	0.0	0.0
Reduced Net Income	-10	-20	-0.6	-1.4	-0.3	-0.8
Total Agriculture	-10	-20	-0.6	-1.4	-0.3	-0.8
M&I Water Costs	-60	-130	-0.5	-1.1	-0.3	-0.6
TOTAL 1/	-70	-150	-5.0	-10.8	-2.8	-6.2
California Total						
Agriculture						
Reduced Output	-710	-2270	-93.0	-196.5	-31.2	-87.9
Reduced Net Income	-120	-190	-4.8	-7.8	-2.6	-4.1
Total Agriculture	-830	-2460	-97.8	-204.3	-33.8	-92.0
M&I Water Costs	-200	-420	-0.1	-1.9	-0.5	-1.1
TOTAL 1/	-1030	-2880	-112.2	-233.8	-41.4	-108.3

Note: (1) May differ from sum of elements due to rounding.

**TABLE 27
REGIONAL ECONOMIC IMPACT: AVERAGE YEAR FOLLOWING DRY 5-YEAR BASE CONDITION
COMPARED TO THE PREFERRED ALTERNATIVE AVERAGE YEAR CONDITION**

Region and Affected Sector	Employment (# of jobs)		Output (\$MM)		PoW Income (\$MM)	
	Direct	Total	Direct	Total	Direct	Total
Region and Affected Sector	Direct	Total	Direct	Total	Direct	Total
Sacramento River						
Agric., Frst., Fish.	-450	-630	-26.1	-33.0	-13.4	-16.6
Mining	0	0	0.0	-0.1	0.0	0.0
Construction	0	-30	0.0	-2.1	0.0	-1.2
Manufacturing	-230	-290	-64.9	-73.1	-16.9	-19.8
TCU	0	-120	-0.2	-16.8	-0.1	-7.5
Trade	90	-310	1.6	-13.8	1.2	-8.1
FIRE	-10	-200	-0.9	-22.7	-0.5	-14.6
Services	-20	-500	-1.0	-22.8	-0.6	-13.8
Government	0	-50	-0.2	-7.2	-0.1	-3.5
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-630	-2130	-91.8	-191.6	-30.5	-85.2
San Joaquin River						
Agric., Frst., Fish.	-10	-20	-0.8	-1.2	-0.4	-0.5
Mining	0	0	-0.1	-0.1	0.0	0.0
Construction	0	0	0.0	-0.3	0.0	-0.1
Manufacturing	-30	-40	-3.8	-5.1	-1.4	-1.9
TCU	0	-10	-0.3	-1.2	-0.2	-0.6
Trade	-140	-210	-3.6	-5.8	-2.4	-3.7
FIRE	-10	-30	-1.1	-4.2	-0.7	-2.7
Services	-30	-100	-1.2	-4.3	-0.7	-2.6
Government	0	-10	-0.2	-0.5	-0.1	-0.2
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-230	-420	-11.0	-22.7	-5.9	-12.4
Tulare Lake						
Agric., Frst., Fish.	0	-10	-0.3	-0.4	-0.1	-0.4
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	-0.1
Manufacturing	-20	-20	-2.1	-2.7	-0.7	-2.7
TCU	0	0	0.0	-0.4	0.0	-0.4
Trade	-80	-110	-2.1	-2.9	-1.5	-2.9
FIRE	0	-10	0.0	-0.9	0.0	-0.9
Services	0	-30	0.0	-1.2	0.0	-1.2
Government	0	0	0.0	-0.2	0.0	-0.2
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-100	-170	-4.4	-8.8	-2.3	-8.8
Bay Area						
Agric., Frst., Fish.	0	0	0.0	-0.1	0.0	0.0
Mining	0	0	0.0	0.0	0.0	0.0
Construction	0	0	0.0	-0.1	0.0	-0.1
Manufacturing	-10	-10	-1.4	-2.2	-0.5	-0.8
TCU	0	-10	-0.3	-0.8	-0.2	-0.4
Trade	-30	-50	-1.1	-2.0	-0.7	-1.3
FIRE	-10	-20	-1.0	-2.4	-0.6	-1.6
Services	-20	-60	-1.1	-2.8	-0.7	-1.8
Government	0	0	-0.2	-0.3	-0.1	-0.2
Misc	0	0	0.0	0.0	0.0	0.0
TOTAL/1	-70	-150	-5.0	-10.8	-2.8	-6.2
California Total						
Agric., Frst., Fish.	-470	-660	-27.2	-34.6	-13.9	-17.5
Mining	0	0	-0.1	-0.2	0.0	-0.1
Construction	0	-40	0.0	-2.6	0.0	-1.5
Manufacturing	-290	-370	-72.2	-83.1	-19.6	-25.2
TCU	-10	-140	-0.8	-19.3	-0.4	-8.9
Trade	-170	-680	-5.0	-24.5	-3.3	-16.0
FIRE	-20	-260	-2.9	-30.2	-1.8	-19.8
Services	-70	-680	-3.3	-31.1	-2.0	-19.3
Government	0	-60	-0.6	-8.2	-0.3	-4.1
Misc	0	0	-0.1	-0.1	-0.1	-0.1
TOTAL/1	-1030	-2880	-112.2	-233.8	-41.4	-112.5

Note:(1) May differ from sum of elements due to rounding.



SECTION 3
MUNICIPAL AND INDUSTRIAL WATER USE ECONOMICS

MUNICIPAL AND INDUSTRIAL ECONOMICS

The municipal and industrial economics analysis is based upon the Average-Average tiered pricing scenario. This analysis is based upon the impacts to CVP contractors. This is different than the municipal and industrial economic analysis that was included in the PEIS.

The PEIS municipal and industrial water cost analysis primarily evaluated the impacts on the need and cost to transfer water to non-CVP municipalities. Therefore, the analysis included water costs for many non-CVP water users. For example, the municipality in the San Joaquin River Basin was based upon the Cities of Stockton and Fresno water costs which are not based on CVP water, as described in the Municipal Water Costs Methodology and Modeling Technical Appendix to the PEIS.

The analysis included in the following table is based only on CVP contractors in order to define the cost of CVP water under the Tiered Water Pricing proposal.

APPENDIX D

7 Comment Letters (December 2000)

Comment letters were considered in the preparation of the
Revised Draft EA

Distribution List for the Revised Draft EA (2004)

SCH Letter



Gray Davis
GOVERNOR

Governor's Office of Planning and Research
State Clearinghouse



December 4, 2000

Al Casalek
U.S. Bureau of Reclamation
2100 Cottage Way
Sacramento, CA 95825

Subject: Contra Costa Canal/Lake Long-Term Contract Renewal
SCH# 2000114006

Dear Al Casalek:

The State Clearinghouse submitted the above named Environmental Assessment to selected state agencies for review. The EIR/EIS packet closed on December 1, 2000, and the state agencies submitted comments by December 3. The letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 467-0817 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the two-digit State Clearinghouse number when contacting the office.

Sincerely,

Jerry Roberts

Terry Roberts
System Manager, State Clearinghouse

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RECEIVED
STATE CLEARINGHOUSE
DEC 10 2000

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12/10/00

FOR FURTHER INFO CONTACT SACRAMENTO, CALIFORNIA 95825
916-467-0817 FAX 916-467-2028 WWW.DFRC.CA.GOV/CLEARINGHOUSE.HTML

EG# 2000114006
Project Title: Contra Costa Canal/Lake Long-Term Contract Renewal
Lead Agency: U.S. Bureau of Reclamation

Type: EA - Environmental Assessment
Description: Long term water service contract renewal with the Contra Costa Canal/Lake

Lead Agency Contact:
Name: Al Casalek
Agency: U.S. Bureau of Reclamation
Phone: 916-438-6052 Fax:
Address: 2100 Cottage Way
City: Sacramento State CA Zip: 95825

Project Location:
County: Contra Costa
City:
Region:
Cross Streets:
Parcel No.
Fees/Map Range Station Easement

Proximity to:
Highways:
Airports:
Railways:
Waterways: Central Valley Water Project-Contra Costa Canal
Bodies of Water:
Land Use: Central Valley Water Project.

Project Issues: Water Supply
Reviewing Agencies: Resource Agency, Department of Conservation; Department of Boating and Waterways; Department of Fish and Game, Region 3; Department of Fish and Game, Headquarters; Delta Protection Commission; Department of Parks and Recreation; Reclamation Board; Department of Water Resources; California Division of Transportation Planning; State Water Resources Control Board; Division of Water Rights; Regional Water Quality Control Board, Region 2; Regional Water Quality Control District, Region 5 (Sacramento); Native American Heritage Commission; State Lands Commission

Date Received: 11/02/2000 Start of Review: 11/02/2000 End of Review: 12/01/2000



CONTRA COSTA
WATER DISTRICT

1871 Concord Avenue
PO Box 100
Concord, CA 94604
Tel: 925-300-7000 Fax: 925-300-8173

December 19, 2000

Division
James Ford
President

Norm D. Escamz, D.C.
Vice President

Esteban R. Anelo
Board Chairman
Joseph L. Campbell

Walter J. Baibog
General Manager

Judi Tapia, Environmental Specialist
U.S. Bureau of Reclamation
South-Central California Area Office
1243 "N" Street
Fresno, CA 93721-1813


Subject: Clarification of Comments on Environmental Assessment for the
Long-Term Contract Renewal, Contra Costa Canal Unit

Dear Judi:

Enclosed please find, as we discussed December 8 on the telephone, revised comments on the above referenced Environmental Assessment. The revisions are provided to provide clarity and facilitate processing by the consultant. Please replace the Contra Costa Water District (CCWD) comments dated December 8 and addressed to Jeddly Smith in the Tracy Office, with those dated December 19, 2000.

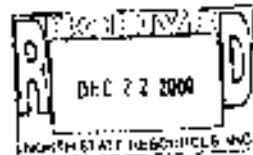
CCWD would like to meet with you and the consultant to discuss our comments. If you have any questions, please call me at (925) 688-8312 or Gary Darling at (925) 688-8165.

Sincerely,


Frances S. Garland
Principal Planner

cc: Laura Kees, North State Resources
Gary Darling

Attachment



Specific Comments on the Environmental Assessment for the Long-Term Contract Renewal
 Contra Costa Canal Title

Author	Page Reference	Comment
GG	Table of Contents Page 1, Line 18	Universal change "...Contra Loma Reservoir Water Quality Improvement Project" (however, see comment FC: p.1-6, below)
GL	Executive Summary Page ES-1, 1 st line	Universal change-Eliminate "County" out of CCWD
GG	Executive Summary Page ES-1, Paragraph 3, Bullet #1	"...the needs of irrigation, municipal and industrial..."
GG	Page ES-4, Alternative 1 Bullet #1	Although we concede that this EA does not cover future state-walls, it should be noted that M&I contract renewal is guaranteed in the '56 Act.
JG	Page ES-4, Alternative 1 Bullet #4	Add a parenthetical that O&M of the Canal facilities was transferred to CCWD by MOA dated June 23, 1972, as amended May 13, 1995.
GG	Page BS-6, Summary of Previous Environmental Documentation Paragraph 1	"... prepared by CCWD and certified in February, 1999..." "The M&I EIR/EIS, prepared by CCWD and certified by CCWD on October 3, 1999 and for which reclamation issued a Record of Decision on November 27, 2000..."
GL	Page BS-6, Summary of Previous Environmental Documentation Paragraph 3, Last Sentence	"These four (including the CCCCP?) documents..."
GG	Page ES-8, Table ES-3 Row 2, Socioeconomics, Sentence 1	Need to provide the source of the 155.7 thousand AFD, the quantity of non-CVP water assumed and the price assumptions—suggest a footnote
JG	Page ES-8, Table ES-3 Row 2, Socioeconomics	It is not clear why 400 af is used on box 3 while 2,000 af is used in box 4. Is one CVP and the other local? Text on page 4-23 and Table 4-8 are similarly confusing.
GG	Page ES-8, Table ES-3, Row 2, Sentence 4	Need to provide basis for the "over \$50 million"—suggest a footnote with quantities and prices.
GG	Page 1-3	Drop "County" from CCWD title
GG	Page 1-3 Basis of CCWD Renewal Paragraph 2	CCWD disagrees with this interpretation of the right to renew language. Under the 1936 Act, M&I are guaranteed the right to renew. The CVP/A does not countermand this Act. (see also comment on ES-4 Bullet #1 above)
GG	Page 1-4, Seismic and Reliability	Delete #5, remainder
GG	Page 1-5, Seismic and Reliability	Delete #9 and last sentence in paragraph
GG	Page 1-5, City of Antioch Pump Project	The City of Antioch pump project was completed and became operational in 1999.
JG	Page 1-6, Contra Loma Reservoir Project	The Contra Loma project is not relevant to CVP contract renewal or CCWD's future water supply implementation program and should be deleted.

Environmental Assessment - CCWD comments
 December 19, 2000
 Page 7

Author	Page Reference	Comment
FC	Page 2-10, Table 2-1 Comparison of Contract Provisions	from the EA "Water to be made available..." - 1) There appears to be confusing language under the first entry for "No-Action Alt." 2) The assumptions regarding operating to minimize impacts are not sufficient to evaluate the project alternatives. Shortage policy and reliability are two of the most critical issues in contract renewal and cannot be glossed over in this way. See also comment for FC: p. 2-11.
FK	Page 2-11, Table 2-1	"Constraints on Availability..." see comment above; these gross assumptions do not lend themselves to impact analysis and are unacceptable relative to such critical issues as reliability and shortage.
FK	Page 2-14, Table 2-2 Summary of Environmental Impacts	4 th row, Cultural Resources - "Bethel Island" is not in CCWD service area (although it is in the IWSL study area).
FC	Page 4-2, Contract Service Area Description, first paragraph	"The East County includes Antioch, Bay Point, Petaluma, and Oakley."
GG	Page 4-2, CCWD Paragraph 2, Sentence 2	"... from other sources and virtually 100% from the CVP in dry years" (Note: please provide source of the "100%", it seems high.)
BB	Page 4-5, Surface Water Supplies and Facilities Operations	Note: Spelling - Clair Eagle, not Clair Eagle II" paragraph, 1 st sentence)
GG	Page 4-5, Contra Costa Canal Unit Sentences 7-12	Delete starting with "The Canal is the District's only raw water conveyance" in the end of the paragraph - not relevant here.
GL	Figure 2: Project Area Generalized Land Use (Map after Page 4-6)	The map should be revised to show the LV watershed as open space.
EG	Page 4-11, Cumulative Impacts First Paragraph	"CCWD" - change to CCWD.
FC	Page 4-12, Socioeconomics analysis generally	The analysis only deals with impacts of changes in prices; the impacts of reliability, particularly on industry, are potentially great and needs to be addressed.
GG	Page 4-13, M&I Water Use and Cost Paragraph 3	Appear to be a math error; the quantities by customer class given do not add up to 108,764 AFD
BB	Page 4-13, M&I Water Use and Cost	Why is 1994 Rate Data being used? The table indicates that the Ag rate is significantly higher than the M&I rate. This may have been true for that brief period of time, but only because the Ag rate was saddled with a large non-interest bearing historical deficit (comprising 52% of the \$37 COS

Author	Page Reference	Comment
		Ag rate) that was repaid over a 3 year period. Our M&I rate is significantly higher than the Ag rate currently, and will continue to be so on into the future because of the interest bearing nature of the capital rate (Ag capital is non-interest bearing).
CG	Page 4-14, Table 4-3.	Can the table be updated? The data are almost ten years old. Also, footnotes explaining how output and income POW are measured would be useful.
CG	Page 4-15, Assessment Methodologies Paragraph 4, Sentence 3	Is this the key assumption for the \$50 million shown in Table ES-1? See also comments on Table ES-1 above.
JB	Page 4-16, Table 4-4 Comparison of the Alternatives	Alternative 2 - Bureau is no longer considering (except for Westside contractors) two Categories of water when applying the \$0-10-10 tiered pricing aspect of the CVPLA. This should lower the cost of water for both Ag and M&I. Use of 3-year average deliveries or some similar averaging method will be implemented in 2002 water rates.
FG	Page 4-17, Agricultural Water Costs Last Paragraph	Text of this paragraph is inconsistent with the rates shown in Table 4-2 where Ag is higher than M&I.
CG	Page 4-17, Agricultural Water Costs Last paragraph, Line 7	"This additional cost is incorporated into the District's agricultural water rates."
FG	Page 4-18, Agricultural Water Costs Paragraph 1	Text of this paragraph is inconsistent with the rates shown in Table 4-2 where Ag is higher than M&I.
CG	Page 4-18, Agricultural Water Costs Paragraph 2, Last Sentence	Add the following: <i>However, decisions on rates are made by the CCWD Board of Directors and CCWD is not bound by these assumptions.</i>
CG	Page 4-21, Environmental Consequences Paragraph 1, Last Sentence and Table 4-6, 6 th row	Again, need to explain how the \$50 million is derived (perhaps by adding a footnote with the \$300 per acre assumption)
FCI	Page 4-21, Table 4-6 Projected M&I Water Cost	To help clarify the table: Add a line for "Other Supplies" under Average CVP Delivery 2026 (tot) Add a line for "Other Supplies" under Dry CVP Delivery 2026 (tot). Also, give the assumed unit costs for CVP and other under both hydrological conditions.
FCI	Page 4-22, Alternative 2 First paragraph	Need to see how 3% was derived, and note that the more appropriate measure would be against raw water costs not treated water costs (because CCWD is both a wholesaler and retailer). A 3% increase solely related to increased water costs cannot rationally be assumed to be insignificant.
FG	Page 4-22, Table 4-7,	* Same comment as on Table 4-6, add "Other

Author	Page Reference	Comment
	Costs Impacts, Alternative 2	Supplies..."
		* Please provide assumptions behind incremental cost increases as they relate to the tiered pricing scheme of Alt 2
FG	Page 4-23, Agricultural Water Costs First paragraph	The baseline ag rates are not correct, we only use 400 of now, but we could take up to approximately 2,700 ac. Revisit analysis accordingly
CG	Page 4-26, Table 4-11	Can the table be updated? The data is almost ten years old. Also, footnotes explaining how output and income POW are measured would be useful
HS	Page 4-29, Affected Environment	Type - "performed" should be "performed."
FG	Page 4-38, Los Vaqueros Project Biological Opinions	"impacts to diversions at bidout... for delivery of up to 188,000 total AF" (the 148k limit was imposed despite analysis of HRD)
CG	Page 5-2, Water System Capacity	1) Delete the language regarding Los Vaqueros. It is a water quality and reliability project; it does not have a growth reducing component and does not produce new supply. Or, 2) Delete the entire paragraph and move the first two sentences to the section below on growth enhancement of the proposed project.
FG	Page 6-2, California Environmental Quality Act Endangered Species Act	CEQA is done; FWSS EIR consultation is done. In general, need conclusion in each of these - as written, there is no indication how they are relevant to CCWD.
FCI	Page 6-3, National Historic Preservation Act, second paragraph	State a clear conclusion that there are no NHPA issues related to contract renewal.
FCI	Page 6-4, Environmental Justice	Add a conclusion that there are no impacts.
FCI	Page 6-5, Farmland Protection Policy Act and Clean Air Act	Although we agree there is no difference between the three alternatives re impacts on prime farmland or air quality, both of these were found to be significant unavoidable impacts in the FWSS EIR and the CCCUP. CCWD made findings on both. Consider whether this discussion should be augmented with reference to the FWSS EIR and Findings.
CG	Page 7-3, Line 8	Check whether this reference should be in the Draft or Final EIR/ESR and revise as needed. (Reval in 1999)
CG	Appendix C - Economic Analysis	It needs to be made clear in the text what Appendix C is and how it is used or relevant to the economic analysis for CCWD.



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
400 Hartung Drive, Suite 314
San Francisco, California 94712

Handwritten notes and a grid table on a document page.

December 5, 2000

Mr. AJ Cardish
Bureau of Reclamation, Mid-Pacific Region
U.S. Department of the Interior
2800 Cottage Way
Sacramento, CA 95825-1898

Dear Mr. Cardish:

Thank you for the opportunity to comment on the Central Valley Project Improvement Act (CVPIA) Long-Term Water Service Contract Renewal Environmental Assessments prepared for the following divisions: West Sacramento Canal, Feather Water District, Delta-Mendocino Canal, Frazier Division, Cross Valley, San Felipe Division, Shasta/Tuleay, and Contra Costa Canal.

We commend the Bureau of Reclamation's ("Reclamation") welcoming and encouraging Federal, State of California, and non-governmental organization (NGO) natural resource trustee agencies and groups to comment on the CVPIA Long-Term Contract Renewal Environmental Assessment (EA) process. We agree it is imperative to include these organizations within the commentary and decision-making processes.

Further, we concur that effects of water transfers and use of varying alternatives may cause indirect effects on biological resources, land use and local economies that may result in minor but unknown impacts that are difficult to conclusively determine in a given Long-Term Contract Renewal EA. We are pleased to note that Reclamation has made diligent efforts to include known or potential impacts to affected environments in the eight EAs involved here, particularly with regard to agricultural, municipal and industrial uses.

We encourage Reclamation to provide updates and coordinate with other regional DOI bureaus and NGOs involved in natural resource protection and enforcement throughout the reserved contract periods as such updates become necessary.

As a general note on these eight EAs, we understand that water costs and economic impacts involved here are critical to Long-Term Contract Renewals and are detailed exhaustively within these EAs. We are concerned that this is done at the expense of greater biological and natural

resource protection options when evaluating direct or indirect impacts considered alternatives are likely to come upon the environments and ecosystems evaluated in these documents.

We further understand that the CVPIA Programmatic Environmental Impact Statement (PEIS) was intended to serve as the primary EIS for these projects from which the EAs grew, and the EAs exist in lieu of creating an EIS document for the CVPIA Long-Term Contract Renewals, as opposed to these eight well-drafted but occasionally inconsistent documents.

While we provide below suggestions for inclusion into the eight EAs, we would prefer that a more detailed and united study of the CVPIA Water Contract area be conducted and distributed to natural resource trustee agencies for comment. Thus, we recommend that Reclamation seriously consider completing documents that expand upon these EA documents, including a more critical review of the affected natural and biological resource areas and alternative alternatives that encourage more land retirement and less water usage and consumption.

The EA documents, nor any potential EIS documents, must not lose focus on a primary goal of the CVPIA, that is riping Central Valley lands, particularly agricultural lands, into rangelands to diminish agricultural runoff, increase water flows for ecosystem replenishment, and to divert water use to storage in preparation for dry years.

Should the creation of a single EIS document be impracticable, we urge Reclamation to include in all eight EAs more specific information on exactly how Reclamation intends to track water use and varying water transfers in the CVPIA Divisions. The EAs as currently drafted state that water levels and increased or decreased water transfers will likely have some direct and indirect effects on biological and land use resources, but these documents lack specifics on how to track and possibly ameliorate the adverse effects water flows and transfers are likely to have upon vital natural resources.

Therefore, due to the interconnected water systems of the Central Valley, all EAs should clearly reflect that they will not draw water resources from one location with the projections of the other projects as the issuance and purpose of these projects will be fully realized. We also recommend including in greater detail within all the EAs involved here explanations as to the likely direct, indirect and cumulative effects of these CVPIA Long-Term Contract Renewals upon the biological and natural resources within the evaluated environments.

Finally, we recommend including within the EAs an adaptive management approach to monitor water levels and, by extension, the overall health of biological resources in all CVPIA Contract Renewal areas. We feel it is essential that a commitment be made and documented to an active adaptive management process in all eight of the CVPIA EAs involved. The Adaptive Management process requires a systematic and continually improving evaluation of natural resource management policies and practices by learning from the outcomes of operational programs. Its most effective form--"active" adaptive management--employs management

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programs that are designed to experimentally compare selected policies or practices, by evaluating alternative hypotheses about the system being managed.

We recommend that Reclamation refer to the Glen Canyon Dam Adaptive Management Program, administered by Reclamation's Upper Colorado Regional Office in Salt Lake City, Utah, for guidance, as this program is the most detailed and comprehensive illustration of the adaptive management techniques in use today to manage fish and wildlife resources and overall health of these ecosystems. Note also that the CALFED Bay-Delta Program utilizes an adaptive management approach, which can provide guidance for the language of the program within the final CVPIA Long-Term Contract Renewal drafts, and to which the CVPIA areas may already be legally bound under the program of CALFED. The affected CVPIA areas will benefit greatly by the inclusion of an adaptive management process that will increase the overall health of the Central Valley, its ecosystem, and its natural resources.

WEST SACRAMENTO CANALS

Reviewing the overall goals of alternatives for the West Sacramento Canals EA, the No Action Alternative and Alternative 1 apparently will have the same impacts. We are concerned about the reduction in CVP deliveries that may lead to increases in ground water use. This may have an adverse effect on nearby projects where their use of surface water, rather than ground water, may affect water quality or biological resources. As mentioned above, a more detailed system of water use and water transfer monitoring may help alleviate adverse water quality and biological resource impacts by balancing the use of surface and ground waters.

Under Alternative 2, it is determined that it would bring in a lower Total Gross Value Production as projected for Alternative 1. The region's agricultural output could decrease by 3%, further lowering potential revenues and could decrease employment by 2.6%. Of the biological species, the flood sources of the Alameda Canada goose and the sandhill crane are threatened under this alternative. Consequently, there is a greater potential for removing land from agricultural production, which may negatively impact the preservation of cultural resources and possibly lead to increased land erosion. From a biological resource perspective, however, this option should seriously be considered as any Preferred Alternative to decrease water usage in the District and allow for more water storage and to limit the effects of agricultural runoff in the District.

FEATHER WATER DISTRICT

Concerning the Feather Water District, the main considerations for other agencies, such as biological considerations, water transfers, and the balance of water distribution among competing demands by CVPIA are not addressed in this EA since they require further documentation. FWS and others should be kept advised of the preparation of these materials. The PBS relocated CVP water deliveries from the Feather for fish and wildlife purposes. Thus, Feather's supply of water from CVP has decreased. The EA makes no mention of how the water demand is currently being met.

DELTA-MENDOTA CANAL

In the Delta-Mendota Canal EA, Alternative 1 offers no significantly different impacts from a "no-action" alternative with the exception of geology, groundwater levels, and biological resources. Under Alternative 1, increased groundwater pumping could increase land subsidence, depending on the amount of surface water utilized. The report does not, however, acknowledge the presence of the threatened or endangered species that exist within the Delta-Mendota project area or their critical habitats in the area.

Impacts of Alternative 2 are essentially similar to those in Alternative 1 (including impacts noted above). Additionally, Alternative 2 has a more noticeable effect on agriculture: value of production drops from \$1.0 billion in an average year (following a dry, five-year period) to a +\$1.2 million during a dry year. There is also a potential increase in unemployment for the region ranging from 120-420 jobs being lost in the region.

CROSS VALLEY CONTRACTORS

Pertaining to the Cross Valley Contractors EA, the impacts anticipated from Alternative 1 and the No Action Alternative are similar. Water quality and supply will remain relatively unchanged. Potential differences in supply due to conditions in a dry year as compared to a wet year are less than 3% of the current levels. Water quality, however, is questionable. Because the average delivery south of the Delta is projected to decline, this may increase ground water demands and may result in application of water of a lower quality than surface water. Although existing fisheries and biological habitats are likely to experience minimal direct and indirect impacts under these alternatives, more explanation is suggested in this EA to focus on improving water quality for biological resources and municipal uses. Finally it appears that the socio-economic situation in the region will be unaffected by these alternatives.

Under Alternative 2, less ground water pumping may allow farmers to switch to better-quality surface water. More significant changes under Alternative 2 involve biological "renaturation," where additional water flows could result in an increase in the amount of land left fallow, thereby improving restoration possibilities in the area and the ability to return fallow lands to their natural non-agricultural condition. However, this could also displace opportunity to increase wetland habitat in the affected area. Total possible economic changes are less than 1%, which provide ample opportunity to increase critical habitats without adversely affecting the regional economy.

FRUIT DIVISION

The Fruit Division EA is particularly complex in its analyses of impacts upon its region's communities, economy and natural resources. We note the painstaking detail used to describe the impacted environments in the Fruit area and that well-planned alternatives to address direct and indirect environmental impacts are included. We particularly note Section 3 of the document,

pertaining to Affected Environment and Environmental Consequences of the Friant area. We are pleased to note the burgeoning programs in place for biological resource conservation and habitat restoration, specifically the Anadromous Fish Restoration Program. There are concerns, however, about how issues of water quality, drastically decreasing water levels, excessive harvesting of fish, limited cover and spawning habitats will be addressed throughout the 25 year contract term. Data on the potential for adverse and positive impacts on these fish populations are provided, but we recommend including more detailed comments on active alternatives to address these natural resource concerns.

In Section 3, Ground Water Resources, there is analysis on possible recharging of already depleted and overused ground water sources, but no concrete program to ensure that ground water will be replenished throughout the Friant Division area. We suggest greater emphasis on recharging and limiting draw on ground water supplies. Further, this section should emphasize what can be done to abstain from excessive groundwater use, including limiting use in wet years, among Friant Division agricultural and industrial water users, particularly when attempting to implement riparian habitat restoration programs that will require additional water resources.

In the section on the Environmental Consequences of the Fisheries Resources subcategory in this EA, adverse consequences upon the fisheries are likely to occur whenever CVP water is purchased. We are concerned that these purchases will occur randomly and intermittently, and will likely harm the regeneration and maintenance of the fish populations discussed in this section. We would like to see some mention of how the water purchasing and corresponding flow increases or decreases can be "controlled" or scheduled to give the greatest opportunity for these fish populations to regenerate.

Overall, Friant water usage policies, especially those related to ground water levels and usage (Section 3) need to ensure that Friant usage will not interfere with Cross Valley Canal Unit or Delta-Mendota Canal supplies and usage.

SAN FELIPE DIVISION

The San Felipe EA addresses the topic of adaptive management, referring to the Yreka Adaptive Management Plan, taking into account protective measures for fall-run Chinook salmon. In Chapter 4, Reclamation notes that the existing and projected water demands create implementation of long-term water conservation programs, that during periods of drought, the ability to reduce demand for water is limited. San Felipe is not the only project that includes water conservation measures. The balancing of demand especially in dry-dry years is an important consideration for all the projects and for their later refinements. We are also concerned that threatened and endangered species in the area will encounter adverse direct and indirect environmental impacts from the project as currently drafted.

CONTRA COSTA CANAL

Contra Costa County's demand for water is expected to grow with continued development, particularly in the eastern portion of the county. The Future Water Supply Study prepared in 1996 calls for the purchase of water transfers, which require separate environmental documentation and therefore were not included in Alternative 1 or Alternative 2. Further analysis of water transfers should be included in the overview treatment of these eight EAs. Moreover, the main difference between alternative 1 and alternative 2 lies in the pricing of water for agricultural needs, while development in the county is mostly coming from the redevelopment of burned into residential and commercial districts.

SHASTA/TRINITY DIVISIONS

Regarding commentary on specific provisions of the Shasta and Trinity Divisions EA, our analysis primarily focused on Chapter 4, dealing with environmental effects and consequences, however we have a brief comment on earlier sections of this document. In Chapter 2, it is stated that the dispute resolution provisions in the Shasta/Trinity Contract Renewal are only included in Alternative 1. Noting the currently tumultuous state of California water policy, we suggest this be a provision included within the final Contract Renewal, and not simply limited to Alternative 1. Regarding Chapter 4, Reclamation has completed a thorough and well-placed assessment of the impacts to this region, particularly in the area of water usage, pricing, costs, and the effects upon the local economies.

Among the given contract renewal alternatives, it appears alternative 2 provides greater opportunity to allow for land following to divert water to other municipal and industrial uses that are expected to increase in the evaluated area for the next 25 years as agriculture will decline. Consequently, options for use of the water saved from land following for habitat and ecosystem restoration should be clearly delineated within Sections 4.4 and 4.5.

In 4.5.1, Affected Environment, the EA explains that there are "vegetation and wildlife resources that potentially may be affected by" the CVPIA within the Redding Basin area involved in the Shasta and Trinity Divisions. Exactly how these natural resources are affected by the project is not clear in this EA's analysis. The species affected are well detailed in the EA, but how their habitats are impacted by the project is not sufficiently detailed in this section or in the following Environmental Consequences section.

Thus, we recommend more detail on how the CVPIA Contract Renewals impact these birds and bees. Pertaining to drafting errors in the same section, Table 4-5-1 repeats the Woodland Habitat Type three times, and the explanation of the Aquatic Habitat Type is cut off in mid-sentence (page 4-5-3). Otherwise, Chapters 4 and 5 appear to have complete analyses of the potential impacts the CVPIA Contract Renewals may have upon Shasta and Trinity Division-area resources.

We again thank Reclamation for the opportunity to provide comment on the eight CVP/LA Long-Term Contract Renewal EAs, and urge Reclamation to seriously consider the suggestions made above and include them within the final CVP/LA Contracts. Please feel free to contact us at (415) 437-1477 if you have any questions or require clarification on the above comments to the CVP/LA Long-Term Contract Renewal Environmental Assessments.

Sincerely,



Patricia Sanderson Fort
Regional Environmental Officer

cc:

Laura Fujii, U.S. Environmental Protection Agency, Federal Activities Office
Dr. Theresa Prosser, U.S. Geological Survey, Western Regional Office
Joy Winckel, U.S. Fish and Wildlife Service, Sacramento Office



NATIONAL RESOURCES DEFENSE COUNCIL

December 7, 2000

Bureau of Reclamation
Attention: Mr. Al Goodrich
2800 Cottage Way
Sacramento, CA 95825-1198

Dear Mr. Goodrich:

On the behalf of its more than 400,000 members, the National Resources Defense Council ("NRDC") hereby files its comments on the draft environmental assessments ("EAs") on long term renewal of Central Valley Project water service contracts prepared by the Bureau of Reclamation ("the Bureau").

We are deeply disappointed by the Bureau's inadequate attempts to comply with the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 et seq., in its proposed long-term renewal of CVP contracts. First, we strongly object to the Bureau's failure to prepare an environmental impact statement on those proposed agency actions that would have significant, far-reaching and fundamental effects. Second, the EAs themselves fail to meet the requirements of NEPA and cannot possibly support a finding of no significant impact by the Bureau. We urge the Bureau in the strongest possible terms to prepare NEPA documentation on long-term contract renewal which complies with the law, unless EAs emphatically do not.

I. The Bureau Must Prepare an Environmental Impact Statement on the Proposed Long-Term Contract Renewals

NEPA requires federal agencies to prepare a detailed environmental impact statement ("EIS") on all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(D)(2). The purpose of this mandatory requirement is to ensure that detailed information concerning potential environmental impacts is made available to agency decisionmakers and the public before the agency makes a decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 324, 349 (1989).

Under NEPA's procedures, an agency may prepare an EA in order to decide whether the environmental impacts of a proposed project action are significant

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enough to warrant preparation of an EIS. 40 C.F.R. § 1501.4(b), (c). An EA must "provide sufficient evidence and analysis for determining whether to prepare an [EIS]..." 40 C.F.R. § 1508.5(a)(1). The U.S. Court of Appeals for the Ninth Circuit has specifically cautioned that "[i]f an agency decides not to prepare an EIS, it must supply a convincing statement of reasons to explain why a project's impacts are insignificant." *Blue Mountains Biodiversity Project v. Block*, 648 F.2d 1208, 1212 (9th Cir. 1981) (internal quotation marks omitted); *see, e.g.,* *defunct*, 327 U.S. 1003 (1948). To materially challenge an agency decision not to prepare an EIS, a plaintiff need not show that significant effects will in fact occur. So long as the plaintiff raises "substantial" questions whether a project may have a significant effect on the environment, an EIS must be prepared. [i]t [emphasis added] internal quotation marks omitted).

The long-term renewal contracts proposed by the Bureau are virtually certain to have a significant effect on the environment if they are renewed. Collectively they cause the diversion of millions of acre feet of water each year from the natural environment to (primarily) agricultural water users in the Central Valley, for use (primarily) in irrigated agriculture that would be significant environmental impacts. The Bureau simply cannot, consistent with NEPA, allow these environmental impacts to escape full analysis in an EIS on long-term contract renewals.

A. There is Ample Evidence That Long-Term Renewal Contracts Would Have Significant Environmental Effects

The Bureau has failed to meet its duty under governing Ninth Circuit precedent to supply a convincing statement of reasons why the execution of long-term renewal contracts would have insignificant environmental effects. By contrast, there is ample reason to believe that executing contracts for delivery of millions of acre feet of water annually for an effective duration of 50 years would have a significant impact on the environment.

The U.S. Fish and Wildlife Service has recently completed a biological opinion on, among other things, the continued operation and maintenance of the Central Valley Project ("CVP") U.S. Fish and Wildlife Service, *Biological Opinion on Implementation of the CVP EA and Continued Operation of the CVP* (November 2000). This biological opinion described in detail the adverse environmental consequences that have been caused by the Central Valley Project, consequences that include harm to fish and wildlife from various such

We incorporate by reference the biological opinion in these comments. We also incorporate the documents referenced in that biological opinion, including the prior biological opinions of the Central Valley Project listed on pages 1 of the November 2000 biological opinion.

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as water diversion, impoundment, pumping and conveyance; from habitat conversion; from the effects of agricultural disturbance; and from urbanization. All of these effects comprise effects of CVP water service contracts, since they are the consequences of the provision of water under these contracts. See 40 C.F.R. § 1508.2 (listing effects required to be analyzed under NEPA to include indirect as well as direct effects). Because these effects on the environment are significant, they and other effects of signing long-term renewal contracts for the provision of CVP water must be analyzed in an EIS.

Other evidence of significant environmental effects from long-term water service contracts include the evidence submitted by the plaintiffs in NRDC v. Fritchey, No. Civ. S. 88-1418 LKK (E.D. Cal.), which we also incorporate in these comments by reference. The main point here is an obvious one. Through the proposed contracts, the Bureau is proposing to divert to the diversion of millions of acre-feet of water from the natural environment and to the delivery of that water to farms and cities for a nominal period of 25 years and an effective period of 50 years (given the right of renewal contained in the contracts). Activities of this scale and type cannot help but have significant environmental impacts, particularly in light of the significant impacts that have occurred to date under the current and previous CVP water service contracts. Moreover, the scale and duration of the activities that would be committed to under the proposed contracts threaten to cause a deterioration in the current state of the contract, as the environmental effects of the activities mandated under the proposed contracts are added to the environmental harm that has been caused to date under the current and previous contracts. For all these reasons, the Bureau must prepare an EIS on long-term contract renewal.

B. NEPA's Requirements Make Clear That an EIS Must Be Prepared Here.

NEPA's implementing regulations list a variety of factors that federal agencies are required to consider in determining whether a proposed action may significantly affect the environment and hence must be the subject of an EIS. 40 C.F.R. § 1508.27. While the Bureau has failed to undertake an adequate evaluation of these factors here, nearly all of the factors (very few of which are sufficient to require preparation of an EIS) are satisfied in the case of the proposed long-term contracts. For example:

- Water pollution from agricultural disturbance, which is triggered and would be made possible by the delivery of water under the proposed contracts, "affects public health" in a substantial way. See 40 C.F.R. § 1508.27(b)(7).

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- The area to be served under the proposed contracts is in "proximity" to "prime farmlands," "wetlands" (including riparian wetlands), and "ecologically critical areas" (such as the Sacramento-San Joaquin Delta). See id. at 1508.27(b)(1).
- The effects of the water diversions, impoundments and deliveries required under the proposed contracts and the consequences of the irrigated agriculture made possible by deliveries pursuant to the contracts, "are likely to be highly controversial." See id. at 1508.27(b)(4).
- The "possible effects" of the activities and actions made possible by the proposed contracts "are highly uncertain or involve unique or unknown risks," especially in light of the lengthy duration of the contracts. See id. at § 1508.27(b)(5).
- Since numerous CVP contractors are not prepared to sign long-term renewal contracts at the present time and will negotiate such contracts in the future, concluding the proposed contracts would "establish a precedent for future actions with significant effects or represent a decision in principle about a future commitment." See id. at § 1508.27(b)(6).
- In light of the agricultural effects that have occurred from CVP operations to date, and in light of the long duration of the proposed contracts (during which many additional actions will necessarily be taken), the proposed contracts are related to other actions with "cumulatively significant impacts." See id. at § 1508.27(b)(7).
- In light of the well-established adverse effects of CVP activities on the wetland and riparian systems and their habitat, as shown by the biological opinions cited previously in this letter, the proposed contracts "may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973." See id. at § 1508.27(b)(8).

The evidence in favor of an EIS being required here is overwhelming - particularly since "the threshold for requiring an EIS is quite low." NRDC v. Dwyer, 777 F. Supp. 1537, 1551 (E.D. Cal. 1991). In that same case, Chief Judge American Kathan further held that:

only in those obvious circumstances where no effect on the environment is possible, will an EA be sufficient for the environmental review required by NEPA. Under such circumstances, the conclusion reached must be close to self-evident...

- 16. We urge the Bureau in the strongest terms to prepare the required EIS on the proposed long-term contract renewals, in order to comply with the requirements of NEPA.

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D. The Environmental Assessments Fail to Meet the Requirements of NEPA.

Even if an EA were not clearly required here, the EAs prepared by the Bureau are so inadequate as to violate NEPA on their own. They fall far short of the analysis that is necessary to meet NEPA's requirements and to support a finding of no significant impact.

A. The EAs Fail to Consider a Reasonable Range of Alternatives.

NEPA's implementing regulations call analysis of alternatives "the heart of the environmental impact statement," 40 C.F.R. § 1502.14, and they specifically require an alternatives analysis within an EA. *Id.*, at § 1506.9. The statute itself specifically requires federal agencies to:

study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning available uses of resources.

42 U.S.C. § 4332(D)(5). Because the Bureau's EAs on long-term contract renewals look only at a narrow range of alternatives and fail to evaluate numerous reasonable alternatives, the EAs violate NEPA.

The review makes clear that an adequate alternatives analysis is an essential element of an EA, in order to allow the decisionmaker and the public to compare the environmental consequences of the proposed action with the environmental effects of other options for accomplishing the agency's purpose. In a leading NEPA case in which it overturned an EA for failure to consider alternatives adequately, the Ninth Circuit pointedly held that "[c]onformed and meaningful consideration of alternatives . . . is . . . an integral part of the decision-making process." *Bob Marshall Alliance v. Model*, 431 F.2d 1223, 1228 (9th Cir. 1970), cert. denied, 401 U.S. 1046 (1970). To meet NEPA's requirements an EA must consider a reasonable range of alternatives, and courts have not hesitated to overturn EAs when such consideration of a reasonable and feasible alternative. See *Proctor v. Bd. Van der Kamp v. Marsh*, 617 F. Supp. 493, 497 (N.D. Cal. 1990); *Serra Club v. Washin*, 408 F. Supp. 631, 670-73 (D.D.C. 1971).

Each of the contract-renewal EAs considers only two alternatives, in addition to the no-action alternative. Given the scope and importance of the proposed agency action under review, this small number of alternatives is by itself a violation of NEPA's requirement to consider a reasonable range of alternatives. What makes matters worse is the similarity

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between the alternatives that the EAs do consider. For example, each of the alternatives, the no-action alternative and the no-action alternative, specify exactly the same quantities of water under contract. The similarity between the alternatives, though, does not stop with water quantity. The summary tables that compare the alternatives repeatedly use the phrases "same as NAA (No Action Alternative)," "similar to NAA," and "minor changes" to describe the components of the alternatives. *See*, e.g., Draft Prime Division Long-Term Contract Renewal Environmental Assessment ("Prime EA"), at Table DA-1.¹ *See* *supra* at n. 3-57 ("The impacts of EA Alternative 1 are assumed to be identical to the impacts of [the] NAA because the water supply and pricing scenarios are identical in both alternatives. The only differences in the alternatives are administrative."), 3-58 ("the NAA and Alternative 1 are assumed to have the same environmental consequences because of their similarity and the fact that the only differences are contractual arrangements among the parties to the contract").

In addition to considering too few alternatives that are too similar to each other, the EAs reject or ignore several obvious and reasonable alternatives. These unexamined or rejected reasonable alternatives include:

- An alternative that decreases the water quantities under contract. Each of the alternatives in the EAs provides the exact same water quantities that are currently under contract. It plainly is reasonable for the Bureau to consider and evaluate the option of changing those quantities. The Bureau should consider changing the contract quantities to (a) a level that matches the actual level of deliveries in system, normal water years, and (b) a level that would leave a meaningfully larger amount of water in the environment compared with current use, so that the EA can illustrate the choices and consequences between consumption and allocative uses of water. The EA's rejection of the alternative of reducing water quantities, *see*, e.g., Delta-Mendocino Canal Unit Environmental Assessment, Long-Term Contract Renewal, at 2-9, ignores the fact that such an alternative is reasonable and accords with the purpose and need for the agency action under evaluation. *See* *supra* at C.F.R. § 1502.14(a) (agency must "[r]igorously explore and objectively evaluate all reasonable alternatives").
- An alternative that increases the cost of water to full market rates. Each of the action alternatives in the EAs charges the minimum price for water under the contract. The Bureau should evaluate at least one alternative that prices water at the level the water

¹ The EAs are all very similar. Thus, each of the summaries discussed in this letter applies equally to each of the EAs. Each citation to a specific EA is intended as an illustration and in no way suggests that the comment is restricted to that particular EA.

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- would receive on the open market.³ As a consequence, the Bureau must consider price increases that would "encompass the full consideration and incorporation of prudent and responsible water conservation measures." Reclamation Reform Act of 1982, Sec. 210(a), 43 U.S.C. 1902(a).
- An alternative that does not give the contractor a specific right to renew the contract. (While it is possible that there is an right of renewal contained in Alternative 2, the EAs do not make this clear and do not analyze the environmental consequences of this difference, if it does exist in the alternative.)
 - Alternatives that ultimately consider an ecological watershed water conservation by water users, through (a) aggressive prescriptive requirements for water conservation and (b) through financial incentives for water conservation.

Each of the above reasonable alternatives can and should be analyzed and considered for contracts in each of the CVP divisions. In addition, for contracts in each individual division the Bureau should consider at least one strongly environmentally protective alternative that is tailored to the leading environmental problem relating to the operation of the division. So, for example, the Bureau's NEPA analysis for long-term renewal contracts for the Friant Division should consider at least one alternative that conditions the provision of water service on efficient restoration of the San Joaquin River and/or creates specific incentives in the contract for restoration of the river.⁴ As a further example, the NEPA analysis for the Delta Alternatives Canal Unit should consider at least one alternative that conditions the provision of water service on direct improvements in protection and restoration of the Sacramento-San Joaquin Delta and/or creates specific incentives in the contract for such increased environmental protection and restoration of the Delta.

The EAs prepared by the Bureau fail to evaluate a reasonable range of alternatives and hence violate NEPA. We urge the Bureau to prepare NEPA documentation for long-term contracts that fully meets NEPA's requirements for alternatives analysis and that, in a minimum, fully analyzes the alternatives described above.

³ The Bureau clearly has discretion to consider alternative prices. See, e.g., Reclamation Project Act of 1982, sec. 10(a), 43 U.S.C. 1902(a) (rates shall be "at fair valuations to cover an appropriate share of the actual operation and maintenance costs."); Reclamation Reform Act of 1982, sec. 208(a), 43 U.S.C. 1908a(a) ("the price shall be fair valuations to recover all operations and maintenance charges."); see also *NRDC v. Houghton*, 14 F.3d 1151, 1155-56 (9th Cir. 1998) (Bureau has discretion over terms of renewal contracts, including price and quality).

⁴ The Friant EA fails to conduct an adequate analysis of the effect of the proposed decisions on the San Joaquin River and on restoration of the river.

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B. The EAs Fail to Disclose and Analyze Adequately the Environmental Impacts of the Proposed Action.

NEPA's implementing regulations require that an EA "provide sufficient evidence and analysis for determining whether to prepare an [EIS]." 40 C.F.R. § 1508.9(d). For the reasons discussed above, the EAs fail to disclose and analyze adequately the environmental effects of long-term contract renewals. Courts have not been able to overturn EAs that fail to contain an adequate discussion of the environmental consequences of a proposed agency action, e.g., *Protestants on Economic Trade v. Haskins*, 736 F.2d 141 (D.C. Cir. 1983), and the EAs prepared by the Bureau here deserve the same fate.

The discussion and analysis of environmental impact contained in the EAs is cursory and inadequate, and is full (or short) of NEPA's requirements. As an example, the discussion of water-quality impacts contained in the Friant EA shows the cursory and conclusory "analysis" contained in all of the EAs. First, the analysis is misleadingly brief, occupying a single page with considerable space between the short paragraphs – a plainly inadequate treatment in light of the great importance of water quality to public health and the environment. Friant EA at 3-14. Second, the analysis essentially says that there will be no change in water quality impacts under the No Action Alternative and Alternative 1 – without describing in any meaningful way what the qualitative impacts of reducing water quality is on human health and the environment and why those impacts will not change for better or for worse. Id. The six-sentence analysis of the effect of Alternative 2 appears to say that this alternative would cause some changes, but the EA fails to describe what those changes would mean for human health and environment. Id.

This plainly inadequate discussion of environmental impacts is, sadly, far from an isolated example. For example, the same document's discussion of fishery impacts occupies approximately a page and a half and concludes (with no analysis) for the no-action alternative and for Alternative 1, that there would be "no impacts to fishery resources" – a conclusion based apparently on the logic that no changes in environmental impacts from the current effects equals no environmental impacts at all. Id. at 3-41. On the next page, the EA presents the amazing, thoroughly unsupported statement that "Alternative 1 and 2 have little or no effect on surface water quantity and flow," id. at 3-43, despite the fact that both alternatives would result in the diversion and delivery to irrigated agriculture of more than a million acre-feet of water each year for 25 or 50 years. Elsewhere in the same document, the Bureau pretends the permitting and unsupported statement that "Alternative 1 is assumed to have similar effects on the NFA. Therefore, there are no impacts to biological resources under this alternative." Id. at 3-76.

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In addition to failing to disclose or to analyze adequately the environmental effects of the proposed contracts, the EAs impermissibly curtail the timeliness of their analysis. None of the study periods extends forward more than 25 years, e.g., Project EA at 3-4, despite the fact that each of the contracts contains an early satisfied conditional right of renewal that means that the likely and effective duration of these contracts would be 50 years. By failing to analyze the environmental effects of the contracts in the likely event that they are renewed under the rights of renewal established in the contracts, the Bureau has violated NEPA.

We urge the Bureau to prepare NEPA documentation that adequately discloses and analyzes the environmental effects of the contracts over the full lifetime of the contracts, including the renewal period, as the draft EAs do not.

C. The EAs Fail to Analyze Cumulative Impacts Adequately.

These proposed long-term renewal contracts do not exist in a vacuum but instead add to more than half a century of environmental impacts from the construction, operation and maintenance of the CVP. The fact that these contracts would operate for at least a quarter century, and likely then would be renewed for another quarter century, means that their environmental effects will also be added to additional actions that will take place over the next 50 years. These facts make an adequate analysis of cumulative impacts especially important for these proposed contracts.

The Ninth Circuit has made clear that NEPA mandates "a useful analysis of the cumulative impacts of past, present and future projects." Northwest Indian Tribes v. U.S. Forest Service, 177 F.3d 800, 810 (9th Cir. 1999). That Court has further directed that "[i]f such is required in describing the cumulative effects of a proposed action with other proposed actions." Id. The very cursory cumulative-effects discussions contained in the EAs plainly fail to meet these standards of adequacy.

The cumulative effects discussions contained in the EAs are cursory, unanalytic, unenlightening, and often illogical. Here, as full, is the Project EA's cumulative effects "analysis" of the proposed contracts' cumulative effects on surface water:

The cumulative effects of all foreseeable projects will be to place additional demands on the available water supply. Also, the water-use projects may result in additional flows in local rivers for habitat restoration. Implementation of Alternative 1 or 2 will not influence the cumulative effects of other projects on surface water resources.

Comments on Environmental Adjustments on Long-Term Contract Renewal
December 7, 2000
Page 10

Project EA, at 3-22. In addition to being almost entirely uninformative, this three-sentence discussion asks more questions than it answers. What are the foreseeable projects, and what are their additional demands likely to be? What impacts would the proposed contracts have on the opportunities to restore the San Joaquin River? What other cumulative impacts might occur over the life of the project? How is it possible to conclude that the diversion of more than a trillion acre-feet of water every year, for 25 or 50 years, "will not influence cumulative effects" on surface water?

The Ninth Circuit has not been so lax in rejecting cumulative-impacts statements that are "too general and unanalytic to meet the NEPA requirements" and that fail to provide the "useful analysis" mandated by the statute. Northwest, 177 F.3d at 811. The inadequate cumulative effects discussions contained in the contract renewal EAs fail these tests and deserve rejection here.

III. Conclusion.

The contract renewal EAs prepared by the Bureau fall well short of NEPA's established requirements. We urge the Bureau to prepare NEPA documentation on the proposed contracting actions which complies with all requirements of the law.

Sincerely,



Dave Caputo
Senior Attorney

Harrison Corder
Senior Attorney

cc: Hon. David Hayes, Deputy Secretary of the Interior
Hon. John Lasky, Solicitor
Hon. George Brown, Chairman, CEQ



Golden Gate Audubon Society

3710 San Pablo Avenue, Suite G • Berkeley, California 94702
Phone: (415) 843-2782 • Fax: (415) 843-3325 • Email: ggas@comcast.net

Association Charitable by Corporation • A Chapter of the National Audubon Society

December 8, 2000

Al Conditish
Bureau of Reclamation
2800 College Way
Sacramento, CA 95823
Sent by FAX: 916-977-5034

Dear Mr. Conditish:

The Golden Gate Audubon Society appreciates the opportunity to comment on the Bureau of Reclamation's draft Environmental Assessments (EAs) on the proposed long-term renewal of Central Valley Project (CVP) water service contracts.

We believe the draft EAs are inadequate and violate NEPA. We believe the long-term renewal contracts for each CVP division require an Environmental Impact Statement (EIS) that fully analyzes a broader range of alternatives. We also wish to incorporate by reference the comments dated December 7, 2000 filed by the National Resources Defense Council on the draft EAs.

Thank you for considering our comments.

Sincerely yours,

Arthur Feinstein
Executive Director

From: Tom Stokely stokely@trinitywater.net
 To: reclam@hamp.water.gov
 Date: 12/08/00 2:57PM
 Subject: Comments on Draft EA for CVP Contract Renewals

Dear Mr. Candlish,

Please accept this on behalf of the County of Trinity. A hard copy letter should have already arrived or will arrive shortly. I will also fax you the letter below.

Sincerely,

Tom Stokely,
 Senior Planner
 Trinity County Planning Dept.
 PO Box 158
 Hayfork, CA 96041
 530-823-9649

TRINITY COUNTY BOARD OF SUPERVISORS
 P O BOX 1258
 WEAVERVILLE, CA 96093-1248

December 8, 2000

Bureau of Reclamation
 San-Pacific Division
 Attn: Mr. Candlish
 2800 Cottage Way
 Sacramento, CA 95825-1800

Re: Draft Environmental Assessments (EAs) for Renewal of Existing Long-term Water Service Contracts for Central Valley Project (CVP)

Dear Mr. Candlish:

The Board of Supervisors recommends that the Draft Environmental Assessments for renewal of CVP long-term water service contracts not be approved. The impacts of the proposed federal action are significant and cannot be approved under a Finding of No Significant Impact. A comprehensive CVP-wide EIS for water contract renewals should be prepared.

The cumulative impacts of renewing 26 long-term water service contracts is a significant cumulative impact which requires preparation of an EIS.

As demonstrated in Table E1-1 from the Trinity River Mainstem Fishery Restoration EIS/EIR (USFWS, Trinity County, Hoopa Valley Tribe and BOR, November, 2000), there are significant impacts from blanket renewal of long-term CVP water service contracts. This can be seen in the

difference between the "Existing Conditions (1996) base year and the No Action Alternative in the year 2020. In particular, renewals of contracts from the American River Division will increase CVP demand by 200,000 acre-feet per year by the year 2020. This significant impact will mobilize flows with reduced carryover storage in Shasta and Trinity reservoirs, with resultant impacts to recreation, as well as listed species in the Trinity River such as coho and steelhead, and impacts to the Sacramento River listed species such as winter and spring chinook. This is evidenced by increases in violation of Trinity and Sacramento river temperature compliance, and Shasta Lake carryover storage requirements per the 1983 NWRB Biological Opinion.

As a result of the October 20, 2000 EISA consultation by NWRB on the Trinity River Mainstem Fishery Restoration EIS, Trinity Lake carryover storage should not go below 400,000 acre-feet. A comprehensive EIS on CVP contract renewals should evaluate impacts to this Trinity Lake carryover storage requirement for protection of the Trinity River's fishery.

We are extremely disappointed that without adequate public review and input, BLMor reversed its contract negotiation position very recently and changed contract terms so that the "contract total" for water quantities would be unchanged from existing contracts even though historic deliveries have been less. Renewal of these contracts which includes this "paper water" will continue to result in contracts for water delivery that exceed available CVP supplies. As a county of origin for the CVP, we believe the depletion and mismanagement of Trinity County will be significantly harmed by this overcommitment of water.

We are also extremely disappointed that BLMor reversed its position, again without adequate public review and input, of the broad pricing provisions of the Central Valley Project Improvement Act (CVPIA) so that these provisions would apply only to the "contract total," not the "base" water supply. Such a position will not encourage water conservation, nor will it assure long-term repayment of the CVP by water contractors.

The EA's do not adequately analyze the above impacts in a singular or cumulative sense with other ongoing actions CVP-wide. A Finding of No Significant Impact would not be justifiable in this case. In addition, the EA's do not analyze adequately the cumulative effect of applying these policies to renewing CVP water service delivery contracts which have not yet expired—in other words, all CVP water service contracts.

The contracts should be renegotiated to reflect the legal requirements of CVPIA, then a CVP-wide contract renewal EIS should be prepared to deal with the above issues cumulatively. A Finding of No Significant Impact is not justifiable.

Sincerely,
 out

December 8, 2000

provisions of the Central Valley Project Improvement Act (CVPIA) so that these provisions would apply only to the "contract total," not the "base" water supply. Such a position will not encourage water conservation, nor will it assure long-term repayment of the CVP by water contractors.

The EA's do not adequately analyze the above impacts in a singular or cumulative sense with other ongoing actions CVP-wide. A finding of no significant impact would not be justifiable in this case. In addition, the EA's do not analyze adequately the cumulative effect of applying these policies to renewing CVP water service delivery contracts which have not yet expired - in other words, all CVP water service contracts.

The contracts should be renegotiated to reflect the legal requirements of CVPIA, when a CVP-wide contract renewal EIS should be prepared to deal with the above issues cumulatively. A finding of No Significant Impact is not justifiable.

Sincerely,

TRINITY COUNTY BOARD OF SUPERVISORS

Ralph Molina, Chairman

TRINITY COUNTY BOARD OF SUPERVISORS



DATE	TIME	LOCATION
DEC 02 2000		VAL RICHIE

December 3, 2000

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 Trustee, Kay's Inn & Grill
 Donald Weidner, PE
 Di Biasey Whitman, Trustee
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Bureau of Reclamation
 Midwest Pacific Division
 Attn: Al Cassidich
 1880 Cottage Way
 Sacramento, CA 95825-1184

Ladies and Gentlemen:

This letter is to offer our comments on the draft Environmental Assessments (EAs) for the renewal of existing long-term contracts for Central Valley Project (CVP) water service.

First, let me say that the proposed contracts are a great disappointment given the contract parameters set forth by the Interior Department at its initial public session in Sacramento. These proposals honor those guidelines in the breach.

EAs for contracts that run for a 25-year period, with the promise of additional contract extensions thereafter, are inadequate as environmental documents. A comprehensive Environmental Impact Statement (EIS) should be completed to comply with the law.

Interior reversed its position, at the eleventh hour and without adequate public review and input, and changed contract terms so that the "contract total" for water quantities would be unchanged from existing contracts. Bidding contracts that include this "paper water" has resulted in contracts for water delivery well beyond available CVP supplies.

Interior also reversed its position at the eleventh hour, again without adequate public review and input, of the fixed pricing provisions of the Central Valley Project Improvement Act (CVPIA) so that those provisions would apply only to the "contract total," not the "base" water supply.

The EAs do not adequately analyze the effects of either of the two draft policies in the paragraphs above. In addition, the EAs do not analyze adequately the cumulative effect of applying these policies to remaining CVP water service delivery contracts nor are the subject of renewal - in other words, all CVP water service contracts.

P.O. Box 2227 • 4425 Niles, CA • 95621-2227 • Phone: 415/945-9563 • Fax: 415/945-5562
 www.ftr.org • info@ftr.org • arbutus@ftr.org

Bureau of Reclamation
 December 5, 2000
 Page two

In addition, the failure to analyze a full range of alternatives, especially alternatives with reduced water quantities, renders all of the EA's inadequate.

The effect of the contracts upon endangered species is a critical environmental impact that must be analyzed. Moreover, the public has received inadequate information about those impacts. This omission includes impacts upon the endangered Trinity River Cutthroat salmon, as well as its threatened Steelhead. The public also has not received adequate information about the amount to which the Bureau of Reclamation (Bureau) is in compliance with previous Endangered Species Act (ESA) requirements applicable to existing contracts.

The contracts should be renegotiated with reduced water quantities that better reflect both reality and competing water needs, and at higher prices that implement CVPIA, fixed pricing requirements properly, and in the spirit of that law, as well as CALFED's "beneficiary pays" requirements.

Very truly,

 Byron W. Loyd
 Chair

BWL:rw

cc: The Hon. James Thompson
 The Hon. Barbara Boxer
 The Hon. George Miller
 The Hon. Mike Thompson
 The Hon. Elton Tombech
 Ms. Mary Hillbold
 Ms. Felicia Marcus
 Mr. Mike Spear

DISTRIBUTION LIST

Revised DEA/Draft FONSI - December 2004

Office of Planning and Research-State Clearinghouse (SCH)
1400 Tenth Street
P.O. Box 3044
Sacramento, CA 95812-3044
(Refer to letter dated January 13, 2005 and list of 14 agencies provided the opportunity to review)

Contra Costa Water District
Attention: Mr. Jeff Quimby
1331 Concord Avenue
P.O. Box H20
Concord, CA 94524

U.S. EPA
Environment Review Office
Attention: Laura Fujii
Compliance and Ecosystem Division
75 Hawthorn Street
San Francisco, CA 94105-3901

U. S. Department of Interior
Office of Environmental Policy & Compliance
1111 Jackson Street, Suite 520
Oakland, CA 94607

Natural Resources Defense Council
111 Sutter Street, FL 20
San Francisco, CA 94104

Golden Gate Audubon Society
2530 San Pablo Avenue, Suite G
Berkeley, CA 94702

Trinity County Planning Department
P.O. Box 156
Hayfork, CA 96041

Friends of Trinity River
P.O. Box 2327
Mill Valley, CA 94942-2327

U.S. Bureau of Reclamation
Water Rights and Contracts Branch
ATTN: Dick Stevenson, MP-400
2800 Cottage Way
Sacramento, CA 95825

U.S. Bureau of Reclamation
Tracy Field Office
ATTN: Eileen Jones
16650 Kelso Road
Byron, CA 94514-1909



Arnold
Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Jan Boel
Acting Director

January 15, 2005

Joe Thompson
U.S. Bureau of Reclamation
1243 N Street
Fresno, CA 93721-1813

Subject: Contra Costa Canal 11th Long-Term Contract Renewal
SCH#: 200014006

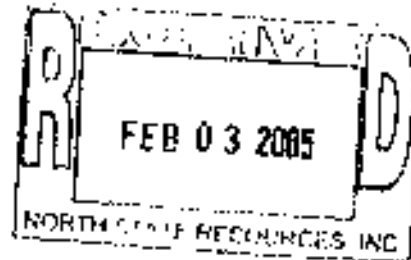
Dear Joe Thompson:

The State Clearinghouse submitted the above named Joint Document to selected state agencies for review. The review period closed on January 12, 2005, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the relevant State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts
Director, State Clearinghouse



Document Details Report
State Clearinghouse Data Base

SCM# 2009114006
Project Title Contra Costa Canal Unit Long-Term Contract Renewal
Lead Agency U.S. Bureau of Reclamation

Type JD - Joint Document

Description Project is the proposed renewal/replacement of long-term water service contract for the Contra Costa Canal system, operated by the Contra Costa Water District (CCWD). The U.S. Bureau of Reclamation and CCWD proposed to execute the new long-term water service contract in a manner consistent with the provisions of CVPIA.

Lead Agency Contact

Name Joe Thompson
Agency U.S. Bureau of Reclamation
Phone 559-487-5179 **Fax**
email
Address 1243 N Street
City Fresno **State** CA **Zip** 93721-1813

Project Location

County Contra Costa
City
Region
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways Central Valley Water Project-Contra Costa Canal
Schools
Land Use Contra Valley Water Project

Project Issues Population/Housing Balance, Water Supply, Wildfire, Land Use

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 3; Department of Parks and Recreation; Reclamation Board; Department of Water Resources; Caltrans, District 4; Department of Health Services; Native American Heritage Commission; State Lands Commission; Regional Water Quality Control Board, Region 2; Regional Water Quality Control Bd., Region 5 (Sacramento); State Water Resources Control Board, Clean Water Program; State Water Resources Control Board, Division of Water Quality; State Water Resources Control Board, Division of Water Rights

Date Received 12/14/2004 **Start of Review** 12/14/2004 **End of Review** 01/12/2005