

## **EXECUTIVE SUMMARY**

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### BACKGROUND

The State Water Project (SWP) is a large water storage and conveyance project that supplies water to about 24 million Californians including farmers that use it to irrigate 750,000 acres of cropland. The California Department of Water Resources (Department) manages the SWP and supplies water to 29 agricultural and municipal water supply agencies in accordance with long-term water supply contracts. The water supply agencies are referred to collectively as the SWP contractors and their service areas extend from Plumas County in the north to San Diego County in the south.

The amount of water available for delivery to the SWP contractors varies from year to year depending on hydrologic conditions, including annual rainfall, snowpack, and storage in SWP reservoirs. The long-term water supply contracts specify how the Department will allocate water to the contractors in times of shortage and surplus. Each contractor's long-term water supply contract includes a Table A amount which serves as a basis for allocating the available annual water supply among the contractors. During several dry years in the late 1980s and early 1990s, the Department and the contractors disagreed over water allocation procedures and other provisions of the long-term water supply contracts. In 1994, the Department and some of the contractors, meeting in Monterey, executed the Monterey Agreement, an agreement to modify the long-term water supply contracts. The modifications were incorporated into the long-term water supply contracts in what became known as the Monterey Amendment, which was signed by 27 of 29 contractors.

An Environmental Impact Report (EIR) on the Monterey Amendment was prepared by the Central Coast Water Authority, a joint powers agency representing several contractors. After the EIR was certified in 1995, the Planning and Conservation League challenged the adequacy of the EIR. Later, the Citizen's Planning Association of Santa Barbara and Plumas County Flood Control and Water Conservation District joined the action as plaintiffs. In 2000, the court ruled that the EIR was inadequate because it failed to analyze invocation of Article 18(b) of the then-existing SWP contracts as a no-project alternative, and that the Department must serve as the lead agency for a new EIR on the Monterey Amendment. Following the court's ruling, the Department, the contractors and the plaintiffs executed the Settlement Agreement in 2003. The Settlement Agreement specifies a process for the plaintiffs and the contractors to advise the Department in preparation of the new EIR, sets forth some specific items to be included in the content of the new EIR and establishes a process for mediation of CEQA issues raised by either the plaintiffs or contractors. The Settlement Agreement also requires the Department to carry out various actions and modify some of its administrative practices.

### POTENTIAL AREAS OF CONTROVERSY AND CONCERN

The Department issued a Notice of Preparation (NOP) for this new EIR in January 2003. Responses to the NOP and comments received during the scoping sessions held across the state identified potential areas of controversy and concern to a range of local, state, and federal interests. They included the following:

- The EIR must analyze reductions of future deliveries to agricultural contractors, the associated loss of agricultural land and the change in agricultural economics as a result of the Monterey Agreements.
- Definition of the baseline for the proposed project must be based on pre-Monterey Agreement conditions.
- The EIR must analyze the SWP's water reliability and address the potential shortfalls in water delivery instead of relying on "paper water".
- Potential effects of the proposed project on operation of the U.S. Bureau of Reclamation's Central Valley Project (CVP), deliveries to CVP contractors and existing water rights holders must be analyzed.
- The EIR must include reasonable and feasible alternatives, including the No Project Alternative, to reduce deliveries, conserve water, and find other reliable sources of water for deliveries to southern California.
- Storage outside of the contractors' service area could result in potential for growth in areas previously unserved or limited by water supplies and must be analyzed in the EIR.
- The transfer of the Kern Fan Element should be analyzed for potential economic and environmental effects.
- The EIR should contain a review of the existing contracts for the public to see how the Monterey Agreement changed the contract provisions.
- Exposure of cultural resources due to construction of groundwater percolation basins and changes in operations of dams and reservoirs must be analyzed in the EIR.
- The EIR must evaluate reliance on the Environmental Water Account (EWA) for future use and potential limitations to mitigate for effects on the Delta.
- The EIR is required to analyze potential effects on Delta flows, water quality, and biological resources from operations of the water diversion pumps in the southern portion of the Delta.
- Impacts from the proposed project and other water supply projects must be analyzed for cumulative effects on the environment, including growth inducing effects.

The foregoing areas of controversy and concern are addressed in this EIR as necessary for compliance with the California Environmental Quality Act.

## **PROPOSED PROJECT**

The proposed project is the Monterey Amendment and the Settlement Agreement. The primary elements of the Monterey Amendment are:

- altered water allocation procedures. Shortages and surpluses would be shared among contractors in proportion to their Table A amounts. During shortages, agricultural contractors would no longer be subject to cuts in supply before municipal contractors;
- permanent transfers of Table A amount. Agricultural contractors would transfer 130,000 acre-feet (AF) of Table A amount to municipal contractors and 45,000 AF of Table A amount would be permanently retired;
- transfer of ownership of approximately 20,000 acres of land known as the Kern Fan Element from the Department to Kern County Water Agency;

- facilitation of several water supply management practices including storage of SWP water outside contractors' service areas, borrowing of water by contractors from Castaic Lake and Lake Perris, and establishment of a turnback pool to promote transfers of SWP water from contractors with excess allocated Table A amounts to contractors with a need for water; and
- restructuring of rates for financing the SWP and using its facilities, including the establishment of a trust fund to help agricultural contractors meet their SWP financial obligations during water shortages.

The primary elements of the Settlement Agreement are:

- better information on SWP reliability by substituting "Table A amount" for "entitlement" in the SWP contracts and by implementing new procedures for disclosure of SWP delivery reliability;
- more public review of major SWP actions by issuing guidelines for review of permanent transfers of Table A amounts, and issuing principles for public participation in negotiations for project-wide long-term water supply contract amendments and Table A transfers.
- Table A transfers completed prior to the Settlement Agreement would remain in place;
- assurance regarding the Kern Fan Element transfer including confirmation of title to Kern Fan Element lands; placement of restrictions on the use of Kern Fan Element lands ; and an independent study of some Kern Water Bank operations;
- establishment of a watershed forum and funding for Plumas County Flood Control and Water Conservation District (Plumas County) to pursue watershed restoration, and; amendment of Plumas County's SWP contract with respect to allocation to SWP water; and
- providing specified amounts of funding to the plaintiffs for multiple purposes.

### **Proposed Project-Induced Changes In SWP Operations**

Many of the actions implemented through the Monterey Amendment involve changes in the way the SWP was operated. Analysis of historical data and the CALSIM II model were used to characterize Monterey Amendment-induced changes in SWP operations by comparing SWP operations with and without the Monterey Amendment. Comparisons are made to a baseline scenario in which the Department would have continued to operate the SWP in accordance with the pre-Monterey Amendment long-term water supply contracts. Most of the environmental impacts of the proposed project are a result of proposed project-induced changes in SWP operations.

With the Monterey Amendment in place, average annual total deliveries under 2020 conditions to agricultural contractors collectively would decrease by about 5 percent and deliveries to municipal contractors collectively would increase by about 2 percent as a result of the transfers and retirements of Table A amounts and altered water allocation procedures. However, agricultural contractors would increase their share of deliveries in critically dry years. Overall deliveries to contractors would increase by 1 to 2 percent as a result of the water supply management practices.

## ENVIRONMENTAL IMPACTS

The impact of the proposed project on the following environmental elements was analyzed; surface water hydrology, water quality and water supply; groundwater; fisheries resources; terrestrial biological resources; visual resources; agricultural resources; air quality; geology, soils and mineral resources; recreation; land use and planning; hazards and hazardous materials; noise; cultural and paleontological resources; public services and utilities; traffic and transportation; and energy. The results of the analysis are summarized in Table ES-1. The results of the analysis for the period 1996 to 2003 and for the future are listed separately. The level of significance of the environmental impacts of the proposed project before and after the application of mitigation measures are shown in the table.

### Impacts - 1996-2003

#### Less-than-Significant Impacts

The proposed project had less-than-significant impacts on surface water hydrology, water quality and water supply; groundwater; terrestrial biological resources; fisheries resources; visual resources; agricultural resources; air quality; geology, soils and mineral resources; recreation; land use and planning; hazards and hazardous materials; noise; cultural resources; public services and utilities; traffic and transportation; and energy.

#### Significant Impacts

The proposed project had no significant and unavoidable or significant mitigable impacts between 1996 and 2003.

### Future Impacts

#### Less-Than-Significant Impacts

The proposed project would have less than significant impacts on surface water hydrology, water quality and water supply, groundwater; agricultural resources; land use and planning; hazards and hazardous materials; noise; public services and utilities; traffic and transportation; and energy.

The increased reliability of agricultural contractors' SWP water supply as a result of the Monterey Amendment would enable more farmers to switch from growing annual crops to permanent crops. Based on current trends, it is expected that more farmers in the SWP service area would choose to replace annual crops with permanent crops. This might reduce the water contractor's management flexibility during droughts but this impact is considered to be less-than-significant.

The periods when the proposed project allows the Banks pumps to operate at full capacity for added periods could affect CVP water supplies by reducing the periods when the CVP could share use of the Banks pumps under Joint Point of Diversion. This impact would occur only in certain circumstances when the CVP has not yet filled San Luis Reservoir in the winter or spring, and would decide to pay the added cost of sharing use of the Banks pumps. It is estimated that this impact could occur in about 8 percent of years, and the impact in some years could be up to 100,000 AF of reduced opportunity to the CVP. Because there is a small

proportion of total CVP pumping from the Delta it is considered to be a less-than-significant impact.

The water supply management practices would encourage the development of groundwater banks in Kern Fan Element. Construction of percolation ponds and other facilities as part of the groundwater banks could have significant adverse impacts on terrestrial biological and cultural resources. However, since 1997, the Kern Water Bank Authority has managed the Kern Fan Element lands in accordance with a Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) approved by the US Fish and Wildlife Service and the California Department of Fish and Game that includes mitigation measures designed to protect biological resources. Also, the Environmental Assessment for the HCP/NCCP identified archeological sites at the Kern Fan Element and the Kern Water Bank Authority adopted mitigation measures designed to protect cultural resources. It is expected that the mitigation measures adopted by the Kern Water Bank Authority would protect terrestrial biological and cultural resources in the future and thus the impact to these resources would be less-than-significant.

#### Potentially Significant Unavoidable Impacts

The proposed project would have potentially significant and unavoidable impacts on: terrestrial biological resources; visual resources; air quality; geology, soils and mineral resources; recreation; and cultural resources.

The water supply management practices would encourage the development of groundwater banks in Kern County other than in the Kern Fan Element. Construction of percolation ponds and other facilities as part of the groundwater banks could have significant adverse impacts on terrestrial biological and cultural resources. When new groundwater banks are proposed in Kern County, other than in the Kern Fan Element, they will undergo project-level CEQA review. It is likely that the impacts on terrestrial and cultural resources can be reduced to a less-than-significant level by mitigation measures; however, this cannot be determined with certainty until the project-level CEQA review is completed.

Article 54 of the Monterey Amendment would enable certain contractors to borrow water from Castaic Lake and Lake Perris provided it is replaced within five years. If contractors borrowed the maximum amount of water permitted under the Monterey Amendment and did not replace it for an extended period of time (longer than one year, thus longer than any drawdown period when compared to baseline levels), this could cause significant adverse impacts. No mitigation measures are practical or appropriate. Impacts on Castaic Lake and Lake Perris are not the same due to differing biotic and abiotic characteristics of each water body. Castaic Lake could experience significant and unavoidable impacts on terrestrial biological resources, visual resources, geology and soils, and recreation. Lake Perris could experience significant and unavoidable impacts on terrestrial biological organisms, visual resources, air quality, and recreation.

#### Potentially Significant Mitigable Impacts

The proposed project would have significant and mitigable impacts on fisheries resources. Based on the fisheries analysis, increased future pumping due to the proposed project under 2020 conditions could change Delta flow patterns; disrupt movement of species of fish, and increase entrainment losses of adult delta smelt and salmonid smolts. The fishes most susceptible to November-March hydrodynamic changes and export increases are outmigrating

salmonids and delta smelt moving upstream to spawn. Increased entrainment of a special status species that resulted from the proposed project under 2020 conditions would be considered an adverse effect and would reduce a species' abundance. Delay of upstream or downstream migration could be considered an interference with the movement of resident and migratory species. As compared to baseline conditions, the potential exists for the proposed project to have an adverse impact on Delta fish species by increasing salvage at the Skinner Facility as a result of higher pumping at Banks Pumping Plant during certain periods when San Luis Reservoir is full. This impact is potentially significant.

The Department estimates the water supply management practices that are a part of the proposed project would result in an annual increase of around 50,000 AF in diversion of water from the Delta by the SWP. Of this pumping, an estimated 38,000 AF would be diverted during times when fish species could be at risk. The additional pumping due to the water supply management practices would only occur when the contractors had all the SWP water they could use or store, all SWP reservoirs south of the Delta were full, and all EWA debt was repaid.

Operations of the Department are currently subject to a court remedy which is designed to prevent harm to the delta smelt. Ongoing reconsultation on the Operations Criteria and Plan (OCAP) with United States Fish and Wildlife Service is expected to yield a new Biological Opinion for delta smelt that would, upon court approval, replace the court's remedy for operation of the project. That new Biological Opinion would then provide the mitigation required to address the impacts of this proposed project. As part of the resources to provide that fish protection, both in the remedy phase and for the longer term under a new Biological Opinion, the Department has already committed the operational assets that are currently a part of the Environmental Water Account (EWA). These assets may be deployed through a continuation of the EWA, through an equivalent type of program, or through another program that would replace the EWA and provide the fish protection required by the court and the Biological Opinions on delta smelt and Chinook salmon.

Additionally, the following list identifies other environmental programs already in place or forthcoming that are relevant to the SWP (thus the proposed project) and Delta fisheries for the 2003-2020 timeframe:

1. The Anadromous Fisheries Biological Opinion of 2004;
2. The Delta Pumping Plant Fish Protection Agreement ("Four Pumps Agreement", 1986);
3. The Delta Smelt Biological Opinion of 2005;
4. The Delta Smelt Action Plan of 2005;
5. The Bay-Delta Conservation Plan;
6. The Pelagic Fish Action Plan of 2007;
7. The Adaptive Management Process; and
8. The Interagency Ecological Program;
9. The Delta Risk Management Study;
10. The Delta Vision Program; and
11. The NOAA Fisheries Biological Opinion of 2004.

## **Growth Inducement**

As a result of the proposed project, eight M&I contractors would receive an increase in average annual deliveries of SWP water of 90,900 AF and seven M&I contractors would receive an increase in average annual deliveries of 91,400 AF of combined Table A and Article 21 deliveries under 2020 conditions. The additional water supply that would be made available by the Monterey Amendment through average annual Table A deliveries to eight M&I contractors could support a maximum increase in population of approximately 392,808 to 561,684 (depending on the future scenarios) in their service areas. Average annual Table A and Article 21 deliveries to seven M&I contractors could support a maximum population of 405,104 to 561,685. The estimates are high for a variety of reasons including the fact that some M&I contractors may choose to use the water to increase reliability or for groundwater recharge and other purposes. To accommodate the additional people, currently undeveloped land in the service areas of some M&I contractors would be converted to urban uses or existing urban lands would be redeveloped at higher densities. Population growth would have secondary or indirect environmental effects that include but might not be limited to the following, loss of special status species and their habitat, increased emission of air and water pollutants with consequent adverse effects on air and water quality, increased traffic and noise, and increased demand for utilities and public services.

Neither the Department nor the contractors make local decisions regarding growth or where it will occur. Cities and counties in the contractors' service areas affected by the increased population are responsible for considering the environmental effects of their growth and land use decisions. Therefore, mitigation measures of these impacts are subject to local agencies decision making.

## **Water Supply Reliability and Growth**

There is an argument that because the sum of the Table A amounts (previously "entitlements") in the long-term water supply contracts is greater than the amount of water that the SWP can reliably deliver on an annual basis, land use planners and decision-makers have had an exaggerated impression of the SWP's delivery capability and the amount of urban growth that can be supported by SWP water. The difference between the sum of the Table A amounts and the actual delivery capacity of the SWP is sometimes referred to as "paper water".

Furthermore, it is hypothesized that, as a result of paper water, land use planners and decision-makers may have approved urban development that would not have been approved if they understood the available information on SWP's actual delivery capacity. A provision of the long-term water supply contracts (Article 18(b)) called for reducing the sum of the Table A amounts in line with the SWP's actual available dependable annual supply of water in the event of a permanent water shortage. The Monterey Amendment removed Article 18(b) from the long-term water supply contracts.

The "paper water" question is really a question of whether local planners recognize the limitations on the reliability of SWP supplies. In the early years of the SWP, the total Table A amount was important because this number was also intended to be the minimum project yield or the firm yield of the SWP. In recent years, the concept of firm yield has been replaced with water delivery curves which show the likelihood of water deliveries by the SWP in any year given the range of historical hydrologic events. Table A amounts now serve primarily as a way of allocating shortages and surplus among the contractors and as a way of allocating costs of

the SWP. Reducing the Table A amount through invocation of Article 18(b) is not relevant given current day operations and planning based on water delivery reliability curves.

The surveys and literature reviews undertaken as part of this EIR show no evidence that a “paper water” problem was created by the contractual SWP Table A amounts and that it affected urban growth decisions. However, even if a “paper water” problem did arise from land use planners relying on the Table A amounts, the passage of SB 610 and 221 and the State Water Project Reliability Report have led to better information dissemination to local planners regarding the reliability of SWP supplies. Thus, the elimination of Article 18(b) by the proposed project would not have an effect on urban growth and would not create a continued “paper water” problem because land use planners either do not consider SWP water supplies when approving growth at the General Plan level, or have more detailed SWP delivery information available to them to consider at the development approval level.

## **ALTERNATIVES TO THE PROPOSED PROJECT**

CEQA requires that an EIR must describe and evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project’s basic objectives, but that would avoid or substantially lessen any significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a proposed project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. In addition to any other alternatives considered, an EIR must include an evaluation of “no project” to allow decision-makers to compare the results of approving or disapproving the proposed project.

If the Monterey Amendment had not been implemented in 1995, management of the SWP might have proceeded in any number of ways. It is, of course, impossible to know which path SWP management would have been followed and so several possibilities rather than a single path were examined. The several versions of “no project” examined in this EIR, together with a single “action” alternative (Alternative 5), encompass a range of alternatives within which all reasonable possibilities lie. Evaluation of these different scenarios can help decision-makers understand the environmental consequences of different courses of action.

### **No Project Alternative 1**

Under No Project Alternative 1, none of the provisions of the Monterey Amendment or of the Settlement Agreement would have been implemented and the Department would have used the Kern Fan Element to increase SWP reliability. None of the significant impacts of the proposed project would have occurred but neither would any of the proposed project’s objectives have been met.

### **No Project Alternative 2**

Under No Project Alternative 2, it was assumed that all of the Table A transfers and retirements that occurred between 1996 and 2003 with the proposed project would have occurred under No Project Alternative 2. Furthermore, water would have been allocated in accordance with the post-Monterey Amendment allocation method and the alternative would include the water supply management practices that were carried out between 1996 and 2003. After 2003, no further transfers or retirements of Table A amounts would occur and water would be allocated in accordance with the pre-Monterey Amendment long-term water supply contracts. The water supply management practices would be discontinued but outside-service-area storage would

continue using facilities that were in place in 2003. No new outside-service-area storage would occur.

Between 1996 and 2003 No Project Alternative 2 would have had the same environmental effects as the proposed project. In the future, No Project Alternative 2 would have environmental impacts similar to but less than those of the proposed project.

No Project Alternative 2 would have resulted in some of the same significant impacts as the proposed project. It would also have met some of the proposed project's objectives.

#### **Court-Ordered No Project Alternatives 3 and 4**

Under Court-Ordered No Project Alternatives 3 and 4, the Department would have continued to administer the SWP in accordance with the pre-Monterey Amendment long-term water supply contracts. None of the elements of the proposed project would be implemented. A permanent water shortage would have been declared and Article 18(b) of the long-term water supply contracts would have been invoked. Court-Ordered No Project Alternatives 3 and 4 would be the same except for differences in how the Department would allocate water to the contractors. None of the environmental impacts associated with the proposed project would have occurred under Court-Ordered No Project Alternatives 3 and 4. Court-Ordered No Project Alternatives 3 and 4 might have met some of the proposed project's objectives with regard to disputes over allocations between agricultural and M&I contractors.

#### **Alternative 5**

Under Alternative 5, the Monterey Amendment and the Settlement Agreement would be implemented with the exception of the water supply management practices. Alternative 5 would avoid any potential significant adverse effects of the proposed project ground water banks in the Central Valley, on Delta outflow and on environmental resources at Lake Perris and Castaic Lake. Although Alternative 5 would meet some of the proposed project's objectives, it would not meet other objectives and it would leave a significant number of M&I users with less water and no additional benefits. Even though there is doubt about whether this alternative is feasible, this analysis still provides useful information since this alternative would avoid most of the environmental impacts of the Monterey Amendment.

**TABLE ES-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
<b>7.1 Surface Water Hydrology, Water Quality and Water Supply</b>					
7.1-1 The proposed project would have no impact on flows in the San Joaquin and American rivers. Delta outflows from 1996-2003 were reduced by an estimated 0.03 percent. Changes in water flows in the Feather and Sacramento rivers were less than 0.15 percent under 2003 and 2020 conditions. Future Delta outflow impacts are estimated to be less than 0.35 percent.	NA	NA	NA	NA	NA
7.1-2 The proposed project would have a less than significant impact on ambient water quality in the Feather, Sacramento, American, and San Joaquin rivers because there is little to no change in water flows relative to the baseline under 2003 and 2020 conditions.	LS	LS	7.1-2 None required.	NA	NA
7.1-3 The proposed project would have a less than significant impact on water quality in the Delta and the San Francisco Bay Estuary under 2003 and 2020 conditions. The position of X2 would not be significantly impacted by the Monterey Amendment.	LS	LS	7.1-3 None required.	NA	NA
7.1-4 The proposed project would have a less than significant effect on water levels or water quality in Lake Oroville under 2003 and 2020 conditions, The proposed project would delay filling of San Luis Reservoir under certain circumstances under both 2003 and 2020 conditions but would have little effect on water quality. From 1996 to 2003 water levels in Lake Perris and Castaic Lake were higher than in the period 1974-1995 and changes in water quality were minimal. In the future, Lake Perris and Castaic Lake could be drawn down for longer than in the past. However, the water level changes at Castaic Lake and Lake Perris would not alter water quality sufficiently to impair beneficial uses.	LS	LS	7.1-4 None required.	NA	NA

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	1996 – 2003	Future		1996 – 2003	Future
7.1-5 The proposed project would have a less than significant impact on the quality of the water supplies for SWP contractors and the water agencies they serve under 2003 and 2020 conditions.	LS	LS	7.1-5 None required.	NA	NA
7.1-6 The proposed project would have a less than significant effect on the availability and quality of water supplies for the Feather River water rights contractors. Proposed project-induced flow changes in the Feather River would be too small (0.15%) to effect water availability or quality.	LS	LS	7.1-6 None required.	NA	NA
7.1-7 The proposed project would have a less than significant impact on the availability and quality of water to the CVP and its contractors. Proposed project induced changes in river flow and Delta outflow would be too small to affect the availability or quality of waster at CVP diversion points. Between 1996 and 2003, the proposed project had no effect on the CVP's use of Banks Pumping Plant under JPOD. In the future, the proposed project could reduce the CVP's Delta diversions at the Banks Pumping Plant by 5,000 AF per year.	LS	LS	7.1-7 (Future) None required.	NA	NA
7.1-8 The Settlement Agreement provide funds to Plumas County to improve environmental conditions in the Feather River watershed. Each project may have some temporary impacts to water quality due to construction; however, the long-term results will be beneficial to water quality.	NA	LS	7.1-8 None required.	NA	NA

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	1996 – 2003	Future		1996 – 2003	Future
<p><b>7.1-9</b> Because the fish action and proposed project-induced increased pumping occurred at different times in the month, it was concluded that the proposed project would have no impact on the EWA from 2000 to 2004.</p> <p>The Department estimated that in the future, the proposed project would enable an increase in pumping at the Banks Pumping Plant of 50,000 AF per year and that, using the 1996 through 2004 hydrology, increased pumping would occur in 11 months in the nine year period (108 months). The Department estimated that the proposed project could affect the EWA in three of the nine years. The affect could increase the EWA debt by an average of 27,000 AF in the years that an increase in pumping could occur. The EWA has averaged about 250,000 AF of pumping curtailments at the Banks and Jones Pumping Plants from 2001 through 2006. Thus, the proposed project could increase EWA debt by about 10-percent in years when curtailments occurred. If the EWA program continues in the future, the proposed project could increase its cost. However, because this is an economic and not a physical environmental impact no significance conclusions were drawn.</p>	NI	NI	7.9-1 None required.	NI	NI
<b>7.2 Groundwater Hydrology and Quality</b>					
<p><b>7.2-1</b> During the late 1990s and early 2000s, the proposed project facilitated groundwater banking in Kern County and raised the levels of groundwater by several feet relative to the baseline scenario. This trend is expected to continue for the future, having a beneficial impact on groundwater levels in the Kern County Groundwater Subbasin.</p>	BE	BE	7.2-1 None required.	NA	NA

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<b>7.3 Fisheries Resources</b>					
7.3-1 The proposed project resulted in a 0.0066 percent annual decrease in Feather River flows from 1996-2003. The maximum future annual decrease in Feather River flow would be less than 0.028 percent. These flow changes would have a less than significant impact on special-status fish species in the Feather River.	LS	LS	7.3-1 None required.	NA	NA
7.3-2 The proposed project would result in minor increases in flows due to releases from Folsom Reservoir to meet downstream water quality requirements. For the 1996-2003 period and the future, this would have a less than significant impact on special-status fish species in the American River.	NI	NI	7.3-2 None required.	NA	NA
7.3-3 The proposed project would have a 0.016 percent annual decrease in Sacramento River flows from 1996-2003. The maximum future annual decrease in Sacramento River flow would be 0.0542 percent. These flow changes would have a less than significant impact on special-status fish species in the Sacramento River.	LS	LS	7.3-3 None required.	NA	NA
7.3-4 None of the elements of the Monterey Amendment involves operation of facilities on the San Joaquin River. Thus, the proposed project would have no impact on special-status fish species in the San Joaquin River due to water flow changes.	NI	NI	7.3-4 None required.	NA	NA

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<p><b>7.3-5 Implementation of the water supply management practices could result in increased pumping in November through March which could change Delta flow patterns in 1995 – 2003 and in the future. The changed flow patterns could disrupt the movement of fish species and increase entrainment of adult delta smelt and salmonid smolts. The magnitude of this impact depends on the delta outflow and relative reduction generated by increased pumping. Misdirection or delay of upstream movement could have been a problem when Delta flow was low. Compliance with existing environmental programs relevant to the SWP would minimize impacts attributed to the proposed project in the future; however, the potential exists for the proposed project to have an adverse impact on Delta fish species by increasing salvage at the Skinner facility as a result of higher pumping at Banks during certain periods.</b></p>	LS	PS	<p><b>7.3-5</b> The Department shall implement operational assets that could be deployed through a continuation of the EWA, through an equivalent type of program, or through another program that would replace the EWA and provide the fish protection required by the court and the Biological Opinions on delta smelt and Chinook salmon that would limit any adverse impact resulting from the proposed project on special status Delta fish species as a result of higher pumping at Banks during periods when San Luis Reservoir, absent of the proposed project, would be full.</p> <p>The Department will continue to operate the SWP and its facilities in accordance with all statutory requirements. To ensure compliance to all environmental guidelines, the Department follows a set of mitigation and environmental programs (some already in place and some forthcoming). Any additional pumping due to the proposed project under 2020 conditions in the Delta will be addressed by requirements that govern the operation of the Delta facilities of the SWP. In the immediate short-term time frame, the operational remedies imposed by the United States District Court, Eastern District of California, in Fresno will govern SWP operations to provide protection for the listed fish, that are subject to litigation.</p> <p>Conclusion of current consultation on the OCAP with USFWS and NOAA Fisheries is expected to provide a new Biological Opinion for delta smelt, salmon, and green sturgeon that would replace the court's order regarding for operation of the project. The new Biological Opinions would then continue to provide the mitigation required to address the impacts of this proposed project.</p>	NA	LS

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7.3-6 Implementation of the proposed project could result in changes in Delta outflow which could adversely affect special-status fish species. Review of X2 salinity position under both 1996-2003 and future conditions shows that the location would move further into San Francisco Bay under periods of high outflow and upstream into the Delta during periods of low outflow; however, the change when compared to baseline scenario would be plus or minus 100 meters. The change is considered immeasurable in the filed, and therefore, is not considered a substantial alteration of habitat used by special-status fish species.	LS	LS	7.3-6 None required.	NA	NA
7.3-7 The proposed project would have a less than significant impact on the recreational fisheries at Lake Perris and Castaic Lake because any decrease in fish populations would be supplemented by the annual stocking program, and there is no evidence to indicate that fish populations would drop below self-sustaining levels.	LS	LS	7.3-7 None required.	NA	NA
7.3-8 Any impact to Lake Oroville due to the proposed project would be less than 1 percent of storage. The impact on fisheries resources at Lake Oroville would be less than significant.	LS	LS	7.3-8 None required.	NA	NA
7.3-9 The San Luis Reservoir for the 1996-2003 and future has and will likely continue to experience lowered water levels due to the proposed project; however, these changes would be minimal. These changes would not adversely affect any special-status fish species because none exist in the reservoir, nor would it significantly reduce populations of fish that have economic or social value or affect any habitat or other sensitive natural community.	LS	LS	7.3-9 None required	NA	NA

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
<b>7.4 Terrestrial Biological Resources</b>					
7.4-1 The proposed project could impact special-status terrestrial biological resources in the southern San Joaquin Valley portion of Kern and King’s Counties as a result of changes in agricultural practices. However, the trend of replacing irrigated annual crops with permanent crops is expected to continue in the future with or without the proposed project. While it is possible that additional land could be converted to permanent crops as a result of the proposed project, no clear trend can be attributed to the proposed project that can be discerned from the historical analysis period. To the extent that some land was converted to permanent crops as a result of the proposed project, this would not have affected special-status species habitat.	LS	LS	7.4-1 None required.	NA	NA
7.4-2 The proposed project could impact special-status terrestrial biological resources in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element) resulting from construction of new groundwater storage facilities. In the future, the water supply management practices could encourage the development of additional groundwater banks in Kern County. Construction of percolation ponds and other facilities could result in potentially significant adverse impacts on terrestrial biological resources.	LS	PS	7.4-2 (Future) a) Special-status species surveys shall be conducted prior to the site selection for future recharge basins, to determine if any special-status plants or wildlife would be impacted. To the extent possible, the basins shall be sited such that any special-status species and their habitats are avoided.  b) If special status species cannot be avoided, then mitigation for impacts shall be required consistent with current requirements from the CDFG and USFWS. If the future projects are located within the Kern Water Bank Master Permit Credit Area, then mitigation credits may be purchased at the Kern Water Bank Conservation Bank.	NA	PSU

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	1996 – 2003	Future		1996 – 2003	Future
			<p>c) The water districts shall prepare CEQA documents to assess any environmental impacts from the construction and use of future recharge basins.</p> <p>This mitigation would prevent any adverse impact to special-status terrestrial biological resources through avoidance of special-status species and their habitat. If avoidance is not possible, then consultation with the resource agencies will be required to determine appropriate mitigation. At this time, without knowing the future site locations, it is unrealistic to provide specific mitigation for the special-status species that may be affected.</p>		
<p><b>7.4-3 The proposed project could impact special-status terrestrial biological resources at the Kern Fan Element due to changes in land use and management. In the future, the Proposed project could encourage land use changes at the Kern Fan Element. Any construction activities or land use changes could potentially have significant adverse impacts on terrestrial biological resources.</b></p>	LS	PS	<p>7.4-3 (Future) The proposed project would result in impacts to terrestrial biological resources on the Kern Fan Element property that would be reduced to less than significant through the following mitigation measures currently implemented by the KWBA. These measures were outlined in the Initial Study and Addendum to Monterey Amendment EIR of the KWBA, Kern Water Bank HCP/NCCP:</p> <p>a) <b>Biological Monitor</b></p> <p>A qualified biologist shall monitor all ground disturbing activities during construction in the Sensitive Habitat Sector and will oversee measures undertaken to reduce the take of listed species.</p>	NA	LS

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	1996 – 2003	Future		1996 – 2003	Future
			b) <b>Construction practices</b>  i. Delineation of Disturbance Areas – During construction, KWBA shall clearly delineate disturbance area boundaries by stakes, flagging, or by reference to terrain features, as directed by CDFG and USFWS to minimize degradation or loss of adjacent wildlife habitats during operation.  ii. Signage – During construction, KWBA shall post signs and/or place fencing around construction sites to restrict access of vehicles and equipment unrelated to site operations.  iii. Resource Agency Notification – At least 20 working days prior to initiating ground disturbance for project facilities in designated salvage/relocation areas, KWBA shall notify the Fresno Field Office of CDFG and the Sacramento Field Office of USFWS of its intention to begin construction activities at a specific location and on a specific date. The agencies will have ten working days to notify the KWBA of their intention to salvage or relocate listed species in the construction area. If KWBA is notified, it shall wait an additional five days to allow the salvage/relocation to take place.  iv. Salvage and Relocation – KWBA shall allow time and access to USFWS and/or CDFG, or their designees, to relocated listed species, at the Resource Agencies' expense, from construction areas prior to disturbance of areas that have been identified by the Resource Agencies as having known populations of the listed species they wish to salvage or relocate.		

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			v. Construction Site Review – All construction pipes, culverts, or similar structures with a diameter of three inches or greater that are stored at a construction site on the Kern Water Bank for one or more overnight periods shall be thoroughly inspected for trapped kit foxes and other animals before the subject pipe is subsequently buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight shall be capped. If during construction a kit fox or other animal is discovered inside a pipe, that section of pipe shall not be moved or, if necessary, shall be moved only once to remove it from the path of construction activity until the animal has escaped.		

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	1996 – 2003	Future		1996 – 2003	Future
			vi. Employee Orientation – An employee orientation program for construction crews, and others who will work on-site during construction, shall be conducted and shall consist of a brief consultation in which persons knowledgeable in endangered species biology and legislative protection explain endangered species concerns. The education program shall include a discussion of the biology of the listed species, the habitat needs of these species, their status under FESA and CESA, and measures being taken for the protection of these species and their habitats as a part of the project. The orientation program shall be conducted on an as needed basis prior to any new employees commencing work on the Kern Water Bank. Every two years or at the beginning of construction for the Supply/Recovery canal, a refresher course will be conducted for employees previously trained. A fact sheet conveying this information shall also be prepared for distribution to all employees. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be filed at KWBA's office and shall be accessible by CDFG and USFWS.  vii. Standards for Construction of Canals - Concrete lined canals will have a side slope of 1.5 to 1 or less and the sides will have a concrete finish which will assist in the escape of animals. If canals are determined by CDFG or USFWS to be substantial impediments to kit fox movement, plank or pipe crossings will be provided across concrete canals in areas identified as having high kit fox activity.		

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			c) <b>On-Going Practices</b>  i. Equipment Storage - All equipment storage and parking during site development and operation shall be confined to the construction site or to previously disturbed off site areas that are not habitat for listed species.  ii. Traffic Control - KWBA's project representative shall establish and issue traffic restraints and signs to minimize temporary disturbances. All construction related vehicle traffic shall be restricted to established roads, construction areas, storage areas, and staging and parking areas. Project related vehicles shall observe a 25 MPH speed limit in all project areas except on county roads and state and federal highways.  iii. Food Control - All food-related trash items such as wrappers, cans, bottles, and food scraps generated both during construction and during subsequent facility operation shall be disposed of in closed containers and shall be regularly removed from the site. Food items may attract kit foxes onto a project site, consequently exposing such animals to increased risk of injury or mortality.  iv. Dog Control - To prevent harassment or mortality of kit foxes or destruction of kit fox dens or predation on this species; no domestic dogs or cats, other than hunting dogs, shall be permitted on-site.		

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			v. Pesticide Use - Use of rodenticides and herbicides on the site shall be permitted in accordance with the Vegetation Management Plan, which incorporates by reference the Interim Measures for Use of Rodenticides in Kern County, and which will incorporate by reference any other applicable laws, rules and regulations regarding the use of pesticides as they take effect.  d) <b>Project Representatives</b>  KWBA shall designate a specific individual as a contact representative between KWBA, USFWS, and CDFG to oversee compliance with protection measures-detailed herein. KWBA shall provide written notification of the contact representative to CDFG and USFWS within 30 days of issuance of the Permits and the Management Authorizations. Written notification shall also be provided by KWBA to CDFG and USFWS in the event that the designee is changed.		

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	1996 – 2003	Future		1996 – 2003	Future
			<p>e) <b>Notification Regarding Dead, Injured or Entrapped Listed Animals</b></p> <p>Any employee or agent of KWBA who kills or injures a San Joaquin kit fox, blunt nosed leopard lizard, Tipton kangaroo rat, San Joaquin antelope squirrel, or other listed species listed as a threatened or endangered animal under FESA or CESA, or who finds any such animal either dead, injured, or entrapped on the Kern Water Bank shall report the incident immediately to KWBA's representative who shall, in turn, report the incident or finding to USFWS and CDFG. In the event that such observations are of entrapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape unimpeded. In the event that such, observations are of injured or dead animals, KWBA shall immediately notify USFWS and CDFG by telephone or other expedient means. KWBA shall then provide formal notification to USFWS and CDFG, in writing, within three working days of the finding of any such animal(s). Written notification shall include the date, time, location, and circumstances of the incident.</p> <p>The USFWS contact for this information shall be the Assistant Field Supervisor for Endangered Species, Sacramento Field Office. The CDFG contact shall be the Environmental Services Supervisor at the San Joaquin Valley-Southern Sierra Region Headquarters.</p> <p>USFWS or CDFG will be notified if any other animal, which is otherwise a listed species, is found dead or injured.</p>		

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	1996 – 2003	Future		1996 – 2003	Future
			<p>f) <b>Construction of Supply/Recovery Canal</b></p> <p>Within 60 days prior to the construction of the supply/recovery canal within the zone marked within the Map of the Kern Water Bank, KWBA shall conduct a limited survey within the area of the Kern Water Bank, which will be affected by that construction, with the sole goal of identifying potential San Joaquin kit fox dens. KWBA shall contact USFWS and CDFG pursuant to the salvage procedures set forth above if any kit fox dens are found.</p> <p>g) <b>Take Avoidance Protocol for Fully Protected Species</b></p> <p>Existing data on the blunt nosed leopard lizard at the Kern Water Bank indicates that populations occur within habitat set asides (either sensitive, compatible, or conservation bank habitat), thus the likelihood of take from project construction, operation, and maintenance is negligible. However, in the future adaptive management measures may expand to areas of suitable habitat.</p> <p>Until such time that the KWBA obtains appropriate authorization for take of the state-designated fully protected blunt-nosed leopard lizard by the Fish and Game Commission, the following take avoidance protocol shall apply in any areas that contain suitable habitat of the blunt-nosed leopard lizard:</p>		

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	1996 – 2003	Future		1996 – 2003	Future
			<p>i. A qualified biologist shall survey any areas proposed for project related disturbance that contain suitable habitat for the blunt-nosed leopard lizard to determine the likelihood of presence. Suitable habitat consists of valley and foothill grasslands, saltbush scrubland, iodine bush grassland, and alkali flats.</p> <p>ii. If blunt nosed leopard lizards are found to occur in areas proposed for project facilities construction or maintenance, consideration of avoidance should take place first. If avoidance is not practicable, then the blunt nosed leopard lizard will be trapped and relocated prior to disturbance at KWBA's expense in accordance with the applicable annual management plan. This work must be done by or under the direction of USFWS staff by persons with appropriate experience and with their own take for scientific purposes permits. This procedure will avoid any violation of state law.</p> <p>Three other species, which may be found on the Kern Water Bank, are also state designated fully protected species: American peregrine falcon, Greater sandhill crane, and White-tailed kite. The likelihood of the take of any of these species from project construction, operation, and maintenance is negligible due to their mobility and preferred habitats. However, to avoid any take of these species, the same take avoidance protocol as set out for the blunt nosed leopard lizard shall apply to each of these three species.</p>		

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	1996 – 2003	Future		1996 – 2003	Future
			The use of a biological monitor, and special construction activities and on-going practices will result in a heightened awareness and education regarding sensitive biological resources, which will reduce the potential for impacts on special-status species. In addition, the use of a project representative as a liaison between the KWBA and the resource agencies will expedite notification regarding any take of a listed animal. While take of a fully protected species is not anticipated, this mitigation outlines avoidance protocol to further reduce the likelihood of said take. Together these mitigation measures and the beneficial net increase of habitat for special-status species through implementation of the HCP/NCCP will reduce any potential impact to a less-than-significant level.		
<b>7.4-4 Implementation of the proposed project could potentially affect special-status terrestrial biological resources at Castaic Lake. In the event of a future prolonged drawdown in water levels at Castaic Lake, the reduction in water levels could adversely affect terrestrial biological resources that use the lake to forage. However, this slight change in lake surface elevation would not adversely affect the quality of riparian habitat upstream or downstream from Castaic Lake or the productivity of the lake, which would not adversely affect foraging opportunity.</b>	LS	LS	7.4-4 None required.	NA	NA

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	1996 – 2003	Future		1996 – 2003	Future
<p><b>7.4-5</b> The proposed project could impact special-status terrestrial biological resources at Lake Perris. In the event of a future prolonged drawdown in water levels at Lake Perris, although the worst case condition could occur, it would be unlikely because it is in the interests of the Department and the contractors that receive water from Lake Perris that it be kept full most of the time. A reduction in lake levels could reduce overall fish populations, which in turn could adversely affect terrestrial biological resources that use the lake to forage. As part of the Department’s ongoing seismic repairs at Lake Perris, the Santa Ana Watershed Association (SAWA) is currently conducting quarterly bird surveys to document how that drawdown affects birds in the area. The results of these surveys may provide insight into the effects on the reduction of food resources as a result of future drawdowns. Regardless, a reduction in food resources could result in reduced nesting success for raptors, bats, and waterfowl.</p>	LS	PS	<p>7.4-5 (Future) None feasible.</p>	NA	PSU
<p><b>7.4-6</b> The proposed project could impact riparian habitat and the special-status terrestrial biological resources it supports at Lake Perris. In the event of a future prolonged drawdown in water levels at Lake Perris, the riparian vegetation on the east end of the reservoir could potentially be adversely impacted and die-offs of the vegetation may occur. If die-offs occur, the special-status species that are dependent on this vegetation would be adversely impacted.</p>	LS	PS	<p>7.4-6 (Future) (a) Baseline Studies - A surface and groundwater hydrology study shall be conducted to determine what water source is maintaining the riparian habitat. In addition, a qualified biologist shall conduct a complete habitat assessment of the riparian habitat documenting the size of the habitat, and all wildlife and plant species that use this habitat, including any special-status species. Protocol-level surveys for species known or expected to occur in the riparian habitat (e.g. least Bell’s vireo) shall be conducted. A certified arborist shall evaluate the health of the trees and prepare an arborist report.</p>	NA	PSU

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	1996 – 2003	Future		1996 – 2003	Future
			<p>Based on concerns for the riparian habitat associated with Lake Perris, the Department has installed an irrigation system to assist the vegetation during the recent drawdown for the seismic retrofit of the dam at lake Perris.</p> <p>(b) Annual Monitoring - Once a baseline is established, annual monitoring will be required to determine changes in hydrologic activities, changes in the health of the riparian habitat, and changes in the use of said habitat by special-status and other wildlife species.</p> <p>Should a prolonged drawdown (longer than one year) occur, an irrigation system shall be installed to water the riparian habitat (assuming it is successful in maintaining riparian vegetation during the seismic repairs). In addition, monthly monitoring shall occur to document any changes in the riparian habitat and allow for a timely adjustment of the watering schedule.</p> <p>Implementation of the above mitigation measures may reduce the impact on the riparian habitat and the associated special-status species to a less-than-significant level, if the changes in water do not impact the riparian habitat, or if any loss of water is supplemented through the sub-surface or surface irrigation. However, because of the complexity of the system, it is unknown at this time what the real impacts on the riparian habitat will be and therefore, the residual impact cannot be assessed.</p>		

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	1996 – 2003	Future		1996 – 2003	Future
7.4-7 The average increase in surface elevation and the occasional lowered water levels of San Luis Reservoir due to the proposed project would not adversely affect the riparian habitat, foraging quality for special-status birds, or limit San Joaquin kit fox migration. Therefore, the proposed project would not affect special-status terrestrial biological resources at the San Luis Reservoir.	LS	LS	7.4-7 None required.	NA	NA
7.4-8 The proposed project would minimally alter the water flow of the Feather, American, Sacramento and San Joaquin rivers and the change would not likely affect any terrestrial resources along the rivers.	LS	LS	7.4-8 None required.	NA	NA
7.4-9 The proposed project would not substantially change Delta outflow and would, therefore, not likely affect special-status terrestrial biological resources within the Sacramento/San Joaquin Delta.	LS	LS	7.4-9 None required.	NA	NA
7.4-10 The Settlement Agreement would allow Plumas County to improve conditions of its streams with watershed improvement projects. Therefore, the proposed project would have a beneficial effect on special-status terrestrial biological resources in Plumas County.	NI	BE	7.4-10 None required.	NI	NA

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	1996 – 2003	Future		1996 – 2003	Future
<b>7.5 Visual Resources</b>					
7.5-1 The proposed project would have little or no impact on the acreage of irrigated land in the southern San Joaquin Valley. Assuming that any land is taken out of irrigated production as a result of the proposed project, it would remain in agricultural use as dry farmed or fallow land. In addition, the trend of replacing irrigated annual crops with permanent crops is expected to continue in the future with or without the proposed project. While it is possible that additional land could be converted to permanent crops as a result of the proposed project, no clear trend can be attributable to the proposed project that can be discerned for the historical analysis period. Therefore any change in agricultural practices would not be expected to result in a dramatic change in visual character. Furthermore, any changes would be seen by a limited number of viewers and probably noticed by even fewer.	LS	LS	7.5-1 None required.	NA	NA
7.5-2 The Monterey Amendment facilitated the construction and operation of new groundwater storage facilities in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element). Around 520 acres of vacant land or cropland were replaced with percolation ponds. It is assumed that in the future, more percolation ponds would be developed. However, these ponds would not alter the appearance of the area in a way that would be perceived as adverse.	LS	LS	7.5-2 None required.	NA	NA

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	1996 – 2003	Future		1996 – 2003	Future
7.5-3 The Monterey Amendment facilitated the construction and operation of new groundwater storage facilities in the Kern Fan Element. As a consequence of the proposed project, around 1,200 acres of land will be converted to percolation ponds. Although these changes would alter the appearance of lands within the Kern Fan Element, the alteration in appearance would be minimally visible.	LS	LS	7.5-3 None required.	NA	NA
7.5-4 The effects of borrowing of water on water surface elevations in the two reservoirs in the future would depend on the extent to which the three eligible contractors make use of Article 54 and future hydrologic conditions. Significant drawdowns at both Castaic Lake and Lake Perris could expose a wide band of barren soil and silt that is below normal operating lake levels. It is possible that future borrowing could drawdown the reservoirs more often than would occur without the project which could increase the exposed area around the perimeter of the two reservoirs, diminishing the natural lake appearance. Mitigation measures, such as hydroseeding or landscaping, to reduce all visual impacts at Castaic Lake and Lake Perris are economically and physically infeasible because of the scale of the area to be covered at either reservoir.	LS	PS	7.5-4 (Future) None available.	NA	PSU
7.5-5 At Lake Oroville and San Luis Reservoir, the changes in the amount of water stored were small and would not be expected to affect the visual character at San Luis Reservoir and Lake Oroville.	LS	LS	7.5-5 None required.	NI	NA

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	1996 – 2003	Future		1996 – 2003	Future
7.5-6 The Settlement Agreement allows Plumas County to improve conditions of its streams with watershed improvement projects. Therefore, the proposed project would have a beneficial effect on visual resources in Plumas County.	NI	BE	7.5-6 None required.	NA	NA
<b>7.6 Agricultural Resources</b>					
7.6-1 The proposed project would have little or no impact on the acreage of irrigated land in the southern San Joaquin Valley in the future. If any land was to be taken out of irrigated production it would remain in agricultural use as dry farmed or fallow land and would not be converted to urban uses. No Prime, Unique or Farmland of Statewide Importance would be converted to non-agricultural uses nor would a conflict be created with respect to existing agricultural zoning or Williamson Act contracts as a result of the proposed project.	LS	LS	7.6-1 None required.	NA	NA

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<b>7.7 Air Quality</b>					
7.7-1 The proposed project would have little or no impact on the acreage of irrigated land in the southern San Joaquin Valley in the future. Assuming that any land is taken out of irrigated production as a result of the proposed project, it would remain in agricultural use as dry farmed or fallow land. In addition, the trend of replacing irrigated annual crops with permanent crops is expected to continue in the future with or without the proposed project. While it is possible that additional land could be converted to permanent crops as a result of the proposed project, no clear trend can be attributable to the proposed project that can be discerned for the historical analysis period. Therefore any change in agricultural practices would not be expected to result in a dramatic change in soil disturbance. Because associated PM <sub>10</sub> emissions would not be expected to increase as a result of the proposed project, adopted thresholds would not be exceeded.	LS	LS	7.7-1 None required.	NA	NA
7.7-2 The Monterey Amendment facilitated the expansion of groundwater storage facilities outside contractor service areas. Any construction-related emissions would have been temporary and would continue to be temporary into the future. Additionally, the pumps that work at the groundwater banks are electric and are relatively pollution-free. The proposed project would not be expected to generate less than significant emissions including PM <sub>10</sub> , NO <sub>x</sub> , and diesel TAC emissions in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element).	LS	LS	7.7-2 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
7.7-3 The proposed project from 1996-2003 did not result in a net increase in criteria air pollutants from construction of KWBA percolation ponds and canals or operation of the pumping facilities resulting from the transfer of Kern Fan Element. While construction activities in the future could temporarily be a source of air emissions, this would not result in a net increase in criteria air pollutants in a non-attainment area that could conflict with implementation of the adopted air quality plan for the region.	LS	LS	7.7-3 None required.	NA	NA
7.7-4 The proposed project water supply management practices (for the period of 1996-2003) that allow greater flexibility in reservoir storage at Castaic Lake, Lake Perris, San Luis Reservoir, and Lake Oroville would not have altered the amount of recreational boating at the reservoirs, which could impact ROG emission levels. In the future, depending on the use of the flexible storage program of the proposed project at Castaic Lake and Lake Perris, the amount of boating emissions at the reservoirs would either decrease or be similar so emissions would not be expected to exceed thresholds.	LS	LS	7.7-4 None required.	NA	NA
7.7-5 The proposed project water supply management practices allow greater flexibility in reservoir storage at Castaic Lake, Lake Perris, San Luis Reservoir, and Lake Oroville and this could alter the amount of recreational uses at the reservoirs, which could impact vehicle emissions associated with travel to and from the reservoirs. At Lake Oroville and San Luis Reservoir, these changes from 1996-2003 were minimal and are likely to stay that way into the future. At Castaic Lake and Lake Perris, water levels from 1996-2003 were similar to pre-Monterey levels. Therefore, there would be little or no increase in air emissions.	LS	LS	7.7-5 None required.	NA	NA

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
<p><b>7.7-6</b> The effects of borrowing of water on water surface elevations in the two reservoirs in the future would depend on the extent to which the three eligible contractors make use of Article 54 and future hydrologic conditions. Significant drawdowns at both Castaic Lake and Lake Perris could expose a wide band of barren soil and silt that is below normal operating lake levels. It is possible that future borrowing could drawdown the reservoirs more often than would occur without the project which could increase the exposed area around the perimeter of the two reservoirs, increasing the potential for wind-borne PM<sub>10</sub> emissions. Mitigation measures, such as hydroseeding or landscaping, to reduce all visual impacts at Castaic Lake and Lake Perris are economically and physically infeasible because of the scale of the area to be covered at either reservoir.</p>	LS	PS	7.7-6 (Future) None available.	NA	PSU
<p><b>7.7-7</b> The proposed project did not and, in the future, would not alter the water surface elevation significantly as compared to baseline levels at San Luis Reservoir and Lake Oroville. As a result, the flexible storage and extended carryover practices, would not alter the amount of shoreline exposed to wind erosion.</p>	LS	LS	7.7-7 None required.	NA	NA

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	1996 – 2003	Future		1996 – 2003	Future
7.7-8 The proposed project could impact air quality in Plumas County due to construction and operation of watershed improvements. The proposed project did not impact air quality in Plumas County due to construction and operation of watershed improvements because the Settlement Agreement was not executed in the 1996-2003 time period. In the future, air emissions due to construction would be temporary. Additionally, the projects would be expected to improve soil erosion conditions, such that the potential for wind-generated PM <sub>10</sub> emissions from exposed soils would ultimately be reduced over the long-term.	NI	LS	7.7-8 None required.	NA	NA
<b>7.8 Geology, Soils, and Minerals Resources</b>					
7.8-1 The proposed project would have little or no impact on the acreage of irrigated land in the southern San Joaquin Valley in the future. Assuming that any land is taken out of irrigated production as a result of the proposed project, it would remain in agricultural use as dry farmed or fallow land. In addition, the trend of replacing irrigated annual crops with permanent crops is expected to continue in the future with or without the proposed project. While it is possible that additional land could be converted to permanent crops as a result of the proposed project, no clear trend can be attributable to the proposed project that can be discerned for the historical analysis period. Therefore any change in agricultural practices would not be expected to result in a dramatic change in soil disturbance and associated wind-generated erosion.	LS	LS	7.8-1 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
	<p>Although changes in agricultural practices could potentially alter the rate of soil erosion within the KCWA's boundaries, the changes would not be considered significant. Furthermore, soils in Kern County can generally be characterized as being slightly erodible.</p>				
<p><b>7.8-2</b> The proposed project would have had (from 1996-2003) and is expected in the future to have a less than significant impact on rates of erosion in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element) as a result of construction of new groundwater storage facilities. Construction of the ponds and associated levees occurred on topography that is relatively flat and required only minor grading and compaction of soils. Although replacement of 520 acres of vacant land or cropland with percolation ponds changed rates of erosion, this impact is considered less than significant. In the future, approximately 500 acres of ponds would be constructed. Conversion of approximately 500 acres of land to percolation ponds would not substantially change rates of erosion.</p>	LS	LS	7.8-2 None required.	NA	NA
<p><b>7.8-3</b> The proposed project would have had (from 1996-2003) and is expected in the future to have a less than significant impact on rates of erosion in the Kern Fan Element due to changes in land use. Between 1996 and 2003, an additional 1,665 acres were converted to shallow percolation ponds. Construction of the ponds and associated levees would have had a less than significant impact. In the future, an additional conversion of approximately 1,200 acres of land to percolation ponds would not substantially change rates of erosion.</p>	LS	LS	7.8-3 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
7.8-4 The proposed project could impact rates of erosion at Castaic Lake and Lake Perris. The geology of Castaic Lake is characterized by steep slopes and clay soils. Lake Perris is characterized by sandy soils. Therefore, soils at Lake Perris could be subject to increased rates of wind and rain erosion associated with exposure from a potential extended drawdown attributed to Article 54. Mitigation measures such as hydroseeding or landscaping to prevent erosion are not economically or physically feasible to cover such a wide area to prevent runoff of soil into the lake.	LS	PS	7.8-4 (Future) None available.	NA	PSU
7.8-5 At Lake Oroville and San Luis Reservoir, the changes due to the Proposed project in the amount of water stored were small and would continue to not be significant when compared to baseline levels. Therefore, the proposed project would not leave more soil around the reservoirs exposed to erosion.	LS	LS	7.8-5 None required.	NA	NA
7.8-6 The proposed project did not impact the rates of soil erosion in Plumas County as a result of watershed improvement projects because the Settlement Agreement was not executed in the 1996-2003 time period. In the future, the proposed project would result in short-term construction impacts that would be regulated by State water quality regulations which minimize erosion and sedimentation from construction activities.	NI	LS	7.8-6 None required.	NI	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
<b>7.9 Recreation</b>					
7.9-1 From 1996-2003 the proposed project had a less than significant impact on recreational resources at Castaic Lake and Lake Perris because water levels were comparable to the baseline. However, potential future prolonged drawdown periods at Castaic Lake and Lake Perris would have a potentially significant and unavoidable impact on recreational resources due to decreased water levels. Impacts would include decreased boating availability, fishing opportunities, water skiing opportunities, swimming opportunities, availability of hunting, disabled access, etc.	LS	PS	7.9-1 (Future) a) The Department shall notify the public at the onset of the loss of recreational resources due to Article 54 drawdowns at Perris Lake and Castaic Reservoir. Notification shall be made until the withdrawal is repaid through local media outlets including, but not limited to, newspapers and radio, local parks and recreation departments, and on the CDPR's website. If the maximum amount in Article 54 is withdrawn from either reservoir, then the Department shall use television advertisements to inform the public of the severity and duration of the Article 54 drawdown.  b) To the extent feasible, the Department shall install, extend, or upgrade existing facilities (including lifeguard towers and emergency assistance equipment) to allow safe access to lower lake levels during multi-year drawdowns.  c) The Department shall monitor water quality during drawdown periods and when swimming is allowed using the current full-body contact criteria and laboratory methods adopted by the California Department of Health Services or the U.S. Environmental Protection Agency, as applicable.  d) The Department shall prepare and provide funding for a management plan to control invasive plant species that could expand into recreational areas during extended drawdown periods.	NA	PSU

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	1996 – 2003	Future		1996 – 2003	Future
7.9-2 The proposed project would have had (from 1996-2003) and is expected in the future to have a less than significant impact on recreational resources at San Luis Reservoir and Lake Oroville. At Lake Oroville and San Luis Reservoir, the changes due to the proposed project in water levels were small and would continue to have a minimal affect on recreational opportunities at San Luis Reservoir and Lake Oroville in the future.	LS	LS	7.9-2 None required.	NA	NA
<b>7.10 Land Use and Planning</b>					
7.10-1 The proposed project would have had (from 1996-2003) and is expected in the future to not alter overall land use in the southern San Joaquin Valley portion of Kern County. Implementation of the proposed project has altered the physical use of the land; however, overall land use and designations have not changed. Also, development of uses in the Kern Fan Element was consistent with the HCP. In the future, construction of percolation ponds and associated levees could alter land use patterns. However, the land use designations would not change and the percolation ponds would be compatible with the surrounding uses.	LS	LS	7.10-1 None required.	NA	NA
<b>7.11 Hazards and Hazardous Materials</b>					
7.11-1 The proposed project related construction activities would have had (from 1996-2003) and are expected in the future to have less than significant impacts on the amount of exposure to unidentified hazards or hazardous material. Construction contracts have in the past included, and into the future would include specific language requiring contractors to comply with applicable State hazardous materials laws and regulations. Also, the potential for inadvertent spills of materials has been and would continue to be managed through construction site Best Management Practices.	LS	LS	7.11-1 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
	<b>7.12 Noise</b>				
7.12-1 It is possible that some land was converted to permanent crops as a result of the proposed project, and that these changes in agricultural practices could have altered the traffic volumes and use of agricultural machinery in affected areas. A doubling of traffic volumes or pieces of machinery operating at any one time would be needed to create a 3 dBA increase in roadway noise levels. The number of vehicular trips to fields with permanent crops would have likely been the same or slightly less than the number of trips to fields with annual crops and would have been unlikely to affect traffic volumes on affected rural roads. Likewise, the use of agricultural machinery would also have been the same or less.	LS	LS	7.12-1 None required.	NA	NA
7.12-2 The proposed project would have had (from 1996-2003) and is expected in the future to have a less than significant impact on noise levels in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element) as a result of construction and operation of new groundwater storage facilities. Any equipment associated with new groundwater storage facilities would not be expected to affect sensitive receptors.	LS	LS	7.12-2 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
7.12-3 From 1996 – 2003 and in the future, the installation and operation of pumps associated with the construction of percolation ponds in the Kern Fan Element attributable to the proposed project would result in an increase in noise emissions from pumps. However, increased noise levels would not affect sensitive receptors because the pumps are located in relatively remote areas far from homes and businesses. Ongoing maintenance of the new facilities is intermittent and not considered a substantial source of increased noise levels at sensitive land uses.	LS	LS	7.12-3 None required.	NA	NA
7.12-4 From 1996-2003, water levels at Castaic Lake, Lake Perris, Lake Oroville, and San Luis Reservoir were similar to pre-Monterey conditions therefore, recreational boating opportunities would have been similar. In the future, Lake Oroville and San Luis Reservoir boating numbers would remain unchanged by the proposed project. However, at Lake Perris and Castaic Lake, the potential reduction in water levels due to flexible storage could reduce recreational boaters and associated noise levels.	LS	LS	7.12-4 None required.	NA	NA
7.12-5 From 1996-2003 water levels at Castaic Lake, Lake Perris, Lake Oroville, and San Luis Reservoir were similar to those found in the baseline. Therefore, recreational opportunities and associated noise levels would have been similar pre-Monterey conditions. In the future, it is unlikely that the number of vehicles would be substantially different than baseline conditions. Therefore, the proposed project would not significantly increase noise levels at the reservoirs due to altered numbers of recreational visits.	LS	LS	7.12-5 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
7.12-6 Because the Settlement Agreement was not completed within the 1996-2003 time period, there was no impact on noise levels in Plumas County. In the future, the watershed projects could result in temporary increases in construction noise levels at the site of the improvements. The improvements would generally occur in locations where little or no development is present. No operational increase in noise levels would be anticipated. The potential noise impact from construction activities would be short-term.	NI	LS	7.12-6 None required.	NI	NA

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	1996 – 2003	Future		1996 – 2003	Future
<b>7.13 Cultural and Paleontological Resources</b>					
<p><b>7.13-1</b> Agricultural activity existed prior to implementation of the proposed project. The land had been disturbed for a variety of agricultural uses, therefore any resources present on the site would most likely have already been disturbed or destroyed. While the conversion from annual to permanent crops would likely reduce the amount of land disturbance associated with crop maintenance, the potential to disturb or destroy cultural and paleontological resources would remain unchanged or be reduced. The proposed project would have little or no impact on the acreage of irrigated land in the southern San Joaquin Valley in the future. If any land was to be taken out of irrigated production it would remain in agricultural use as dry farmed or fallow land. In addition, the trend of replacing annual crops with permanent crops is expected to continue. Ground disturbance associated with agricultural activity could expose artifacts resulting in damage and/or destruction of potentially significant cultural and paleontological resources. Prior to implementation of the proposed project the land was disturbed for a variety of agricultural uses depending on the availability of water, among other factors. Any resources present on the site would most likely have been disturbed or destroyed when agricultural practices began in the area.</p>	LS	LS	7.13-1 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
<p><b>7.13-2 The proposed project related development or expansion of groundwater banks could impact cultural and paleontological resources in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element). In the future, the water supply management practices would encourage the development of groundwater banks in Kern County other than in the Kern Fan Element. Construction of percolation ponds and facilities related to groundwater banks could have significant adverse impacts on cultural and paleontological resources.</b></p>	LS	PS	<p>7.13-2 (Future)</p> <p>a) <i>An analysis to identify the potential presence of archaeological resources on the project site shall be conducted. The analysis shall include, at a minimum, a records check and literature survey from the appropriate California Historic Resources Information System (CHRIS) center and a Phase I Cultural Resources Investigation by an archaeologist listed on the Register of Professional Archaeologists (RPA). If resources are known to exist on a project site, the analysis shall include an assessment of the resource and shall include measures for the in-situ protection, or the recovery, preservation, study, and curation of the resource, as appropriate. The analysis and the measures developed shall be consistent with the practices and intent described in Section 21083.2 et seq. of the Public Resources Code, as well as Sections 15064.5 et seq. and 15126.4(b) of the California Code of Regulations, and shall be consistent with current professional archaeological standards.</i></p> <p><i>The archaeologist shall prepare a report of the results of any study prepared, following accepted professional practice. Copies of the report shall be submitted to the Lead Agency and to the appropriate CHRIS information center.</i></p> <p><i>The Lead Agency shall also consult, as appropriate, with the Native American Heritage Commission and appropriate Native American tribal representatives to address Native American cultural values with respect to archaeological contexts.</i></p>	NA	PSU

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	1996 – 2003	Future		1996 – 2003	Future
			<p>Implementation of Mitigation Measure 7.13-2(a) would reduce potentially significant impacts on archaeological resources to a less-than-significant level by requiring identification of known or suspected archaeological resources and requiring the analysis, protection, or scientific recovery and evaluation of any archaeological resources that could be encountered, which would ensure that important scientific information that could be provided by these resources regarding history or prehistory is not lost.</p> <p>b) <i>An analysis to identify the potential presence of paleontological resources on the project site shall be conducted. If resources are known to exist on a project site, the analysis shall include an assessment of the resource and shall include measures for the in-situ protection or recovery, preservation, study, and curation of the resource, as appropriate. The analysis and measures developed shall be consistent with the practices and intent described in the Conformable Impact Mitigation Guidelines developed by the Society of Vertebrate Paleontology (News Bulletin No. 163, 1995) and shall be consistent with current professional paleontological standards.</i></p> <p>Implementation of Mitigation Measure 7.13-2(b) would reduce potentially significant impacts on paleontological resources to a less-than-significant level by requiring identification of known or suspected resources and requiring the analysis, protection, or scientific recovery and evaluation of any paleontological resources that could be encountered, which would ensure that important scientific information that could be provided by these resources regarding the past is not lost.</p>		

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	1996 – 2003	Future		1996 – 2003	Future
			<p>c) In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately, the area of the find shall be protected, and the Lead Agency immediately shall notify the County Coroner of the find and comply with the provisions of PRC Section 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary.</p> <p>Implementation of Mitigation Measure 7.13-2(c) would reduce this potentially significant impact to a less-than-significant level by ensuring appropriate examination, treatment, and protection of human remains, consistent with the applicable provisions of State law.</p>		
<p><b>7.13-3</b> From 1996-2003, mitigation measures were adopted to ensure that if previously unidentified archaeological resources were discovered during construction activities, that work would cease and a qualified archaeologist would examine the discovery and make recommendations for appropriate data recovery. Therefore, the proposed project related transfer of land in the Kern Fan Element to the Kern County WA is considered to have had a less than significant impact on cultural and paleontological resources. In the future, the water supply management practices would encourage the development of groundwater banks in the Kern Fan Element. Construction of percolation ponds and other facilities as part of the groundwater banks could result in damage and/or destruction of cultural and paleontological resources.</p>	LS	PS	<p>7.13-3 (Future)</p> <p>a) <i>Prior to any ground-disturbing work on the KWB, anthropologists or other qualified individuals shall engage in pedestrian surveys of the areas to be impacted, with the survey reconnaissance to be at 5- to 15-meter transects.</i></p> <p>b) <i>Any cultural resources found during the survey process will be recorded, mapped evaluated, and mitigated prior to the ground-disturbing activity, pursuant to Section 106 of the National Historic Preservation Act.</i></p> <p>c) <i>The eight recorded archeological sites on the KWB will be evaluated and mitigated pursuant to Section 106.</i></p> <p>d) <i>If any human remains are found at any time on the KWB, work will be halted in the area of the discovery, and the Kern County coroner will be notified.</i></p> <p>e) <i>Implement Mitigation Measures 7.13-2(a) through (c).</i></p>	NA	LS

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	1996 – 2003	Future		1996 – 2003	Future
<p><b>7.13-4</b> Water in Castaic Lake and Lake Perris were at historically comparable levels between 1996 and 2003. Therefore, between 1996 and 2003, the proposed project water supply management practices that provide greater flexibility in the location, frequency, and amount of water stored or borrowed at Castaic Lake and Lake Perris would not significantly increase the risk of potential for exposing any cultural and/or paleontological resources to damage and/or destruction . In the future, if a prolonged drawdown occurs due to the proposed project, there is potential for known and unknown cultural or paleontological resources to be exposed and risk damage or destruction.</p>	LS	PS	<p>7.13-4 (Future) Implement Mitigation Measures 7.13-2(a) through (c).</p>	NA	LS
<p><b>7.13-5</b> Although between 1995 and 2003 there were instances when reductions in water levels occurred in the San Luis Reservoir and Lake Oroville, cultural resources would not have been affected. Therefore, the proposed project water supply management practices that provide greater flexibility in the location, frequency, and amount of water stored or borrowed at Lake Oroville and San Luis Reservoir would not significantly increase the risk of exposing any cultural and/or paleontological resources around Lake Oroville and the San Luis Reservoir. In the future, various provisions of the proposed project could affect water levels in San Luis Reservoir (changes at Lake Oroville would be minimal). Most of the time the proposed project would raise water levels in San Luis Reservoir by 10 to 20 feet under 2003 conditions. Occasionally, the Article 56 provisions of the Monterey Amendment would result in a reduction in water surface elevation in San Luis Reservoir for a short time. Therefore, the potential for</p>	LS	LS	<p>7.13-5 None required.</p>	NA	NA

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exposing any cultural and/or paleontological resources around Lake Oroville and San Luis Reservoir to damage and/or destruction would be limited.					
<b>7.13-6</b> Because the Settlement Agreement was not completed within the 1996-2003 period, the proposed project had no significant impact to cultural and paleontological resources in Plumas County. Although the number and size of the future watershed improvement projects that would result from the proposed project are expected to be relatively small, implementation of proposed watershed improvement projects would nevertheless result in potential to damage or destroy cultural and paleontological resources.	NI	PS	7.13-6 (Future) Implement Mitigation Measures 7.13-2(a) through (c).	NI	PSU
<b>7.14 Public Services and Utilities</b>					
<b>7.14-1</b> None of the proposed project elements would have directly resulted in changes in population that would have generated a need for new or expanded governmental facilities or an increase in demand for public services and utilities. Therefore the proposed project would not have had and would not be expected to have an impact on public services and utilities.	NI	NI	7.14-1 None required.	NI	NI
<b>7.15 Traffic and Transportation</b>					
<b>7.15-1</b> The proposed project would have little or no impact on the acreage of irrigated land in the southern San Joaquin Valley in the future. Assuming that any land is taken out of irrigated production as a result of the proposed project, it would remain in agricultural use as dry farmed or fallow land. In addition, the trend of replacing irrigated annual crops with permanent crops is expected to continue in the future with or without the proposed project. While it is possible that additional land could be converted to permanent crops as a result of the proposed project, no clear trend can be	LS	LS	7.15-1 None required.	NA	NA

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<p>attributable to the proposed project that can be discerned for the historical analysis period.</p> <p>It is possible that additional land could be converted to permanent crops as a result of the proposed project, and that changes in agricultural practices could alter the traffic volumes in affected areas. The number of vehicular trips to fields with permanent crops would likely be the same or slightly less than the number of trips to fields with annual crops and would be unlikely to affect traffic volumes on affected rural roads.</p>					
<p><b>7.15-2</b> The proposed project has had in the past (1996-2003) and is likely to continue, into the future, to have a less than significant impact on traffic and transportation in the southern San Joaquin Valley portion of Kern County (excluding the Kern Fan Element). While construction and operation of new groundwater banks may have increased traffic temporarily, the vehicular movements associated with maintenance of new facilities are likely to be the same or less than those associated with the pre-1995 use of land for agriculture.</p>	LS	LS	7.15-2 None required.	NA	NA
<p><b>7.15-3</b> The proposed project has had in the past (1996-2003) and is likely to continue, into the future, to have a less than significant impact on traffic and transportation in the Kern Fan Element. Although construction and operation of percolation ponds would increase vehicular movements, the increase on these rural roads would be minimal.</p>	LS	LS	7.15-3 None required.	NA	NA

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Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
<p><b>7.15-4</b> Recreational activities would not have changed as a result of project implementation at San Luis Reservoir. Recreational activities could have been enhanced in Castaic Lake and Lake Perris as a result of increased water levels during the boating season. However, the range of water surface fluctuations would have been within the range of operating conditions prior to project implementation.</p> <p>Higher water surface elevations could have created more opportunities for recreational activities and this could have increased the number of vehicle trips to and from the reservoirs on a seasonal basis. However, in relation to existing traffic loads and roadway capacity, it is unlikely that level of service standards would have been exceeded on a permanent basis.</p> <p>In general, future operation of Castaic Lake and Lake Perris would result in similar fluctuations as those recorded for the period between 1996 and 2003 and are expected to be within the range of more recent (post-Monterey) historical fluctuations. Recreational visits, and associated increases in vehicle trips, would likely be the same as baseline conditions or if the worst-condition were to occur, could decrease due to drawdown conditions at Castaic Lake and Lake Perris in the future.</p>	LS	LS	7.15-4 None required.	NA	NA

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**TABLE ES-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation	
	1996 – 2003	Future		1996 – 2003	Future
7.15-5 The number and size of watershed improvement projects that would result from the proposed project are relatively small. The projects would be expected to improve conditions along a few miles of stream bank in a county with thousands of miles of stream channels. These activities could result in temporary increases in construction vehicles at the site of the improvements, which would cause a temporary increase in local traffic. No operational increase in traffic would be expected.	NI	LS	7.15-5 None required.	NI	NA
<b>7.16 Energy</b>					
7.16-1 In the future, some power plants would generate less energy (Gianelli, Alamo, Mojave, and Devil Canyon), some would produce the same amount of energy (Oroville and Thermalito), and some would produce more energy (Warne and Castaic). An overall increase of 86 GWh in energy loads at the pumping plants is also observed. Four pumping plants show a decrease in energy loads: Banks, Dos Amigos, Las Perillas, and Badger Hill.  SWP pumping facilities are designed to meet the anticipated demands of the SWP Contractors, and this rated capacity would not be exceeded by implementation of the proposed project. With a total long-term net load increase of 2.02 percent due to the proposed project, the amount of additional power required would be within the limits of the planned power supply, and no expansion or construction of new facilities to generate power would be required. No new long-term or short-term contracts would be necessary under the 2020 Post-Monterey conditions.	LS	LS	7.16-1 None required.	NA	NA

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<b>CUMULATIVE IMPACTS OF THE MONTEREY PLUS EIR</b>			
<b>Surface Water Hydrology, Water Quality, and Water Supply</b>			
The cumulative context for surface water hydrology, water quality and water supply includes the Feather and Sacramento Rivers and the Sacramento-San Joaquin Delta.			
10.1-1 Future projects and actions (including the proposed project) that substantially alter flow in the Sacramento and Feather rivers and Delta inflow and outflow could produce changes in water quality. Flow related changes on water quality together with storm water and treated wastewater discharges from new urban development in the Sacramento and Feather river watersheds and the Delta could have a potentially significant cumulative impact on water quality; however, the project's contribution would not be considerable (0.15 percent and 0.35 percent, respectively).	LS	10.1-1 None required.	NA
<b>Groundwater Hydrology and Water Quality</b>			
The cumulative context for ground water hydrology and water quality is the groundwater basins underlying the San Joaquin Valley. The proposed project would not have a cumulative impact on groundwater levels and quality in the San Joaquin Valley. The proposed project would raise water levels in some groundwater subbasins in Kern County. The proposed project would have a negligible effect on groundwater quality but would not contribute to cumulative effects on water quality. Groundwater basin storage projects would raise groundwater levels most of the time with a reduction in levels during extended droughts.			
<b>Fisheries Resources</b>			
The cumulative context for fisheries resources includes the Feather and Sacramento Rivers and the Sacramento-San Joaquin Delta. There was no project-specific impact identified to fisheries in the American and San Joaquin Rivers, and therefore, there would be no cumulative impact.			

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-2</b> The proposed project will increase pumping in the Sacramento-San Joaquin Delta and could have a significant cumulative impact on the decline of special-status fish species. The increase in cumulative pumping could change Delta flow patterns, disrupt movement of species of fish, and increase entrainment losses of adult smelt and salmonid smolts. Increased entrainment of a special-status species that results from cumulative projects could reduce species' abundance. Delay of up or downstream migration could interfere with the movement of resident and migratory species. This could result in a significant cumulative impact. The proposed project's contribution to potential increased entrainment losses of adult smelt and salmonid smolts would be considerable and this would result in a significant cumulative impact.</p>	PS	<p>10.1-2 Implement Mitigation Measure 7.3-5.</p> <p>Mitigation Measure 7.3-5 requires the Department to implement operational assets that could be deployed through a continuation of the EWA, through an equivalent type of program, or through another program that would replace the EWA and provide the fish protection required by the court and the Biological Opinions on delta smelt and Chinook salmon that would limit any adverse impact resulting from the proposed project on special status Delta fish species as a result of higher pumping at Banks during certain periods when San Luis Reservoir would otherwise be full.</p>	LS

**Terrestrial Biological Resources**

The cumulative context for terrestrial resources includes the southern San Joaquin Valley, Castaic Lake, Lake Perris, San Luis Reservoir, Feather River, Sacramento River, San Joaquin River, Sacramento-San Joaquin Delta and Plumas County. Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur at Castaic Lake.

Watershed improvement projects take many forms but most involve actions to prevent erosion and restore wildlife habitat along streams and rivers. In general, projects of this type improve the appearance of stream banks by returning them to a more natural condition. Therefore, the pond and plug and stream bank stabilization and channel form projects, in combination with the Plumas County Watershed Forum watershed improvement projects would result in a beneficial effect for special-status species and therefore, no cumulative impact would occur.

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-3</b> Water development projects which contribute to the availability and reliability of water supplies could contribute to the existing trend toward replacing annual crops with permanent crops in the southern San Joaquin Valley. The existing trend of replacing irrigated annual crops with permanent crops is expected to continue in the future. While it is possible that additional land could be converted to permanent crops as a result of the increased availability and reliability of water, no clear trend can be discerned. To the extent that some land would be converted to permanent crops, this would not prohibit San Joaquin kit fox migration, but could adversely impact Swainson’s hawk, as this habitat is not suitable for foraging.</p> <p>Even though the creation of new recharge ponds would periodically create open water and wetland habitat for waterfowl, the conversion of land for use as groundwater banking facilities could result in the loss of special-status species habitat.</p> <p>The KWBA manages lands within the Kern Fan Element property in accordance with an approved HCP/NCCP. Because the Kern Fan Element property is under a HCP/NCCP, the KWBA is required to follow specific guidelines to prevent take of special-status species and to enhance and preserve the natural habitat currently present. While no incidental take has occurred since the KWBA’s development of the Kern Water Bank (with exception of San Joaquin woolly threads), it is possible that cumulative development could result in take during construction, operation and maintenance, through collapsed burrows, road kills, crushed by grading equipment, harassment, habitat loss, drowning, etc.</p>	PS	<p>Implementation of Mitigation Measure 7.4-3 is currently implemented by the KWBA as required by the Kern Water Bank HCP/NCCP cumulative impacts to special-status species at the Kern Water Bank would be reduced to a less than significant level.</p> <p>Implementation of Mitigation Measure 7.4-2 would reduce the project’s contribution to this cumulative impact but not to a less-than-significant level. Impacts to terrestrial biological resources in the southern San Joaquin Valley portion of Kern and King’s Counties would be reduced through the following mitigation measures; however because the Department has no jurisdiction over local agency decisions and cannot enforce implementation of Mitigation Measure 7.4-2, and the impacts of individual activities are unknown at this time cumulative impacts to terrestrial biological resources would remain a potentially significant and unavoidable cumulative impact.</p> <p>10.1-3 Implement Mitigation Measures 7.4-2 and 7.4-3.</p> <p>Mitigation Measure 7.4-2 would prevent any adverse impact to special-status species through avoidance of the species and their habitat. If avoidance is not possible, then consultation with the resource agencies would be required to determine appropriate mitigation. However, even though impacts to terrestrial biological resources in the San Joaquin Valley would be reduced, because the impacts of individual activities are unknown at this time, the cumulative impact would remain significant and unavoidable.</p> <p>Mitigation Measure 7.4-3 would require the use of a biological monitor, special construction activities and on-going practices that would result in a heightened awareness and education regarding sensitive biological resources. In addition, the use of a project representative as a liaison between the project and the resource agencies would expedite notification regarding any take of a listed species. This mitigation measure also outlines avoidance protocol to further reduce the likelihood of take.</p>	PSU

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
Therefore, the proposed project, in combination with other cumulative water development and water reallocation projects, could result in significant impacts to biological resources in the southern San Joaquin Valley due to the construction of additional groundwater storage facilities and the project's contribution to this impact could be considerable.			
10.1-4 Changes in SWP reservoir levels could be impacted by cumulative projects, but such changes would not be anticipated to have a significant effect on water surface elevations compared to normal operating levels. Changes in the Sacramento-San Joaquin Delta are so small that they would not substantially affect any special status terrestrial species or their habitat.	LS	10.1-4 None required.	NA

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-5 Article 54 of the Monterey Amendment allows SWP contractors to borrow water from Lake Perris under certain conditions. Such borrowing could further reduce reservoir water levels if implemented concurrent with the seismic retrofit project draw down. The effects of borrowing of water on water surface elevations would depend on the extent to which MWDSC makes use of Article 54, Department approval, the season of us, other operational factors and future hydrologic conditions. If this worst-case scenario were to occur, the drawdown of the reservoir could potentially be equal to or greater than what would have occurred in the absence of the seismic retrofit project. As part of the Department’s ongoing seismic repairs at Lake Perris, the Santa Ana Watershed Association is currently conducting quarterly bird surveys to document how that drawdown affects birds in the area. The results of these surveys may provide insight into the effects on the reduction of food resources as a result of future drawdowns. The reduction in fish populations and that is attributed to maintaining a lower pool volume would be significant but short-term. Regardless, a reduction in food resources could result in reduced nesting success for raptors, bats, and waterfowl, which would result in a short-term potentially significant and unavoidable cumulative impact.</b></p>	PSU	10.1-5 None available.	PSU

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	1996 – 2020		1996 – 2020
<p><b>10.1-6 The seismic retrofit project in combination with borrowing water under Article 54 as allowed under the proposed project, could result in a drawdown of the reservoir that could potentially be equal to or greater than what would have occurred in the absence of the seismic retrofit project. Drastic changes in surface elevation during the growing season or a prolonged drawdown could have substantial impacts on riparian vegetation, which supports a variety of wildlife species, providing food, shelter, and nesting habitat.</b></p> <p><b>As part of the Department’s ongoing seismic repairs at Lake Perris, a number of mitigation measures have been initiated to reduce impacts to riparian vegetation. An irrigation system that draws water from Lake Perris and feeds the entire stretch of riparian vegetation has been installed. As of May 2007, the riparian vegetation is irrigated twice per week. The success of this system is being monitored monthly by the California Department of Parks and Recreation and may provide insight into the effects of drawdown on the riparian habitat.</b></p> <p><b>Regardless, the project’s contribution to a decline in the riparian vegetation would be considerable because this habitat is considered sensitive by DFG, and it supports special-status species.</b></p>	PS	<p>Implementation of Mitigation Measure 7.4-6 could reduce the project’s contribution to the loss of riparian habitat and the associated special-status species to a less-than-significant level, if the changes in water do not impact the riparian habitat, or if any loss of water is supplemented through the sub-surface or surface irrigation. However, because of the complexity of the system, it is unknown at this time what the real impacts on the riparian habitat would be and therefore, the residual impact cannot be assessed.</p> <p>10.1-6 Implement Mitigation Measure 7.4-6.</p> <p>Mitigation Measure 7.4-6(a) requires the development of baseline studies to determine what water source is maintaining the riparian habitat. In addition, a qualified biologist would conduct a complete habitat assessment of the riparian habitat documenting the size of the habitat, and all wildlife and plant species that use this habitat, including any special-status species.</p> <p>Mitigation Measure 7.4-6(b) requires that once a baseline is established, annual monitoring would be required to determine changes in hydrologic activities, changes in the health of the riparian habitat, and changes in the use of said habitat by special-status and other wildlife species.</p> <p>Mitigation Measure 7.4-6(c) requires that an irrigation system be installed to water the riparian habitat or the existing irrigation system shall be maintained and operated (assuming it is successful in maintaining riparian vegetation during the seismic repairs). In addition, monthly monitoring should be conducted to document any changes in the riparian habitat and allow for a timely adjustment of the watering schedule.</p>	PSU

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<b>Visual Resources</b>			
<p>The cumulative context for visual resources includes view sheds in the southern San Joaquin Valley, Castaic Lake, Lake Perris, San Luis Reservoir, Lake Oroville, and Plumas County. Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur. Watershed improvement projects take many forms but most involve actions to prevent erosion and restore wildlife habitat along streams and rivers. In general, projects of this type improve the appearance of stream banks by returning them to a more natural condition. Therefore, the pond and plug and stream bank stabilization and channel form projects, in combination with the Plumas County Watershed Forum watershed improvement projects would result in a beneficial effect on visual resources and therefore, no cumulative impact would occur.</p>			
<p>10.1-7 The proposed project would have a less than significant cumulative impact on visual resources in southern San Joaquin Valley, San Luis Reservoir, Lake Oroville and Plumas County. Changes in cropping patterns and the conversion of land to groundwater banking facilities would not represent a substantial change in the existing visual character. Because changes in the amount of water stored at San Luis Reservoir and Lake Oroville is not anticipated to have a significant effect on water surface elevations compared to normal operating levels, changes in the visual character at these two facilities would not be significant.</p>	<p>LS</p>	<p>10.1-7 None required.</p>	<p>NA</p>

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-8 Article 54 of the Monterey Amendment allows SWP contractors to borrow water from Lake Perris under certain conditions. Such borrowing could further reduce reservoir water levels if implemented concurrent with the seismic retrofit project draw down. The effects of borrowing of water on water surface elevations would depend on the extent to which MWDSC makes use of Article 54, Department approval, the season of us, other operational factors and future hydrologic conditions. If this worst-case scenario were to occur, the area exposed around the perimeter of the reservoir could potentially be equal to or greater than what would have occurred in the absence of the seismic retrofit project. Mitigation measures, such as hydroseeding or landscaping, to reduce all visual impacts at Lake Perris are economically and physically infeasible because of the scale of the area to be covered. Therefore, although the visual effects of drawdown would be temporary, the project’s contribution to this cumulative impact would be considerable.</b></p>	PS	10.1-8 None available.	PSU

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<b>Agricultural Resources</b>			
The cumulative context for agricultural resources is lands in agricultural production in the southern San Joaquin Valley.			
10.1-9 Implementation of the proposed project, combined with other cumulative water development and reallocation projects, could result in a reduction of average annual deliveries of SWP water to agricultural contractors. However, there would be little or no impact on the acreage of irrigated land in the southern San Joaquin Valley. If any land was to be taken out of irrigated production it would remain in agricultural use as dry farmed or fallow land and would not be converted to urban uses. Under the proposed project, no Prime, Unique or Farmland of Statewide Importance would be converted to non-agricultural uses nor would a conflict be created with respect to existing agricultural zoning or Williamson Act contracts. Therefore, the project’s contribution to cumulative conversion of special-status agricultural lands would not be considerable.	LS	10.1-9 None required.	NA
<b>Air Quality</b>			
The cumulative context for air quality would be the SVAB (southern San Joaquin Valley and San Luis Reservoir), SCAB (Lake Perris and Castaic Lake) and NSVAB (Pumas County). Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur.			

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-10</b> The proposed project would have a less than significant cumulative impact on emissions of PM<sub>10</sub>, NO<sub>x</sub> and ROG in southern San Joaquin Valley, San Luis Reservoir, Lake Oroville, and Plumas County. The proposed project would have little or no impact on the acreage of irrigated land in southern San Joaquin Valley. In addition, the amount of shoreline exposed to wind erosion, boat emissions, and vehicle emissions associated with recreational trips to and from San Luis Reservoir and Lake Oroville would not be expected to significantly change. Therefore, the emissions attributed to the proposed project would not be expected to result in a net increase in criteria pollutants over SJVAPCD, BCAPCD and Northern Sierra Air Quality Management District thresholds. The project’s contribution would not be considerable.</p>	LS	10.1-10 None required.	NA
<p><b>10.1-11</b> Article 54 of the Monterey Amendment allows SWP contractors to borrow water from Lake Perris under certain conditions. Such borrowing could further reduce reservoir water levels if implemented concurrent with the seismic retrofit project draw down. The effects of borrowing of water on water surface elevations would depend on the extent to which MWDSC makes use of Article 54, Department approval, the season of us, other operational factors and future hydrologic conditions. If this worst-case scenario were to occur, the area exposed around the perimeter of the reservoir could potentially be equal to or greater than what would have occurred in the absence of the seismic retrofit project. Mitigation measures, such as hydroseeding or landscaping, to reduce all visual impacts at Lake Perris are economically and physically infeasible because of the scale of the area to be covered. Therefore, although the increased rate of soil erosion attributed to the drawdown would be temporary, the project’s contribution to this cumulative impact would be considerable.</p>	PS	10.1-11 None available.	PSU

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	1996 – 2020		1996 – 2020
<b>Geology, Soils and Mineral Resources</b>			
<p>The cumulative context for soil erosion would be the southern San Joaquin Valley, Castaic Lake, Lake Perris, San Luis Reservoir, Lake Oroville, and Plumas County. Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur.</p>			
<p><b>10.1-12</b> The proposed project would have a less than significant cumulative impact on rates of soil erosion in southern San Joaquin Valley, San Luis Reservoir, Lake Oroville, and Plumas County. The disturbance of land resulting from changing agricultural practices and the conversion of land for use as groundwater banking facilities could result in land disturbance which could increase the rate of wind-generated soil erosion in the southern San Joaquin Valley. The proposed project, in combination with cumulative water development and reallocation projects would contribute to this effect. However, soils in the southern San Joaquin Valley are characterized as having slight to very slight potential to experience wind-generated erosion. In addition, the amount of soil along the shorelines of San Luis Reservoir and Lake Oroville would not be expected to significantly change over existing conditions.</p>	LS	10.1-12 None required.	NA

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	1996 – 2020		1996 – 2020
<p><b>10.1-13 Article 54 of the Monterey Amendment allows SWP contractors to borrow water from Lake Perris under certain conditions. Such borrowing could further reduce reservoir water levels if implemented concurrent with the seismic retrofit project draw down. The effects of borrowing of water on water surface elevations would depend on the extent to which MWDSC makes use of Article 54, Department approval, the season of us, other operational factors and future hydrologic conditions. If this worst-case scenario were to occur, the area exposed around the perimeter of the reservoir could potentially be equal to or greater than what would have occurred in the absence of the seismic retrofit project. Mitigation measures, such as hydroseeding or landscaping, to reduce exposure of soil erosion impacts at Lake Perris are economically and physically infeasible because of the scale of the area to be covered. Therefore, although the increased rate of soil erosion attributed to the drawdown would be temporary, the project’s contribution to this cumulative impact would be considerable.</b></p>	PS	10.1-13 None available.	PSU
<b>Recreation</b>			
<p>The cumulative context for recreation resources would be Castaic Lake, Lake Perris, San Luis Reservoir, and Lake Oroville. Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur.</p>			
<p><b>10.1-14 The proposed project would have a less than significant cumulative impact on recreational resources at San Luis Reservoir and Lake Oroville. Changes in the amount of water stored at San Luis Reservoir and Lake Oroville attributed to cumulative projects (including Monterey Plus) would not be anticipated to have a significant effect on water surface elevations compared to normal operating levels.</b></p>	LS	10.1-14 None required.	NA

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	1996 – 2020		1996 – 2020
<p><b>10.1-15 Article 54 of the Monterey Amendment allows SWP contractors to borrow water from Lake Perris under certain conditions. Such borrowing could further reduce reservoir water levels if implemented concurrent with the seismic retrofit project draw down. The effects of borrowing of water on water surface elevations would depend on the extent to which MWDSC makes use of Article 54, Department approval, the season of us, other operational factors and future hydrologic conditions.</b></p> <p><b>A multi-agency MOU signed by the Departments of Water Resources, Parks and Recreation, Boating and Waterways, and Fish and Game along with MWDSC, establish the “Lake Perris Operations Guidelines” which provide for recreational resource protection, benefits to fishery resources and protection of water quality at Lake Perris. Never the less, because the proposed project, in combination with the Seismic Retrofit Project, could result in a worst-case scenario where the reduction in elevation and the associated decrease in the availability of recreational facilities could potentially be equal to or greater than what would have occurred in the absence of the seismic retrofit project, and the project’s contribution would be considerable.</b></p>	PS	<p>Implementing the following mitigation measures would ensure that the project’s contribution to impacts to recreation resulting from Article 54 extended drawdowns would be reduced. However, because these mitigation measures would not guarantee the restoration of recreation opportunities, this would remain a short-term potentially significant and unavoidable cumulative impact.</p> <p>10.1-15 Implement Mitigation Measure 7.9-1(a) through (d).</p> <p>Mitigation Measure 7.9-1 requires the Department to notify the public at the onset of the loss of recreational resources due to Article 54 drawdowns at Lake Perris until the withdrawal is repaid.</p> <p>In addition, to the extent feasible, the Department would install, extend, or upgrade existing facilities (including lifeguard towers and emergency assistance equipment) to allow safe access to lower lake levels during multi-year drawdowns.</p> <p>The Department would also be required to monitor water quality during drawdown periods and when swimming is allowed using the current full-body contact criteria and laboratory methods adopted by the California Department of Health Services or the U.S. Environmental Protection Agency, as applicable.</p> <p>Finally, Mitigation Measure 7.9-1 would require the Department to prepare and provide funding for a management plan to control invasive plant species that could expand into recreational areas during extended drawdown periods.</p>	PSU

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	1996 – 2020		1996 – 2020
<b>Land Use and Planning</b>			
<b>The cumulative context for land use and planning is the southern San Joaquin Valley.</b>			
10.1-16 The proposed project would have a less than significant cumulative impact on land use designations in the southern San Joaquin Valley. The proposed project would have little or no impact on the acreage of irrigated land in southern San Joaquin Valley. With the proposed project, approximately 500 acres of ponds would be developed as part of other groundwater storage facilities in Kern County and approximately 1,200 acres of ponds in the Kern Water Bank. In addition, the Semitropic Water Storage District is proposing to construct the Stored Water Recovery Unit. While construction of these facilities could alter land use patterns, land use designations would not change and these uses would be compatible with existing land uses.	LS	10.1-16 None required.	NA
<b>Hazards and Hazardous Materials</b>			
<b>The cumulative context for hazards and hazardous materials would be the southern San Joaquin Valley and Plumas County.</b>			
10.1-17 The proposed project in combination with cumulative water development and reallocation projects would have a less than significant cumulative impact on workers or public exposure to previously unidentified hazards or hazardous materials in southern San Joaquin Valley. This cumulative risk of exposure would be temporary and regulated by federal and State laws that govern the storage, application and disposal of these chemicals to minimize risk of exposure.	LS	10.1-17 None required.	NA
<b>Noise</b>			
<b>The cumulative context for increases in noise levels would be the southern San Joaquin Valley, Castaic Lake, Lake Perris, San Luis Reservoir, Lake Oroville, and Plumas County. Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur.</b>			

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**TABLE S-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-18</b> The proposed project in combination with cumulative water development and reallocation projects would have a less than significant cumulative impact on noise levels in southern San Joaquin Valley, San Luis Reservoir, Lake Oroville, and Plumas County. The proposed project would have little impact on the acreage of irrigated land in southern San Joaquin Valley thus the project would not impact noise levels. Cumulative vehicle noise levels associated with boat use and recreational trips to and from San Luis Reservoir and Lake Oroville would not be expected to significantly change over baseline conditions.</p> <p>The number and size of watershed improvement projects to be constructed in Plumas County would be relatively small and the construction activities temporary. In addition, the improvements are likely to occur in locations where little or no sensitive receptors are present. While cumulative noise levels attributed to the construction and/or operation of cumulative water development and reallocation projects could increase, the proposed project's contribution to cumulative noise levels would not be considerable.</p>	LS	10.1-18 None required.	NA
<b>Cultural and Paleontological Resources</b>			
<p>The cumulative context for cultural and paleontological resources would be the southern San Joaquin Valley, Castaic Lake, Lake Perris, San Luis Reservoir, Lake Oroville, and Plumas County. Because none of the projects on the cumulative list would change water levels in Castaic Lake, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur.</p>			

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-19 Increased construction of banking facilities could increase the risk of damage or destruction of known or previously unidentified cultural resources. Therefore, this is considered a potentially significant cumulative impact. The project’s contribution would be considerable because it would include construction of groundwater banking facilities in Kern County, including on the Kern Fan Element property which could contribute to the exposure of cultural resources to damage or destruction.</b></p>	<p>PS</p>	<p>Implementation of the following mitigation measure would substantially limit the project’s contribution and this cumulative impact but it would remain significant and unavoidable because the Department can not guarantee the implementation or monitoring of Mitigation Measure 7.13-2. Therefore, the potential to damage or destroy cultural resources in southern San Joaquin Valley would remain a potentially significant and unavoidable cumulative impact.</p> <p>10.1-19 Implement Mitigation Measures 7.13-2(a) though (c) and 7.13-3(a) through (d).</p> <p>Implementation of Mitigation Measure 7.13-2(a) would reduce potentially significant impacts on archaeological resources to a less-than-significant level by requiring identification of known or suspected archaeological resources and requiring the analysis, protection, or scientific recovery and evaluation of any archaeological resources that could be encountered, which would ensure that important scientific information that could be provided by these resources regarding history or prehistory is not lost.</p> <p>Implementation of Mitigation Measure 7.13-2(b) would reduce potentially significant impacts on paleontological resources to a less-than-significant level by requiring identification of known or suspected resources and requiring the analysis, protection, or scientific recovery and evaluation of any paleontological resources that could be encountered, which would ensure that important scientific information that could be provided by these resources regarding the past is not lost.</p> <p>Implementation of Mitigation Measure 7.13-2© would reduce this potentially significant impact to a less-than-significant level by ensuring appropriate examination, treatment, and protection of human remains, consistent with the applicable provisions of State law.</p>	<p>PSU</p>

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
		Mitigation Measures 7.13-3 (a) through (d) were outlined in the Initial Study and Addendum to the Monterey Amendment EIR of the KWBA, Kern Water Bank HCP/NCCP. Under the Settlement Agreement, the parties recognize that the Addendum has been completed and agree not to challenge the mitigation measures (Settlement Agreement, III.F). The measures require that prior to any ground disturbing work on the Kern Water Bank that qualified professionals conduct a pedestrian survey and that any cultural resources identified during a survey be recorded, evaluated and mitigated pursuant to Section 106 of the National Historic Preservation Act. The measures also include a requirement to evaluate, consistent with Section 106 the eight recorded archeological sites on the Kern Water Bank and that if any human remains are found that work would be halted and the Kern County Coroner notified.	

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
<p><b>10.1-20 The potential for damage or destruction of cultural resources attributed to changes in reservoir levels in San Luis Reservoir and Lake Oroville would be cumulatively less than significant because water surface elevations are not anticipated to significantly change and the chance of uncovering resources currently below the normal operating water surface elevations is minimal.</b></p> <p><b>Drawdown of Lake Perris and the construction of watershed projects in Plumas County could increase the risk of damage or destruction of known or previously unidentified cultural resources. Therefore, this is considered a potentially significant cumulative impact. The project's contribution would be considerable because it could include extended drawdown of Lake Perris under Article 54 and construction of watershed improvement projects in Plumas County, all of which could contribute to the exposure of cultural resources to damage or destruction.</b></p>	PS	<p>10.1-20 Implement Mitigation Measures 7.13-2(a) through (c) and 7.13-3(a) through (d).</p> <p>Implementation of Mitigation Measure 7.13-2(a) would reduce potentially significant impacts on archaeological resources to a less-than-significant level by requiring identification of known or suspected archaeological resources and requiring the analysis, protection, or scientific recovery and evaluation of any archaeological resources that could be encountered, which would ensure that important scientific information that could be provided by these resources regarding history or prehistory is not lost.</p> <p>Implementation of Mitigation Measure 7.13-2(b) would reduce potentially significant impacts on paleontological resources to a less-than-significant level by requiring identification of known or suspected resources and requiring the analysis, protection, or scientific recovery and evaluation of any paleontological resources that could be encountered, which would ensure that important scientific information that could be provided by these resources regarding the past is not lost.</p> <p>Implementation of Mitigation Measure 7.13-2(c) would reduce this potentially significant impact to a less-than-significant level by ensuring appropriate examination, treatment, and protection of human remains, consistent with the applicable provisions of State law.</p>	LS

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	1996 – 2020		1996 – 2020
		Mitigation Measures 7.13-3(a) through (d) were outlined in the Initial Study and Addendum to the Monterey Amendment EIR of the KWBA, Kern Water Bank HCP/NCCP. Under the Settlement Agreement, the parties recognize that the Addendum has been completed and agree not to challenge the mitigation measures (Settlement Agreement, III.F). The measures require that prior to any ground disturbing work on the Kern Water Bank that qualified professionals conduct a pedestrian survey and that any cultural resources identified during a survey be recorded, evaluated and mitigated pursuant to Section 106 of the National Historic Preservation Act. The measures also include a requirement to evaluate, consistent with Section 106 the eight recorded archeological sites on the Kern Water Bank and that if any human remains are found that work would be halted and the Kern County Coroner notified.	
<b>Public Services and Utilities</b>			
None of the project elements would directly result in changes in population that would generate a need for new or expanded government facilities or an increase in demand for public services and utilities. Because there would be no impact, there would be no combined effect with the proposed project. Therefore, no cumulative impact would occur.			
<b>Traffic and Transportation</b>			
The cumulative context for increases in noise levels would be the southern San Joaquin Valley, Castaic Lake, Lake Perris, San Luis Reservoir, Lake Oroville, and Plumas County.			
10.1-21 The proposed project in combination with cumulative water development and reallocation projects could have a less than significant cumulative impact on vehicle trips resulting in level of service violations in southern San Joaquin Valley, San Luis Reservoir, Lake Oroville, and Plumas County. The numbers of vehicle trips to agricultural fields due to the proposed project will remain unchanged. In addition, changes in the amount of water stored at San Luis Reservoir and Lake Oroville attributed to cumulative projects (including Monterey Plus) would not be anticipated to have a significant effect on water surface elevations; therefore, vehicle trips on local and regional roads would not be expected to significantly change.	LS	10.1-21 None required.	NA

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	1996 – 2020		1996 – 2020
<b>Cumulative Impacts: Energy</b>			
The cumulative context for energy would be SWP hydroelectric facilities ( including, but not limited to Thermalito Diversion Dam, Hyatt-thermalito, Gianelli, Alamo, Warne, Mojave Siphon, and Devil Den) and other energy providers in California, the Northwest and the Southwest which the Department has agreements to sell, buy or exchange energy.			
10.1-22 The proposed project in combination with cumulative water development and reallocation projects would have a less than significant cumulative impact on energy demand. SWP pumping facilities are designed to meet the anticipated demands of the SWP Contractors, and this rated capacity would not be exceeded by implementation of the proposed project. The amount of additional power required would be within the limits of the planned power supply, and no expansion or construction of new facilities to generate power would be required. No new long-term or short-term contracts would be necessary under future conditions. Additionally, with a total long-term net load increase of 1.6 percent, the project’s contribution to increased energy demand would not be considerable.	NA	10.1-22 None required.	NA

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