



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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IN REPLY REFER TO:

December 7, 2000

Memorandum

To: Regional Director, U. S. Bureau of Reclamation, Sacramento, California

From: Acting Field Supervisor, Sacramento Fish and Wildlife Office
Sacramento, California

Subject: Fish and Wildlife Coordination Act Report on Implementation of the Central Valley Project Improvement Act

This memorandum constitutes the U.S. Fish and Wildlife Service's (Service) Fish and Wildlife Coordination Act (FWCA) report, as provided for in Section 2(b) of the FWCA (Public Law 85-624; 16 U.S.C. 661-667e), regarding U.S. Bureau of Reclamation (Reclamation) and Service implementation of the Central Valley Project Improvement Act (CVPIA). The Project Description for this action is identified in language currently under consideration for implementing the CVPIA [draft Record of Decision (ROD)] and is based on information developed as a result of an associated multi-year National Environmental Policy Act planning process. This language may be modified as the ROD is being finalized but is not expected to change in any substantive manner. Reclamation and the Service will implement the CVPIA in a manner similar to the Preferred Alternative identified in Chapter 2 of the Final Programmatic Environmental Impact Statement (PEIS) for CVPIA, with some modifications.

The FWCA requires consultation with the Service and provision of reports and recommendations to any Federal agency responsible for engineering surveys and construction of projects when any water body is impounded, diverted, controlled, or modified for any purpose. These Federal agencies shall give full consideration to the aforementioned report and recommendations and to any report of the State agency, and the project plan shall include such justifiable means and measures for wildlife purposes as the reporting agency finds should be adopted to obtain maximum overall project benefits. The Service may incorporate the concerns and findings of the State agencies and other Federal agencies, including the National Marine Fisheries Service (NMFS), into our report addressing fish and wildlife concerns.

Since the Service is, and has been, a co-lead agency for implementing the CVPIA and completion of the Final PEIS for implementing the CVPIA, our need for programmatic level surveys and investigations have been met through years of analyses, provided jointly to

Reclamation and the Service, in the PEIS process. Based on the following, we find no need to provide additional programmatic level recommendations:

- existing Service recommendations to prevent loss or damage to, and provide for development and improvement of fish and wildlife resources were incorporated adequately in the Final PEIS,
- Service mitigation and compensation recommendations were adopted appropriately,
- Section 7 consultation under the Endangered Species Act, as amended, for implementing the CVPIA has concluded with a determination of no jeopardy based on commitments to uphold the ESA, by both Reclamation and the Service combined with implementation of these programs and meeting the assumptions of the associated effects analysis (#1-1-98-F-0124),
- future coordination under the Fish and Wildlife Coordination Act will be completed as required for actions tiered from the PEIS.

If you have any questions regarding this report or other aspects of the Fish and Wildlife Coordination Act, please call Michael Hoover of my staff at (916) 414-6554.



Dale A. Pierce

RECORD OF DECISION

CENTRAL VALLEY PROJECT IMPROVEMENT ACT

FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

**U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
FISH AND WILDLIFE SERVICE
CALIFORNIA-NEVADA OPERATIONS OFFICE**

January 2001

Approved:

Date: _____

**Lester Snow
Regional Director, Mid-Pacific Region
Bureau of Reclamation**

Date: _____

**Michael Spear
Manager, California-Nevada Operations Office
Fish and Wildlife Service**

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I. INTRODUCTION

This Record of Decision (ROD) of the Department of the Interior (Interior), Bureau of Reclamation (Reclamation) and U.S. Fish and Wildlife Service (Service), documents the Decision for implementing provisions of the Central Valley Project Improvement Act (CVPIA), as analyzed in the Final Programmatic Environmental Impact Statement (PEIS), dated October 1999. This Decision is a hybrid of alternatives that were analyzed in the Final PEIS.

The CVPIA amends previous authorizations of the California Central Valley Project (California, CVP) to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement having an equal priority with power generation.

The CVP is one of the largest water storage and conveyance systems in the world. The project includes 20 dams and reservoirs capable of storing 11 million acre-feet of water, 11 power plants, 500 miles of major canals and aqueducts, three fish hatcheries, and various related facilities. The CVP conveys about 20 percent of the state's developed water from the Sacramento, Trinity, American, Stanislaus, and San Joaquin rivers to agricultural and municipal water users and wildlife refuges in the Sacramento and San Joaquin valleys and the San Francisco Bay Area.

Over the past 150 years, competition for water has escalated within the tributary area of the Sacramento-San Joaquin Delta. Agricultural and municipal development, as well as construction and operation of water systems such as the CVP, the State Water Project, and local projects and levee systems have reduced water quality and habitat that supports fish and wildlife resources in the Central Valley. Through the CVPIA, Interior will be implementing programs to help restore environmental conditions altered by the CVP.

For nearly three-quarters of the last century, California has depended on the CVP for a large part of its water needs, particularly for agriculture. Plagued by consecutive years of drought followed by wet years often bringing floods, the state relies heavily on CVP dams and reservoirs to help balance and control its water resources.

The Federal action taken by Interior is to implement provisions of the CVPIA. The general purposes of the CVPIA, and the action proposed by Interior, were identified by Congress in Section 3404 of CVPIA, as follows:

- to protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins of California;
- to address impacts of the Central Valley Project on fish, wildlife, and associated habitats;
- to improve the operational flexibility of the Central Valley Project;
- to increase water-related benefits provided by the Central Valley Project to the State of California through expanded use of voluntary water transfers and improved water conservation;

- to contribute to the State of California’s interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin Delta Estuary;
- to achieve a reasonable balance among competing demands for use of Central Valley Project water, including the requirements of fish and wildlife, agriculture, municipal and industrial and power contractors.

These purposes respond to a Congressionally identified need to modify the existing water operations and physical facilities of the CVP.

The Final PEIS analyzed the impacts of implementing various provisions of the CVPIA in the Central Valley and coastal areas of California over a 30-year study period.

STATUTORY BASIS FOR THE DECISION

On October 30, 1992, President Bush signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575) that included Title XXXIV, the CVPIA. The CVPIA amends the previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic uses and fish and wildlife enhancement as a project purpose equal to power generation. The CVPIA identifies a number of specific measures to meet these new purposes and directs the Secretary of the Interior (Secretary) to operate the CVP consistent with these purposes, to meet the Federal trust responsibilities to protect the fishery resources of federally recognized Indian tribes, and to achieve a reasonable balance among competing demands for use of CVP water. Section 3409 directs the Secretary to complete a PEIS to analyze the direct and indirect impacts and benefits of implementing CVPIA. The CVPIA also directs the Secretary to renew existing CVP water service and repayment contracts following completion of the PEIS and other environmental documentation, as may be needed.

The PEIS was prepared pursuant to regulations implementing the National Environmental Policy Act (NEPA) 42 U.S.C. 4321 *et seq.* NEPA provides a commitment that Federal agencies will consider the environmental effects of their actions. It also requires that an EIS be included in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. While NEPA does not impose substantive duties on the agencies, it does recognize “the interrelations of all components of the natural environment,” “the critical importance of restoring and maintaining environmental quality,” and “the responsibilities of each generation as trustee of the environment for succeeding generations.” 42 U.S.C. § 4331.

II. RELATIONSHIP TO CALFED AND THE TRINITY RIVER MAINSTEM FISHERY RESTORATION PROGRAM

As the CVPIA is being implemented, other concurrent programs affecting California's water resources are similarly being developed and implemented. Actions being considered under two of these programs, CALFED and the Trinity River Mainstem Fishery Restoration Program, were appropriately included in evaluations of the Final PEIS. Because their inclusion was identical in all Final PEIS alternatives, they are likewise considered in this Decision.

CALFED: The CALFED Bay-Delta Program is a cooperative effort amongst the public and State and Federal agencies with management and regulatory responsibility in the Bay-Delta system. The concept for the CALFED Bay-Delta Program was proposed in 1994 by President Clinton's Administration and Governor Pete Wilson, as part of the Bay-Delta Accord, to develop and implement a long-term comprehensive plan to restore ecological health and improve water management for beneficial uses of the Bay-Delta system. To practicably achieve this purpose, the task of CALFED is fourfold: 1) to restore the ecological health of a fragile and depleted Bay-Delta estuary; 2) improve the water supply reliability of the State's farms and growing cities that draw water from the Delta and its tributaries, including 7 million acres which are amongst the world's most productive farmlands; 3) protect the drinking water quality of the 22 million Californians who rely on the Delta for their supplies; and 4) protect the Delta levees that ensure its integrity as a conveyance and ecosystem. CALFED functionally consists of several programs designed to address these goals: Ecosystem Restoration, Water Quality, Water Transfers, Levee System Integrity, Watersheds, Water Use Efficiency, and Water Management Strategy. Portions of CVPIA's restoration efforts are currently being coordinated with CALFED's ongoing Ecosystem Restoration Program.

Implementing CALFED could change Bay-Delta operations criteria, provide additional conveyance and storage facilities that would effect Delta exports, and identify future actions that may need to be met by the CVP and other water rights holders. Because the outcome of the CALFED Bay-Delta Program EIS/EIR was not known at the time the PEIS was developed, a conservative assumption was used in the Final PEIS that Bay-Delta Plan Accord criteria would be used as the long-term Delta plan. Implementation of the CVPIA, including sections 3406(b)(2) and (b)(3), would then be in addition to this plan.

CALFED agencies have recently issued a Final Programmatic EIS/EIR and Record of Decision calling for a broad range of projects. Implementing these actions will depend on CALFED concluding subsequent site-specific analyses. A portion of Ecosystem Restoration actions identified in the CALFED ROD meet the goals and objectives of the Central Valley Project Improvement Act, providing for a possible overlap of actions with those provided by this Decision and the possible joint funding of those actions through application of the Restoration Fund established under section 3407 of the CVPIA. CALFED's Ecosystem Restoration Program also receives state and local funding; in some cases CALFED approves the expenditure of non-federal funds for Federal agencies to acquire and restore land.

Many of the actions within CALFED and the CVPIA address the same natural resource and water management problems and have the same or similar objectives. While developed under separate authority, as both programs are implemented there will be, by necessity, close coordination and a focus on functional integration to achieve common goals and avoid duplication of effort.

Trinity River Mainstem Fishery Restoration Program: Congress authorized construction and operation of the Trinity River Division by statute in 1955 (P.L. 84-386) including direction to the Secretary “to adopt appropriate measures to insure the preservation and propagation of fish and wildlife.”. The construction and operation of the Trinity River Division resulted in unintended detrimental impacts to the Trinity River and its fisheries resources.

A 12-year study was initiated in 1981, to be completed by the Fish and Wildlife Service, which called for “summarizing the effectiveness of restoration of flows and other measures including intensive stream and watershed management programs.” In 1984, the Trinity River Basin Fish and Wildlife Management Act (P.L. 98-541) was enacted, directing the Secretary to implement measures “to restore natural fish and wildlife populations to levels approximating those which existed immediately prior to the construction of the Trinity Division.” The Fish and Wildlife Service’s study, the Trinity River Flow Evaluation Study, was completed in 1999. The CVPIA, in Section 3406(b)(23), recognizes the importance of this concurrent program to protect and restore the Trinity River fishery in order to meet the Federal Government’s trust responsibility to the Hoopa Valley Tribe.

The Trinity River Mainstem Fishery Restoration Program (Trinity Program), in a separate EIS/EIR process, evaluated and analyzed a range of alternatives, including recommendations from the above Fish and Wildlife Service study, to restore and maintain the natural production of anadromous fish populations of the Trinity River mainstem downstream of Lewiston Dam. The Trinity Program was evaluated in a separate NEPA process from the Final PEIS for CVPIA and the Record of Decision for that program was signed by Secretary Babbitt on December 19, 2000. The alternatives considered in that process included many factors, including several different instream flow release patterns. Changes in instream flow release patterns affect the amount of water that can be exported to the CVP from the Trinity River. Changes in the amount of CVP exports from the Trinity River has the potential to affect how the CVP is operated. Therefore, to provide an appropriate analysis of changes in CVP operations for Final PEIS alternatives, it was necessary to develop an assumption for instream fish flow releases in the Trinity River. For this purpose, the Service developed an instream fisheries flow release pattern for the Trinity River, found in Attachment G of the Final PEIS. This release pattern was developed prior to the release of the Draft Trinity River EIS/EIR and is therefore slightly different than the alternative selected in the Trinity River Record of Decision. However, these assumed flows in the Final PEIS for CVPIA are very similar in magnitude and timing to that which was evaluated in the Trinity River Mainstem Fishery Restoration Program EIS/EIR. This instream fisheries flow release pattern was incorporated into all analyses for the Alternatives and Supplemental Analyses in the Final PEIS.

III. DECISION

Reclamation and the Service will implement the CVPIA in a manner similar to the Preferred Alternative identified in Chapter 2 of the Final PEIS with some modifications (differences between the Preferred Alternative and this Decision are on Table 1, page 11). The Preferred Alternative included actions that were divided between Core and Multiple Option programs in order to help develop a range of actions or programs to meet the purposes of the CVPIA and implement its provisions consistent with assumptions in analyses of the CVPIA PEIS. This Decision includes the decision to implement, on a programmatic-level, the following actions and program-level guidance. Reclamation and the Service will undertake the following:

CVP Contract Renewal -- Evaluation provided in analysis of all alternatives in the Final PEIS

3404(c) 3405(b) & (e) Proceed with the process of long-term renewal of CVP water service contracts, including terms for water measurement and conservation, that will result in their renewal for a 25 year period.

Water Transfers -- Evaluation provided in analysis of all alternatives in the Final PEIS

3405(a) Allow transfer of CVP water subject to conditions detailed in Section 3405(a). This decision does not implement any specific transfers, but establishes that CVP water generally will be transferrable. Costs on water transfers will be imposed equal to the cost of service for municipal CVP water, and the higher cost of service or full cost for agricultural CVP water. Costs of transferred CVP water and all other water supplies will include the cost to the seller to make the water available, including the amount of lost income. Consistent with Section 3407(d)(2)(A), an annual \$25/acre-foot charge (1992 dollars) will be added to CVP water sold or transferred to any State or local agency or other entity which has not previously been a CVP customer and which contracts with the Secretary or any other individual or district receiving CVP water to purchase or otherwise transfer any such water for its own use for municipal and industrial purposes. The mitigation and restoration payment will be increased from \$6 to \$12 (1992 dollars) for the transfer of agricultural CVP water to CVP municipal water users.

CVP Water Pricing -- Evaluation provided in analysis of all alternatives in the Final PEIS, with the exception of 1c

3405(d) Implement water pricing, at a minimum, based on the “80/10/10 Tiered Water Pricing up to Full Cost Approach” and the use of the Ability-to-Pay policies.

Anadromous Fish Restoration Program -- Evaluation provided in analysis of all alternatives in the Final PEIS

- 3406(b)(1) Develop and complete the Anadromous Fish Restoration Program (AFRP) with a goal of taking reasonable efforts to ensure that, by the Year 2002, natural production of anadromous fish in Central Valley rivers and streams will be sustainable on a long term basis at levels not less than twice the average levels attained during the period from 1967 through 1991. Proceed with implementation of improvements for anadromous fish restoration established in the Revised Draft Restoration Plan ("Plan") for the Anadromous Fish Restoration Program, dated May 30, 1997. Specific actions to improve anadromous fish flows are provided in sections 3406 (b)(2) and (b)(3) of this Decision. Information from all monitoring efforts, including the Comprehensive Assessment and Monitoring Program (CAMP) [3406(b)(16)], explained below, will be used to assist in the adaptive management of the AFRP. In addition, Interior will use partnerships with other Federal, State, and private entities to meet the overall goals. Inclusion in, and evaluation and consideration of the Plan for the Anadromous Fish Restoration Program in the PEIS and this Decision allows for finalization of the Plan without further programmatic level NEPA documentation. However, specific projects called out in the Plan may require further site specific NEPA documentation prior to their implementation.

CVP Reoperation -- Evaluation provided in analysis of all alternatives in the Final PEIS

- 3406(b)(1)(B) Reoperate the CVP, as needed, to achieve the goals of the Anadromous Fish Restoration Program (AFRP) [section 3406(b)(1)] without affecting fulfillment of CVP contractual obligations.

Habitat Restoration Program -- Evaluation provided in analysis of all alternatives in the Final PEIS

- 3406(b)(1) "Other" Carry-out a Habitat Restoration Program developed pursuant to guidance on implementing the Section 3406(b)(1) "other" Program in the Final PEIS (Chapter II, Page II-22).

CVP Dedicated Water -- Evaluation provided in analysis of the Preferred Alternative in the Final PEIS

- 3406(b)(2) Dedicate and manage CVP yield for fish and wildlife in accordance with Interior's *Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*¹, released on October 5, 1999 [henceforth referred to as "(b)(2) water"].

¹ The *Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*, released on October 5, 1999, did not specifically provide mechanisms to reduce or eliminate impacts associated with implementing section 3406(b)(2) of the CVPIA; however, it did state, "Interior's policy is that (b)(2) actions will not be permitted to adversely affect the State Water Project (SWP), operated by DWR, and that any adverse impacts will be made up."

Supplemental Water Acquisition -- Evaluation provided in analysis of Alternative 3 and 4 in the Final PEIS

3406(b)(3) Target average annual fish and wildlife water acquisitions for use on the San Joaquin and Sacramento rivers tributaries at approximately 200,000 acre-feet/year.

Structural Modifications -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(b)(4-6),
3406(b)(11,17),
& 3406(b)(20) Proceed with modifications to facilities, including: Tracy and Contra Costa Pumping Plants fish protection, Shasta Temperature Control Device, Coleman National Fish Hatchery, Keswick Dam Fish Trap, Anderson-Cottonwood Irrigation District Diversion, and Glenn-Colusa Irrigation District Diversion fish screen facility.

Anadromous Fish Flow Pulses -- Evaluation provided in analysis of the Preferred Alternative in the Final PEIS

3406(b)(8) Interior will make the best use of flow pulses to increase the survival of migratory anadromous fish moving into and through the Sacramento-San Joaquin Delta and Central Valley rivers and streams as provided by existing operations or under sections 3406(b)(2) and (3) of the CVPIA, and as provided in the *Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*, released on October 5, 1999.

Elimination of Flow Fluctuations -- Evaluation provided in analysis of the Preferred Alternative in the Final PEIS

3406(b)(9) Actions to limit flow fluctuations will be provided by existing operations or under sections 3406(b)(2) and (3) of the CVPIA, and as provided in the *Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*, released on October 5, 1999.

Clear Creek Restoration -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(b)(12) Proceed with habitat improvements and structural actions on Clear Creek, including the improvement of fish passage and access at McCormick-Saeltzer Dam.

Gravel Replenishment -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(b)(13) Implement non-flow stream restoration actions focused on anadromous fish spawning gravel replacement in the Stanislaus, American, and Sacramento rivers

Assessment and Monitoring -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(b)(16) Implement the Comprehensive Assessment and Monitoring Program to monitor fish and wildlife resources to assess the effectiveness of actions implemented to restore fish, wildlife, and associated habitats pursuant to section 3406.

Anadromous Fish Screen Program -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(b)(21) Provide measures to avoid fish loss at diversions, including construction or modification of screens, bypasses, fish ladders, and diversions.

Seasonal Agricultural Field Flooding -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(b)(22) Conduct seasonal agricultural field flooding of up to 80,000 acres per year consistent with the CVPIA.

Refuge Water Supply -- Evaluation provided in analysis of all alternatives in the Final PEIS

3406(d)(1, 4, 5) Assure firm, reliable water supplies of suitable quality are provided to authorized Central Valley National Wildlife Refuges, Wildlife Management Areas, and the Grassland Resource Conservation District to maintain and improve wetland habitat to meet historic refuge annual supplies available prior to the CVPIA (Level 2²). These supplies will be subject to shortages based on “hydrologic circumstances” defined as critically dry years under the Shasta Inflow Index criteria. When imposed, these reductions shall not exceed 25-percent of Level 2 supplies.

3406(d)(2, 4, 5) Increase refuge water supplies by the incremental level required for full habitat management (Level 4³) through voluntary measures which do not require involuntary reallocation of project yield. These incremental supplies will be subject to shortage allocations based on the priority or priorities which applied to the water prior to its transfer for refuge purposes.

Restoration Fund -- Included in evaluations provided in analyses of all alternatives in the Final PEIS

3405(f) & 3407 Collect donations and revenues provided under the provisions of the CVPIA into the Restoration Fund as provided by the CVPIA.

Land Retirement Program -- Evaluation provided in analysis of the Preferred Alternative in the Final PEIS

3408(h) Purchase and retire lands from willing sellers using funding provided by the CVPIA. Conduct a Demonstration Study on 15,000 acres in the San Joaquin Valley and use the findings to guide continued retirement and management of lands in an appropriate manner. Retired lands, dependent on the Study results, could remain vacant, contain minimal farming, and/or be revegetated with native vegetation and host reintroduction of special-status species.

Prior to implementation, each program and action will be evaluated to determine if additional NEPA analysis is necessary. Depending on that evaluation, either additional NEPA documentation will be prepared, or a finding made that no significant changes in actions or

² “Level 2” refuge water supplies are the average historic water supply levels, based upon deliveries between 1978 and 1984, identified in the 1989 Refuge Water Supply Study and two-thirds of the water needs identified in the San Joaquin Basin Action Plan.

³ “Level 4” refuge water is the amount of water necessary to fully develop the refuges identified in the 1989 Refuge Water Supply Study, and the remaining one-third of the water needs as described in the San Joaquin Basin Action Plan.

circumstances has occurred, or substantial new information has been obtained since the Final PEIS.

CVPIA SECTIONS NOT INCLUDED IN DECISION

Implementation of all of the sections of the CVPIA are not included in this Decision. Additional, separate or tiered NEPA analysis may be required to implement many of the CVPIA provisions not included in this Decision. Upon completion of these studies and the gathering of additional information, which is dependent upon the availability of funds, an evaluation will be made as to the level of NEPA compliance and authority necessary for implementation. The following list explains why certain sections were not included in this Decision.

CVPIA Actions Required by Other Regulations

3405(c) and 3406(b)(7) Water Quality, Flow Standards and Diversion Limits: All water quality and flow standards, and objective and diversion limits set forth in all laws and judicial decisions that apply to the CVP are assumed to be met. Additional NEPA analysis may be necessary if this is not the case.

CVPIA-Related Studies Where the Outcome Is Speculative at this Time

- 3406(b)(19) CVP Carryover Storage Evaluations: The impact of modifying Shasta and Trinity River reservoirs will be evaluated. If reoperation differs substantially from that examined in Final PEIS alternatives, specifically differences in water supplies and stream flows as compared to the range evaluated in the Final PEIS, additional NEPA analysis may be required prior to implementation.
- 3406(e) Supporting Investigations: This action addresses a number of studies to be initiated to address various methods for improving anadromous fish survival. Depending on their findings, additional NEPA analyses may be required prior to implementation of any action.
- 3406(g) Ecosystem and Water System Operations Models: As models are developed to evaluate ecologic and hydrologic effects of existing and alternative operations of public and private water facilities and systems in the Central Valley and Trinity River watersheds, additional NEPA analysis may be required prior to implementation of any associated actions.
- 3406(c)(1 and 2) San Joaquin and Stanislaus Rivers Studies: These are studies. Depending on their findings and recommendations with regards to actions which may be taken to improve streamflow, channel, riparian habitat, and water quality; future NEPA analyses may be required.
- 3406(d)(6) Investigate Means to Improve Water Supplies to Privately-owned Wetlands: This independent investigation will lead to a Report to Congress. Depending on its findings and recommendations, evaluations under NEPA may be required prior to implementation of any recommended actions in the report.

Insufficient Information Currently Exists to Complete Adequate Analysis Allowing for Implementation

- 3404(a) New Contracts: As appropriate, further NEPA analysis will consider CVP-wide or site-specific water supply impacts and examine the impacts of providing this water on lands not currently served by CVP water or in the CVP service area.
- 3406(b)(10) Red Bluff Diversion Dam: When evaluations are complete, a decision will be made separate from this Decision regarding the best operation of the Red Bluff Diversion Dam. Operation of the Red Bluff Diversion Dam is assumed, as in the No Action Alternative, to be gates open from mid-September through mid-May, as required by the winter-run chinook salmon biological opinion, and gates closed mid-May through mid-September. Diversions were at No-Action Alternative levels.
- Section 3406 (b)(14) & (15) Delta Barriers: Appropriate operation of fish barriers in Georgiana Slough and Old River are being evaluated in separate processes, including CALFED, and are not defined in this Decision. However, the general benefits of their implementation is assumed. Specific actions and operations may require additional NEPA evaluations.
- 3406(b)(18) Restoration of Striped Bass Fishery: Specific actions taken to restore the striped bass fishery, including improvements to streambeds and channels and the development of a flow improvement program, would require additional NEPA documentation to evaluate possible impacts on surface water and groundwater supplies, water quality, fish and wildlife, vegetation, soils, and cultural resources. It may also be necessary to examine potential impacts on the interaction between the CVP and SWP operations.
- 3408(b) Use of Electrical Energy for Fish and Wildlife Purposes (such as energy for pumping on refuges): Future NEPA analyses would evaluate impacts to available energy for sale to preference power customers, as appropriate, and the need to acquire additional energy for CVP operations and preference power customers.
- 3408(c-d) Contracts for Additional Storage and Delivery of Water and Use of Project Facilities for Water Banking: These provisions address the shortage and delivery of CVP water and non-project water for beneficial purposes, including fish and wildlife and use of CVP facilities for water banking. Future NEPA analyses would evaluate impacts on such things as water supplies to CVP and SWP water users; and changes to CVP power generation, reservoir recreation, fisheries, water quality, and economics.
- 3408(i) Water Conservation: Water conservation projects or measures provided for under section 3408(i) may require additional NEPA evaluations once these actions are known.

3408(j) Project Yield Increase: This provision requires the development of a plan to increase the yield of the CVP by the amount dedicated to fish and wildlife purposes under the Act. The plan is to address various options stipulated in the Act. NEPA analyses would be conducted prior to implementation of plan actions.

3412 Extension of the Tehama-Colusa Canal: This provision addresses the extension of the Tehama-Colusa Canal and the change in the service area to be served by the canal. Future NEPA analysis would address the site-specific impacts of construction of the canal extension and impacts of water use.

No Action Alternative and Cumulative Actions With Separate NEPA Underway or Completed

3406(b)(6) Shasta Temperature Control Device: The benefits of operating the Shasta Temperature Control Device were included in CVP operation modeling in the No Action and other Alternatives in the Final PEIS, including implementation of sections 3406(b)(2) and (3). Section 3406(b)(6) is included here because it is assumed it would be completed without the CVPIA using alternative fund sources. Actual NEPA analysis and associated decision(s) for this structure were provided separately from this Decision.

3406(b)(23) Instream Flow Releases in Trinity River: Changes to instream flow releases in the Trinity River are analyzed in a separate EIR/EIS. Decisions relative to Trinity River flows were made in a separate ROD, signed on December 19, 2000, based on that EIR/EIS.

3406(d)(5) Construction of Conveyance Facilities for Refuges: This action involves construction of conveyance facilities for levels 2 and 4 water supplies. Separate NEPA documentation is being prepared to evaluate impacts on fisheries, vegetation, wildlife, water supply, land use and the local economy.

DIFFERENCES BETWEEN THE PREFERRED ALTERNATIVE AND DECISION

The differences between the programs and actions listed in the Preferred Alternative in Chapter 2 of the Final PEIS and this Decision are listed below by provision of the Act on Table 1.

TABLE 1. Differences Between the Preferred Alternative and This Decision

<u>CVPIA Section</u>	<u>Decision</u>	<u>Preferred Alternative</u>
3406(b)(1)	This Decision identifies the Revised Draft Restoration Plan for the Anadromous Fish Restoration Program (released May, 1997) as the guide for implementing non-flow improvements for anadromous fish restoration under section 3406(b)(1).	The alternatives in the Final PEIS identified Appendix F, Table F-1 (<i>Non-Flow Fish Management Actions Under Anadromous Fish Restoration Program</i>) as the non-flow improvements for anadromous fish restoration under section 3406(b)(1).

Discussion - Because the entire Revised Draft Restoration Plan for the Anadromous Fish Restoration Program is included in Attachment F, and no additional differences are expected, the impacts and benefits of implementing this Decision are included in the analyses in the Final PEIS. However, because adaptive management was included in the Revised Draft Plan, allowing for appropriate adjustments in implementation, it is assumed actual implementation will be more effective and efficient under this Decision. Adaptive management allows resource managers to alter actions based on their measured effectiveness. Monitoring programs will be the foundation of the adaptive management approach.

<u>CVPIA Section</u>	<u>Decision</u>	<u>Preferred Alternative</u>
3406(b)(3)	Target average fish and wildlife water acquisition on the San Joaquin and Sacramento rivers tributaries were increased in the Decision to approximately 200,000 acre-feet to assist meeting increased flow needs like those identified in associated AFRP processes and within the ROD for the San Joaquin River Agreement.	The Preferred Alternative in the Final PEIS used the identified flow needs in the preliminary San Joaquin River Agreement that, when added to supplemental Sacramento River basin anadromous fish flows, totaled approximately 140,000 acre-feet.

Discussion - The effects associated with this increase are within the Final PEIS analyses completed for Alternatives 3 and 4.

TABLE 1. Differences Between the Preferred Alternative and This Decision -Continued

<u>CVPIA Section</u>	<u>Decision</u>	<u>Preferred Alternative</u>
3406(d)(1-5)	This Decision identifies that Level 2 refuge water supplies will be subject to hydrologic shortages described by the Shasta Index with a maximum shortage of 25% of the total amount. Such reductions shall not exceed in percentage terms, the reductions imposed on agricultural service contractors.	The Preferred Alternative in the Final PEIS included the State Water Resource Control Board's 40-30-30 Index as the means to define shortages to Level 2 refuge water supplies and to provide a greater range to the PEIS analysis when considered together with the Draft PEIS alternatives, which included the Shasta Index.
<p><i>Discussion</i> - Use of the Shasta Index to evaluate refuge water supply shortages in the Decision is a change from the Preferred Alternative; however, the Shasta Index was used to evaluate refuge water supply shortages in the Draft PEIS. Analyses in the Preferred Alternative, when compared to analyses in this Decision, identified a minimal increase in the number of years of refuge water supply shortages (2 years) over the 70 year period of analysis.</p>		

<u>CVPIA Section</u>	<u>Decision</u>	<u>Preferred Alternative</u>
3408(h)	The completion and use of a Land Retirement Demonstration Study is included in this Decision.	Completion and use of the Land Retirement Demonstration Study was not specifically identified as a part of the alternatives in the Final PEIS.
<p><i>Discussion</i> - Completion of the Land Retirement Demonstration Study will provide guidance for future implementation of the overall retirement program, better providing for its adaptive management. While it is estimated that consideration of Demonstration Study guidance would result in a program within the alternative analyses in the Final PEIS (Alternatives 1-4, Supplemental Analysis 1h, and the Preferred Alternative), its use is expected to result in a more effective and efficient overall retirement program. In addition, action-specific NEPA documentation has been prepared for the Demonstration Study.</p>		

IV. ALTERNATIVES CONSIDERED

The alternatives were developed to evaluate a range of actions or programs to meet the purposes and implement the provisions of the CVPIA. Six alternatives (No Action Alternative, Alternatives 1-4, and the Preferred Alternative) and 15 Supplemental Analyses that expand on or added to the main alternatives were considered in making this Decision.

NO ACTION ALTERNATIVE

The No-Action Alternative reflected conditions in the Year 2025, as if the CVPIA had not been adopted, and provided a baseline for assessing other alternatives. It included projections concerning future growth and land use changes based on projections from the State Department of Water Resources (DWR) Bulletin 160-93, including lands projected to be retired in accordance with the San Joaquin Valley Drainage Plan. The No-Action Alternative included existing CVP facilities and changes in CVP operational policies which were being evaluated concurrently. The existence of the Bay-Delta Plan Accord and the winter-run Biological Opinion are assumed in the No-Action. The No-Action Alternative also included assumptions concerning concurrent but separate issues, such as the assumption that ocean harvest limitations for sport and commercial salmon fishing would be consistent with 1992 policies and would be evaluated in a separate process by NMFS and other groups. Another assumption included in the No-Action Alternative, and being addressed as a separate program, was the U.S. Department of Agriculture farm commodities program. The No-Action Alternative assumed this program would not vary from 1992 policies.

Based on the Supplement to the Draft PEIS (June 1999), the No-Action Alternative was revised as a result of corrections to hydrologic modeling. The Revised No-Action Alternative makes assumptions similar to the Draft PEIS No-Action Alternative, but has different impacts because of the changes to the hydrologic modeling. The Preferred Alternative was analyzed in comparison to the Revised No-Action Alternative.

ALTERNATIVE 1

Alternative 1 included Core Programs as do the other five action alternatives, including the Preferred Alternative. These Core Programs addressed contract renewal; water measurement and conservation; collection and expenditure of the Restoration Fund; anadromous fish protection, restoration and enhancement by modifying various facilities and improving instream habitats by implementing non-flow anadromous fish actions; and protection, restoration, and enhancement of additional fish, wildlife, and associated habitats through implementation of the Habitat Restoration Program, seasonal agricultural field flooding, and land retirement. Additionally, CVP power generation and water conservation programs would be similar in all alternatives.

In addition to Core Programs, Alternative 1 used reoperation of the CVP to provide greater benefits for fish and wildlife and used (b)(2) water to meet the CVP share of the Bay-Delta Plan as well as the (b)(2) Instream Components. Alternative 1 also implemented the Contract-to-Full-Cost tiered pricing rate, which begins at the contract rate for the first 80-percent, the average between contract and full-cost rates for the next 10-percent of water, and full cost for the final 10-percent of water. Alternative 1 did not acquire water for instream flow improvements or make permanent structural improvements to the Old River Barrier or Georgiana Slough. It did provide Level 2 refuge water supplies with the shortage provision based on the Shasta inflow index with a maximum shortage of 25-percent. Supplemental analyses for Alternative 1 are listed below.

Supplemental Analysis 1a - Under 1a, a (b)(2) Delta Component would join the Bay-Delta and Instream Components in the project reoperation and use of (b)(2) water.

Supplemental Analysis 1b - This Supplemental Analysis would add structural improvements in the Delta to protect young salmon and other fish as they migrate through the Delta. Modified operation at the Delta Cross Channel, permanent structures at Georgiana Slough, and a seasonally operated barrier at Old River would potentially improve survivability of young fish as they migrate downstream.

Supplemental Analysis 1c - All main alternatives change current water pricing in some manner. Supplemental Analysis 1c built on Alternative 1 by implementing the tiered pricing requirement of the CVPIA through the Full-Cost-Plus method. The first 80-percent of contract allocation would be priced at full cost, the next 10-percent of allocation would be 110-percent of full cost, and the final 10-percent of allocation would be 120-percent of full cost.

Supplemental Analysis 1d - Supplemental Analysis 1d built on the refuge water supply element of Alternative 1 by eliminating the shortage provision. In Supplemental Analysis 1d, refuges would receive full Level 2 supply in all years.

Supplemental Analysis 1e - Water transfers would be between willing seller and buyer and, therefore, are not mandated by the CVPIA. Supplemental Analysis 1e would integrate the expected benefits of transfers to the main alternative with fees specified by the CVPIA and allows transfer of CVP water to non-CVP users.

Supplemental Analysis 1f - This Supplemental Analysis would be similar to 1e in its purpose, but would add a \$50/acre-foot fee on all CVP transfers, with the additional funds added to the Restoration Fund. This Supplemental Analysis and others that impose the additional fee would require additional Congressional authorization.

Supplemental Analysis 1g - Supplemental Analysis 1g would remove the current ability-to-pay policy applied to the 80/10/10 Contract-to-Full-Cost tiered pricing policy implemented in the main Alternative 1.

Supplemental Analysis 1h - Restoration Funds would be used under this alternative to develop and implement a formal Revegetation Program for the retired lands. This Supplemental Analysis increased the use of the Restoration Funds for habitat restoration and enhancement.

Supplemental Analysis 1i - Supplemental Analysis 1i provided year-round opening of the Red Bluff Diversion Dam gates. This alternative would improve operational flexibility and provided greater balance among water supply and fish and wildlife demands. Diversions to the Tehama-Colusa Canal would not change from previous alternatives.

ALTERNATIVE 2

Alternative 2 built on the main Alternative 1 by acquiring, from willing sellers, 60,000 acre-feet of water on both the Stanislaus and Tuolumne rivers, 50,000 acre-feet on the Merced River, and an undetermined amount on Upper Sacramento River Tributaries. The acquired water would be used to improve fishery conditions on rivers tributary to the Delta. In addition to assisting in

meeting target flows for the streams, the water would also be used to increase flows through the Delta and would not be exported. Refuge water supplies would be increased to Level 4 through water purchased from willing sellers, subject to hydrologic shortages based on the priority or priorities which applied to the water prior to its transfer. Supplemental Analyses for Alternative 2 are listed below.

Supplemental Analysis 2a - Supplemental Analysis 2a, like alternative 1b, would add structural improvements in the Delta to protect young salmon and other fish as they migrate through the Delta.

Supplemental Analysis 2b - This Supplemental Analysis would allow transfers from CVP to non-CVP water users and included fees specified in the CVPIA, similar to Supplemental Analysis 1e, but would build on Alternative 2.

Supplemental Analysis 2c - Supplemental Analysis 2c would be similar to 1f, in that it added a \$50/acre-foot fee to all transfers of CVP water. Like 2b, however, Supplemental Analysis 2c would be additive to the main Alternative 2.

Supplemental Analysis 2d - Supplemental Analysis 2d would be similar to Supplemental Analysis 1c as it implemented the tiered pricing requirement of the CVPIA through the Full-Cost-Plus method, but would build on Alternative 2.

ALTERNATIVE 3

Alternative 3 continued to build on the previous alternatives by retaining all of Alternative 1 and the Refuge Water Supply provision of Alternative 2, and added to the volume and number of streams on which water would be acquired. Under this alternative, up to 200,000 acre-feet would be acquired on each of the Stanislaus, Tuolumne, and Merced rivers; 30,000 acre-feet on the Calaveras River; 70,000 acre-feet on the Mokelumne River; and 100,000 acre-feet on the Yuba River. An undetermined amount of water would also be acquired on Upper Sacramento River Tributaries. Alternative 3 was further distinguished from Alternative 2 in that acquired water would not be specifically used to increase in-Delta flows. As a result, acquired water would be available for export under Alternative 3 once requirements of the Bay-Delta Accord have been met. The Supplemental Analysis for Alternative 3 is listed below.

Supplemental Analysis 3a - This Supplemental Analysis would repeat the water transfer implementation as in Supplemental Analyses 1e and 2b, which included only fees specifically mandated by the CVPIA.

ALTERNATIVE 4 (Environmentally Preferred Alternative)

Alternative 4 built on Alternative 3 by adding the Delta Component of the AFRP to the reoperation and (b)(2) water program, and used the acquired water for Delta flow increases. This acquired water would not be available for export from the Delta. Alternative 4 completed the upper range of water acquisition and instream uses for fish and wildlife restoration. It would provide the same acquisition levels in all streams as Alternative 3 and, like Alternative 2, provided for no export of acquired water. Alternative 4, like Alternatives 1 through 3, also

incorporated other actions benefitting the environment, including implementation of the Habitat Restoration Program, seasonal agricultural field flooding, and land retirement. Because Alternative 4 would provide the greatest benefit to the environment, it is the Environmentally Preferred Alternative. The Supplemental analysis for Alternative 4 is listed below.

Supplemental Analysis 4a - This Supplemental Analysis would repeat the water transfer implementation as in Supplemental Analyses 1e, 2b, and 3a, which included only fees specifically mandated by the CVPIA.

PREFERRED ALTERNATIVE

The Preferred Alternative would use reoperation of the project as provided in Alternative 1 and added, from willing sellers, purchases of about 110,000 acre-feet/year on San Joaquin River tributaries based on the preliminary San Joaquin River Agreement, and purchases about 30,000 acre-feet/year on Sacramento River Tributaries. Approximately 50-percent of this acquired water would be managed to improve flows in the Delta, and approximately 50-percent could be exported if the Bay-Delta Plan conditions were met. Level 2 refuge water supplies are provided subject to hydrologic shortages described by the California State Water Resource Control Board's 40-30-30 Index with a maximum shortage of 25-percent. Refuge water supplies would be increased to Level 4, as in Alternatives 2 through 4, with hydrologic shortages based on the priority or priorities which applied to the water prior to its transfer. The Preferred Alternative would reoperate CVP facilities and would release CVP water in the Sacramento, American, Stanislaus, and lower San Joaquin rivers, Clear Creek, and in the Delta consistent with the October 5, 1999 Decision on implementing Section 3406(b)(2). The potential for water transfers would be improved, retired lands would be revegetated, and animal reintroduction programs would be implemented to improve the land for special-status species.

V. BASIS OF DECISION

Reclamation and the Service selected this Decision based on the ability of its actions and programs to meet the purposes of the CVPIA consistent with assumptions in analyses of the CVPIA PEIS, other Federal and State requirements such as the Federal Endangered Species Act, and on evaluations provided in the Final PEIS.

ABILITY TO MEET CVPIA PURPOSES

Alternatives to implement the CVPIA were developed to meet its purposes as defined in section 3402 of the Act, and were identified in section I. INTRODUCTION of this Decision. The Final PEIS viewed these purposes as objectives in the development of Core and Multiple Option programs to implement various sections of the CVPIA. The comparison of different implementation methods within alternatives to these objectives is summarized in Table II-11 of the Final PEIS. The extent to which this Decision will, and the alternatives in the Final PEIS would, meet these objectives is discussed below. For the purpose of this programmatic

comparison to the purposes of the Act, the Preferred Alternative and this Decision are very similar, if not identical in many areas.

Improvements to Fish and Wildlife Resources [Section 3402(a) and (b)]: This Decision provides the greatest benefit for fish and wildlife resources consistent with reasonable assumptions in analyses of the CVPIA PEIS. Within those reasonable assumptions, this Decision more effectively includes methods to meet the objectives in sections 3402 (a) and (b) to protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins and address impacts of the CVP, than any specific alternative evaluated in the Final PEIS.

All alternatives and this Decision include implementation of various flow and non-flow actions for anadromous fish restoration, improved water supplies to refuges, and restoration efforts for other fish and wildlife resources as a result of implementing the Habitat Restoration Program [section 3406(b)(1) “Other”]. Anadromous fish restoration under this Decision and the Preferred Alternative provide flow improvements in Central Valley rivers, streams, and the Delta by including reoperation of the CVP as provided under section 3406(b)(1)(B), use of (b)(2) water, and water acquired from willing sellers [section 3406(b)(3)]. These methods were included in other Final PEIS alternatives in different ways that were related to changes in instream flows and Delta outflows.

In addition to these actions, this Decision provides supplementary actions that will more adequately meet the objectives of section 3402 (a) and (b) mentioned above. These actions provide for additional San Joaquin River tributary and mainstem flows, and more effective and efficient implementation of the Anadromous Fish Restoration Program [3406(b)(1)] and the Land Retirement Program [3408(h)].

Additional San Joaquin River Tributary and Mainstem Flows: Providing additional flows in the San Joaquin River tributaries and mainstem will improve instream conditions, and in many cases, the aquatic conditions in the Delta. Increased flows will increase instream and Delta habitat values for many aquatic species, including anadromous fish.

Anadromous Fish Restoration Program: Implementing the AFRP, as identified in this Decision, will provide more effective and efficient restoration and enhancement for anadromous fish because the Decision specifically provides for adaptive management of the Program. Appropriate monitoring, including use of CAMP, in this adaptive management effort will provide the most appropriate restoration possible consistent with reasonable assumptions in analyses of the CVPIA PEIS. Additionally, the Revised Draft Restoration Plan used to implement the AFRP received major public review and comment beyond that for the Final PEIS.

Land Retirement Program: The restoration and enhancement of retired lands will be more appropriate and efficient after completion and incorporation of the Demonstration Study results as provided in this Decision. This will provide greater success in restoration efforts and may

provide a savings, which could allow for an expansion of the Land Retirement Program with subsequent additional NEPA as appropriate.

The degree to which the Final PEIS alternatives improved conditions for fish, wildlife, and associated habitats varied with specific elements of the alternatives, but all alternatives and this Decision meet a basic objective for improvement of these resources. The alternative which resulted in the greatest benefit for fish and wildlife was Alternative 4 because it would have acquired the greatest amount of water to increase instream flows and Delta outflows. However, the large amount of acquired water in Alternative 4 would not be consistent with reasonable assumptions in analyses of the CVPIA PEIS.

Improvements to Operational Flexibility [Section 3402 (c)]: Improvements to operational flexibility as addressed in section 3402(c), to meet all purposes of the CVP, are difficult to define. The purposes of the CVP include irrigation and domestic water supply; mitigation, protection, and restoration of fish and wildlife; power generation; flood control; recreational opportunities; navigation on the Sacramento River; and fish and wildlife enhancement. Each of these purposes could require different operational criteria which may result in conflicts, as well as both beneficial and adverse impacts. For example, reservoir releases in the fall to provide storage for flood control would increase flood control flexibility, but would also decrease water storage which may be needed later in the year for deliveries to agricultural and urban water users, to meet downstream fish and wildlife needs, or for power generation during the next summer if precipitation is low.

Irrigation and Domestic Water Supply and Power Generation: Under this Decision, and the alternatives in the Final PEIS, the overall flexibility of CVP water supply operations for irrigation and domestic water supply and power generation are reduced as a result of efforts to achieve a reasonable balance among competing demands for all uses of CVP water [section 3402(f)]. When compared to the existing condition, its important to note many water supply-related impacts occurred as a result of assumptions in the No Action Alternative.

Operational flexibility, with respect to water supplies and power generation, was severely reduced under the No-Action Alternative as compared to recent conditions, due to non-CVPIA actions. Recent requirements established through the winter-run chinook salmon and Delta smelt biological opinions and through the Bay-Delta Plan Accord, reduced operational flexibility to provide improvements in water quality and fish and wildlife habitat. Operational flexibility was further reduced under the No-Action Alternative due to the requirement for delivery of water from CVP-controlled streams to water rights users. Diversions for water rights holders are projected to increase by more than 200,000 acre-feet of water over recent conditions, as described in the Pre-CVPIA Conditions and No-Action Alternative technical appendices. The projected increases in diversions would primarily be used for municipal uses, which would change the storage and release patterns from the reservoirs. As discussed in the Pre-CVPIA Conditions and Surface Water and Facilities Operations technical appendices, under the No-Action Alternative, delivery of CVP water to water service contractors in many months in drier

water years is incidental to operations for the Bay-Delta Plan Accord, biological opinions, water rights holders, water rights contractors, and water rights exchange contractors.

Although overall flexibility of CVP water supply operations are reduced further, when compared to the No Action Alternative, water delivery impacts are minimized in Final PEIS analyses, to the greatest extent possible, using available hydrologic models in an iterative manner.

Within Final PEIS alternatives, modeled instream flow releases from CVP reservoirs were not specific enough to provide power generation operations on an hourly time step, the level necessary to adequately optimize CVP power generation. As a result, Final PEIS alternatives did not attempt to quantitatively optimize CVP power generation. Because the instream flow releases from CVP reservoirs are similar in this Decision and Final PEIS alternatives, CVP generation is considered similar in all.

The greatest amount of water supply operational flexibility in Final PEIS alternative analysis occurred in Alternative 3 because this alternative acquired the largest amount of water for instream flows and allowed export of this water to users located south of the Delta. However, the large amount of acquired water in Alternative 3 would not be consistent with reasonable assumptions in analyses of the CVPIA PEIS, and export of all of the acquired water could result in more adverse impacts to fish in the Delta than under any of the other Final PEIS alternatives. This Decision provides the most operational flexibility while minimizing adverse impacts to Delta fisheries within the funding limits of the CVPIA.

Fish and Wildlife Protection, Restoration, Mitigation, and Enhancement: This Decision and other alternatives in the Final PEIS improve operational flexibility for fish and wildlife. The Decision provides the greatest improvement consistent with reasonable assumptions in analyses of the CVPIA PEIS, based on increased flows in the San Joaquin River tributaries and mainstem and improved efficiency and effectiveness in implementing the Anadromous Fish Restoration and Land Retirement programs. Other alternatives in the Final PEIS improved conditions to varying degrees depending upon the methods used to increase instream flows and Delta outflows.

Flood Control and Navigation: This Decision, the Preferred Alternative, and other Final PEIS alternatives do not attempt to change flood control or navigation criteria used for CVP operations because these criteria are established through separate processes which involve evaluation of public safety by Federal and State agencies. This Decision, like the other alternatives in the Final PEIS, does not change existing operational flexibility for flood control or navigation. However, implementing this Decision will tend to improve the overall flood control capability of CVP reservoirs by lowering their end of September storage levels, reducing summer releases necessary to evacuate flood control storage, and reducing the frequency of snow-melt induced flood control releases. Reductions in storage may result in impacts to CVP contract deliveries and instream fisheries habitat during some periods for some species in some rivers. Navigation on the Sacramento River will not be affected as minimum requirements are met in all alternatives and this Decision.

Recreational Opportunities: This Decision and other Final PEIS alternatives improved recreational opportunities associated with birdwatching and hunting at refuges and fishing in rivers, streams, and in the ocean. Recreational opportunities at refuges associated with the CVPIA would be the same under this Decision, the Preferred Alternative, and Alternatives 2, 3, and 4, because they provide levels 2 and 4 refuge water supplies.

Recreational opportunities at CVP controlled reservoirs would slightly decrease as surface elevations would fall below the levels at which recreation opportunities become constrained more often during peak- and off-season periods. Lower surface elevations would decrease recreation opportunities by limiting the availability of boat ramp access and reducing the reservoir's surface elevation below the level at which boating becomes constrained and shoreline activities decrease. Recreational opportunities at Lake Oroville would increase as surface elevations would generally be maintained at higher levels during peak- and off-season periods. Higher surface elevations would benefit recreation opportunities by increasing the availability of boat access and maintaining the lake level above the level at which boating becomes constrained and shoreline activities decrease.

The flows on the American River, below Nimbus Dam, would increase and more frequently fall within the optimal range for all boating activities. However, these increased flows would more frequently cause a decrease in optimal conditions for swimming.

The maximum improvement for recreational opportunities is under Alternative 4 because, in addition to the provision of levels 2 and 4 refuge water supplies and implementation of the Habitat Restoration Program, improvements to fishery conditions are the greatest of all the alternatives considered as a result of increased acquired water and restrictions on its pumping in the Delta. However, the large amount of acquired water in Alternative 4 would not be consistent with reasonable assumptions in analyses of the CVPIA PEIS. Since this Decision provides the greatest benefit for fish, wildlife, and habitats within reasonable assumptions of the CVPIA PEIS, it also provides the greatest recreational opportunities within those assumptions.

Improved Benefits due to Water Transfers and Water Conservation [Section 3402(d)]:

This Decision and all alternatives in the Final PEIS include water conservation for municipal and on-farm uses as assumed in DWR Bulletin 160-93; and conservation plans completed under the 1982 Reclamation Reform Act with implementation of all cost-effective Best Management Practices that are economical and appropriate, including measurement devices, pricing structures, demand management, public information, and financial incentives. Possible benefits include more accurate tracking of water use, water conservation, and reduced agricultural drainage.

This Decision and the Preferred Alternative in the Final PEIS includes water transfers under the CVPIA for municipal and agricultural purposes. Supplemental Analyses 1e, 1f, 2b, 2c, 3a, and 4a included the same water transfer considerations as this Decision and the Preferred Alternative. Individual water transfers would be considered on a site-specific basis, for which separate environmental documentation would be completed. It was assumed that water transfers would not impact ongoing water supply operations of the CVP or other water purveyors, or if impacts

did occur, they would be mitigated. The analyses indicate that a water market exists for transferred water and that water transfers would occur with or without the CVPIA. The analyses shows that if transfers occur under the CVPIA, the demand would not change but would be met more frequently by the sale of water from CVP users as well as from water rights holders to improve water supply reliability of water buyers. The analyses also indicate that if additional charges are added to the transferred CVP water, the transfer market would be limited.

Contribute to Protection of the Bay-Delta Estuary [Section 3402(e)]: This Decision will, as would Final PEIS alternatives, contribute to improvement of water quality and biological conditions in the Bay-Delta estuary, as provided under section 3402(e), due to reoperation of the CVP provided under section 3406(b)(1)(B) and use of (b)(2) water. Additionally, this Decision will, as would Final PEIS alternatives, provide for additional benefits through the application of supplemental water acquired under section 3406(b)(3). The greatest improvement would occur under Alternative 4 because this alternative acquired the largest amount of water for increasing instream flows and Delta outflows. However, the large amount of acquired water acquired in Alternative 4 would not be consistent with reasonable assumptions in analyses of the CVPIA PEIS. This Decision provides the greatest benefit for fish, wildlife, and habitat in the Delta, consistent with reasonable assumptions in analyses of the CVPIA PEIS, as a result of increased San Joaquin River flows into and potentially through the Delta, and a more effective and efficient AFRP.

Achieving a Reasonable Balance Among Competing Demands for CVP Water [Section 3402(f)]: Achieving a reasonable balance among competing uses is a principal purpose of the CVPIA, as provided under section 3402(f). Each Final PEIS alternative combined various elements that modified this balance to some degree, thereby providing the decision maker a reasonable range of choices based on analyses in the Final PEIS and associated public involvement. Supplemental Analysis 4a provided the greatest balance between competing demands because water transfers to Interior would provide improved instream and Delta aquatic habitat conditions, and water transfers to municipal and agricultural users would allow users to meet water demands if the water prices are appropriate. However, Supplemental Analysis 4a would not be consistent with reasonable assumptions in analyses of the CVPIA PEIS. This Decision provides the greatest level of a reasonable balance among competing demands because it renews CVP contracts and provides for increased instream flows and Delta outflows, refuge water supplies, and water transfers consistent with reasonable assumptions in analyses of the CVPIA PEIS.

FUND AVAILABILITY AND COST EVALUATION

Assumptions regarding the general need and availability of funds to implement actions and programs of the CVPIA were included in the analysis of the Final PEIS. A comparison of the costs for implementing those actions and programs is provided in Table 2.

Table 2. Estimated Annual Alternative Implementation and Impact Costs in California

Alternative	Implementation Cost (millions)	Reduction in Place-of-Work Income (millions)	Reduction in Output for all Sectors (millions)	Job Losses
Alternative 1	\$74	\$80	\$183	2,790
Alternative 2	\$84	\$100	\$241	3,550
Preferred Alternative	\$90	\$106	\$223	2,720
Alternative 3	\$148	\$27	\$143	2,060
Alternative 4	\$148	\$195	\$457	6,540

Note:

- (1) Impact and costs for this Decision are within the analyses of the CVPIA PEIS and are projected to be slightly greater than those identified for the Preferred Alternative.
- (2) All estimates are annual averages of the total direct, indirect, and induced impacts found in Chapter IV of the PEIS.
- (3). Reductions in Place-of-Work Income contains costs associated with M&I water deliveries.

Estimated Alternative Funding Needs

Alternative implementation funding needs were established by first developing cost estimates for implementing baseline fish and wildlife restoration actions as provided in section 3406(b) and partially listed in Attachment F. These funding needs would then be met, as possible and appropriate, using combinations of funding statutorily available through the CVPIA and/or estimated to be available through Congressional appropriations.

Estimated Available Funding

For many of the non-flow restoration actions in the Preferred Alternative, it was assumed the following fund sources and amounts were available: 1) application of the long-term collection of an average annual total of up to \$50 million/year (1992 dollars), as provided in section 3407, and placed into the Restoration Fund; application of state funds provided to meet cost share requirements outlined in the CVPIA (approximately \$18 million annually), and 3) application of other federal funds whose availability was determined to be reasonable (approximately \$22 million annually). Other mixes of funding were provided for other alternatives in Table II-10 of the CVPIA Final PEIS. All fund sources will require appropriation by the appropriate state or federal governing body. This decision should not be construed to limit the amount of funds necessary or otherwise available to implement this Decision.

Because other federal, state, and local programs are currently evaluating projects similar to programs included in PEIS alternatives, the total funds available through all sources may be greater than \$50 million/year assumed to be provided by the Restoration Fund. Assumptions within the analyses of the CVPIA PEIS identified a total funding capability of about 100-200

million/year, “available” to fund those projects or portions of projects to be funded by the “Restoration Fund.”

Estimated Implementation Impact Costs

The impact of implementing alternatives identified in the CVPIA PEIS was calculated and provided in several places within that document, most notably Chapter IV, Environmental Consequences. Comparison of that information, reasonable estimates of funding availability, the above information on the costs of the alternatives, and, first and foremost, each alternative’s ability to meet the purposes of the CVPIA, were considered in this Decision.

COMPLIANCE WITH THE FEDERAL ENDANGERED SPECIES ACT

Reclamation and the Service have completed consultations with the Service and the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act, addressing potential effects to those listed species that may be affected by this Decision. As a result of these formal consultations, both the Service and NMFS have indicated that the proposed action (Decision) would not jeopardize the existence of any listed species or adversely modify designated critical habitat. These determinations are based in part upon the following:

- commitment of Reclamation to operate the CVP consistent with existing biological opinions which address water operations;
- commitment of Reclamation and the Service to implement all actions described in the Project Description of the biological opinion for implementing the CVPIA (file 1-1-98-F-0124) in their entirety.
- commitment of Reclamation and the Service to continue the fish and wildlife protection, restoration, and enhancement efforts identified in the No Action Alternative of the Final PEIS;
- implementation of CVPIA programs in a manner that either directly or indirectly addresses many of the needs of listed species; and
- commitment of Reclamation and the Service to consult on any programs/activities associated with implementation of the CVPIA that may affect listed species.

COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT

Reclamation or the Service, pursuant to 36 CFR 800.8, have, and will continue to coordinate compliance of Section 106 of the National Historic Preservation Act with the requirements of the National Environmental Policy Act (NEPA) for actions covered by the CVPIA with the requirements of Subpart B of 36 CFR 800, and as part of this process of coordination, used the NEPA process and associated documentation to supplement compliance with Subpart B. At the planning stage for any action comprising an undertaking, Reclamation or the Service will determine and document an area of potential effects (APE) in accordance with the definition set forth in 36 CFR 800.16 (d). Reclamation or the Service will consult with the California State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation

(Council) pursuant to regulations implementing Section 106 (36 CFR 800) of the National Historic Preservation Act (16 U.S.C. 470f) to resolve any adverse effects of each undertaking on historic properties within the APE, except for those provided for under prior agreement.

SUMMARY

The No Action Alternative was not a feasible alternative because it would not meet the purposes of the CVPIA as defined in section 3402. The No-Action Alternative is only used as a basis for comparison of other alternatives and includes projects and policies that would either be impacted by the CVPIA or that would impact implementation of the CVPIA.

Alternative 1 through 4 were not chosen for implementation because they did not provide the greatest benefits for fish and wildlife, the greatest improvement to operational flexibility, or the greatest level of a reasonable balance among competing demands for CVP water consistent with reasonable assumptions in the analyses of the CVPIA PEIS

Of all alternatives in the Final PEIS, the Preferred Alternative in the Final PEIS provided the greatest benefit for fish and wildlife, consistent with reasonable assumptions in the analysis of the CVPIA Final PEIS. The Preferred Alternative was defined in response to results of the Draft PEIS analyses, public comments received on the Draft PEIS and the supplement to the Draft PEIS, public comments received on related Administrative Proposals, and results of interim implementation of several CVPIA provisions. The Preferred Alternative was constructed to implement the CVPIA in a manner that best balances environmental benefits, affordability, and technical feasibility. By increasing the overall water-related benefits provided by CVP and by addressing impacts of the CVP on fish and wildlife resources, the Preferred Alternative would also contribute to the overall economic and environmental sustainability of California. Implementation of the CVPIA would result in a variety of impacts to the regional economy and social conditions in a large area of California. The Preferred Alternative did not include provisions that would either clearly exceed reasonable assumptions in the analyses of the CVPIA PEIS or require additional Congressional authorization.

This Decision builds on the Preferred Alternative by increasing flows in the San Joaquin River, improving efficiency and effectiveness of the AFRP through adaptive management, and by providing a Land Retirement Demonstration Study that will result in more effective and efficient implementation of the long term Land Retirement Program. This Decision provides the greatest benefit for fish and wildlife, within the funding limits of the Act, including the following:

- The combined effects of increased instream flows, lower instream water temperatures, habitat restoration, and structural improvements will improve food web and habitat quality and quantity, improve fish passage and access, reduce water diversion effects, and increase anadromous fish survival in Central Valley rivers, their tributaries, and the Delta.

- Level 2 water deliveries will improve wetland management for water birds and shore birds. Additional wetland management improvements will occur as a result of water acquisition under section 3406(b)(3), and minor wetland benefits will occur as a result of changes in river hydrologies associated with anadromous fish restoration efforts.
- Retirement of agricultural land will improve the distribution and number of common wildlife, provide potential habitat for special-status species associated with grassland and alkali desert scrub habitats, and will reduce the use of herbicides and insecticides on these lands which will provide additional benefits to fish and wildlife.
- Increased spring flows on the tributaries to the San Joaquin River will improve riparian habitat for riparian-dependent species along the San Joaquin River, and riparian restoration on the Sacramento and San Joaquin rivers and their tributaries will improve habitat for dependent common and special-status fish and wildlife species.
- Implementation of the (b)(1) “other” Program will provide additional restoration and enhancement actions for species and habitats impacted by the CVP and not specifically addressed in section 3406 of the CVPIA.

This Decision also improves operational flexibility, and will improve water quality and biological conditions in the Bay-Delta due to CVP reoperation, (b)(2) water management, and acquisition of supplemental water for fish and wildlife under section 3406(b)(3) as provided under section 3402(e). This Decision provides the greatest level of a reasonable balance among competing demands for CVP water because it provides increased instream flows and Delta outflows, refuge water supplies, and water transfers consistent with reasonable assumptions in analyses of the CVPIA PEIS, while minimizing, as possible, impacts to CVP deliveries and power generation.

VI. IMPACTS AND MITIGATION

This Decision was determined to have the following impacts, briefly described below within appropriate resource and issue areas listed in the Final PEIS. These impacts and mitigation measures were listed on table II-16 in the Final PEIS. Many of these impacts could be mitigated by avoiding, minimizing, rectifying, reducing or eliminating, or compensating for the impacts.

SURFACE WATER SUPPLIES AND FACILITIES OPERATIONS

Impact –Reduction in CVP water service deliveries. The Final PEIS discusses reduction in CVP water service deliveries in the Surface Water Analysis. Implementation of the operational measures in the CVPIA will result in less water being available to water service contractors due to dedication of water to fish and wildlife restoration.

As discussed in Chapter IV of the CVPIA PEIS, the impacts may be reduced if methods to increase the CVP yield are implemented, consistent with the *Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*, released on October 5, 1999,

including possible recommendations developed under section 3408(j)⁴ of the CVPIA, and concepts such as those discussed in the December 29, 1999, California State Water Resource Control Board's Revised Water Right Decision 1641⁵.

Finding. Reclamation and the Service find this impact to be significant and support continued evaluation and appropriate implementation of many of the measures mentioned above. When and if these are developed and implemented, they could substantially lessen the impacts to CVP water supplies. The results of implementing such measures as identified in the Final PEIS, depending on method of replacement, will provide some degree of impact reduction by increasing available water supplies to CVP users. The extent of reduction in impacts to CVP water supplies will depend on many factors, including the availability of funds, authorization⁶, and level of participation from non-federal entities. While not mitigation for this Decision, the CALFED Program may also help lessen the impacts to CVP water service deliveries through completion and implementation of the Framework Agreement⁷.

⁴ The Administrative Final Least-Cost CVP Yield Increase Plan [section 3408(j)] includes the following methodologies to increase CVP yield and/or lessen impacts to CVP users:

- management of water demand through such things as modified agricultural cropping, improved irrigation performance, drainwater reclamation, canal lining and piping, spill reduction, installation of non-leak gates, and appropriate riparian vegetation removal;
- urban water reuse;
- additional surface water storage and conveyance;
- increased conjunctive use;
- weather modification and snowpack management;
- desalination; and
- water importation.

⁵ The December 29, 1999, California State Water Resource Control Board's Revised Water Right Decision 1641 includes decisions on the following:

- implementation of Water Quality Objectives for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary;
- petition to Change Points of Diversion of the Central Valley Project and the State Water Project in the Southern Delta; and
- petition to Change Places of Use and Purposes of Use of the Central Valley Project

⁶ "Authorization" here and in similar statements throughout this Decision refers to additional Congressional authorization as would be necessary to take an action and aligns with the statement on page 25, that the "Preferred Alternative in the Final PEIS did not include provisions that would either clearly exceed the reasonable assumptions in analyses of the CVPIA PEIS or require additional Congressional authorization."

⁷ Framework Agreement (CALFED's Water Future: A Framework for Action) - California's Governor Gray Davis and U.S. Interior Secretary Bruce Babbitt released the CALFED Bay-Delta Program (CALFED) Action Plan on June 9, 2000. This framework document, the result of extensive negotiations, will include a broad array of water management and ecosystem restoration proposals.

Impact–Reductions in State Water Project (SWP) deliveries. The Final PEIS discusses a slight reduction in SWP water service deliveries in the Surface Water Analysis. Implementation of operational measures in the CVPIA may result in reductions in SWP deliveries in some years due to assumed SWP cooperation in decreasing Banks Pumping Plant exports to meet the San Joaquin River Agreement, and as identified in the *Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*, released on October 5, 1999. The amount and frequency of the reduction in SWP deliveries depends on the level of cooperation undertaken by the SWP.

The impacts can be mitigated by implementing concepts such as the “Joint Point of Diversion”⁸ and/or water purchases.

Finding. Reclamation and the Service find measures like those mentioned above to be feasible and may substantially lessen impacts to SWP water supplies. The extent of the reduction in impacts to SWP water supplies will depend on many factors, including the availability of funds, authorization, and level of any necessary non-federal participation. Additionally, while not mitigation for this Decision, the CALFED Program may also help lessen the impacts to SWP water service deliveries through actions identified in the CALFED ROD, issued August 28, 2000.

GROUNDWATER

Impact–Reduction in groundwater levels and associated increase in land subsidence. Implementation of this Decision will result in a greater dependency on groundwater supplies by CVP water service contractors. The increased dependency on groundwater will result in increased rates of groundwater overdraft in some areas of the Central Valley, resulting in increased rates of subsidence along the western edge of the Central Valley.

The impacts might be reduced by implementing methods to increase supply, including possible recommendations developed under section 3408(j) of the CVPIA, concepts such as “Joint Point of Diversion” and assisting in the development of groundwater management plans. In areas with subsidence, affected structures and grading may need to be modified for impacts which can occur in addition to ongoing subsidence rates under pre-CVPIA conditions.

Finding. Reclamation and the Service find this impact to be significant and support continued evaluation and the possible implementation of many of the appropriate impact reduction measures mentioned above. When and if these measures are developed and implemented, they could avoid or substantially lessen impacts to groundwater and land subsidence. The impacts, depending on actions taken, may be reduced by improving surface water supply reliability as provided by actions in the CVPIA, by CALFED, and by

⁸ “Joint Point of Diversion” is the joint use of each other's points of diversion of water in the southern Delta by the California Department of Water Resources and U.S. Bureau of Reclamation.

improved groundwater management. The extent of the reduction in impacts to groundwater will depend on many factors, including the availability of funds, authorization, and level of necessary non-federal participation.

FISHERY RESOURCES

Impact–Increased temperatures in the American River. Implementation of this Decision will result in lower average storage elevations in Folsom Reservoir. The lower storage will result in higher temperatures in downstream releases and impacts upon the fishery.

These impacts can be mitigated by modifying the outlet works on Folsom Dam.

Finding. Reclamation and the Service find this mitigation measure to be feasible and will avoid or substantially lessen the environmental impacts on American River water temperatures from implementing this Decision. The impacts will be mitigated by improved control of downstream temperatures, facilitated by greater selection of outlet releases. Planning activities for the outlet modification are currently underway by Reclamation.

Impact--Increased temperatures in the Sacramento River. Implementation of this Decision will increase the frequency of exceeding temperature requirements for the winter-run chinook salmon during drier years.

Finding. Reclamation and the Service have determined this impact will be addressed through compliance with the Biological Opinion provided to Interior by the National Marine Fisheries Service associated with Section 7 consultation under the Federal Endangered Species Act.

Impact–Reduction in Sacramento River flows. Implementation of this Decision will change flow patterns in the Sacramento River. Because limited water supplies exist in the basin, this Decision focuses Sacramento River flow patterns in a manner resulting in possible adverse affects on spring-run chinook salmon.

Finding. Reclamation and the Service have determined this impact will be addressed through compliance with the Biological Opinion provided to Interior by the National Marine Fisheries Service associated with Section 7 consultation under the Federal Endangered Species Act.

AGRICULTURAL ECONOMICS AND LAND USE

Impact–Reduction in irrigated acreage within the Central Valley. Implementation of this Decision will result in a total reduction in irrigated acreage of approximately 54,000 acres: an approximate 45,000 acre reduction in the Central Valley (less than 1-percent), and an

approximate 9,000 acre reduction (about 9-percent) in lands irrigated by water from all sources in San Benito and Santa Clara counties.

Finding. Reclamation and the Service find no practicable measures exist to mitigate for this impact. However, some of the effects of this reduction will be substantially lower than might be expected because a major portion of the reduced acreage is a result of land acquisition, from willing sellers, under the Land Retirement Program.

Impact–Orchard damage along the Stanislaus River. Implementation of this Decision will result in a greater frequency of flows above 1,500 cfs in the lower Stanislaus River which may cause groundwater elevation and root rot to trees located along the river.

These impacts, if they occur, can be mitigated by obtaining an easement that addresses the high ground water impact in the potential damage areas.

Finding. Reclamation and the Service find this mitigation measure to be feasible. When developed and implemented, these efforts will mitigate, as appropriate, for the impacts of this Decision on orchards along the Stanislaus River by obtaining easements to offset crop losses, as appropriate.

CENTRAL VALLEY PROJECT POWER RESOURCES

Impact–Reduction in CVP power generation, shift of power generation to months where the value of power is lower, and an increase in the total cost of power. Implementation of this Decision will result in a reduction of CVP power generation during peak power demand periods in summer months. This may result in the need for the Western Area Power Administration to purchase power to meet Preference Power Customer’s needs.

Finding. Reclamation and the Service find there is no practicable mitigation measure for these impacts.

RECREATION

Impact–Potential periodic reductions in boating and shoreline use opportunities in portions of Shasta Lake, Folsom Reservoir, and New Melones Reservoir. Implementation of this Decision will result in reduced reservoir levels, especially in critical years. These reduced reservoir levels will adversely impact use of boat ramps and shore facilities.

These impacts can be reduced by constructing or extending boat ramps and facilities for beach use, dependent upon the availability of funds.

Finding. Reclamation and the Service find this measure to be feasible and will reduce or substantially minimize impacts to reservoir boating and shoreline use. The impacts can

be reduced by extending boat ramps and moving shoreline structures in drier years as funding and authorization become available.

Impact–Potential periodic reductions in swimming opportunities in the American River below Nimbus Dam. Implementation of this Decision will result in increased flows during several months with increased velocities that would make swimming dangerous.

Finding. Reclamation and the Service find there is no practicable mitigation measure for these impacts at this time. By participating in recreational planning and implementation efforts on the American River, Interior may help substantially minimize these impacts to American River swimming opportunities below Nimbus Dam.

REGIONAL ECONOMICS

Impact–Additional charges to CVP water and power users due to Restoration Fund collection. The Final PEIS discusses changes in user charges and their impacts in the Agricultural Economics and CVP Power analyses. Implementation of the Decision to collect Restoration Fund charges would result in increased costs for CVP water and power supplies. Assuming Congressional appropriation, additional charges would total \$30 million per year on a 3-year rolling average. The additional charge would be divided between water and power users, and would vary based upon the amount of CVP water supplies available.

Finding. Reclamation and the Service find this impact significant and unavoidable. The CVPIA requires the collection of additional charges to assist in the funding of the Restoration Fund.

MOSQUITOS

Impact–Potential increase in mosquito abundance. Implementation of this Decision will increase wetland areas in the Central Valley which may result in an increased mosquito population.

These impacts can be mitigated with the provision of additional abatement actions by existing mosquito abatement districts in the Central Valley. Additionally, refuge operations are typically managed to assist in the control of mosquitos.

Finding. Reclamation and the Service find these mitigation measures to be feasible and will avoid or substantially minimize, as appropriate, the impacts of any associated possible increase in mosquito abundance. The impacts will be reduced or removed by mosquito abatement districts in the Central Valley continuing to carry out abatement controls in their local area in accordance with existing agreements and requirements with wetland managers for National Wildlife Refuges and State Wildlife Management Areas.

SOCIAL CONDITIONS

Impact–Reduction in agricultural related jobs due to reduction in irrigated acreage. Implementation of this Decision may result in less agricultural productivity, for a variety of reasons, leading to a possible reduction in agricultural related jobs.

These impacts might be reduced by providing job training, dependent upon the availability of funds and authorization.

Finding. Reclamation and the Service find these sorts of measures to be feasible. When and if developed and implemented, they could reduce, eliminate, or substantially minimize impacts to agricultural jobs. The extent of the reduction in impacts to agricultural jobs, as can be provided by job training, is dependent on many factors, including the identification and availability of funds, authorization, and level of participation.

CULTURAL RESOURCES

Impact–Increase in potential for disturbance to Cultural Resources due to increased exposure and recreational opportunities at refuges. Implementation of this Decision could result in increased visitor use at refuges which may increase the potential for vandalism to cultural resources.

Because National Wildlife Refuges are already required to comply with Federal laws protecting cultural resources, these impacts will be mitigated as appropriate. If necessary, additional measures will be developed per Section 106 of the National Historic Preservation Act in consultation with the Advisory Council on Historic Preservation and State Historic Preservation Officer.

Finding. Reclamation and the Service find this mitigation measure to be feasible and will avoid or substantially minimize impacts to cultural resources. The impacts can be mitigated by reducing access, as appropriate, to critical areas of a refuge, or other actions as required by appropriate Federal legislation.

VII. IMPLEMENTING THE DECISION AND ENVIRONMENTAL COMMITMENTS

Reclamation and the Service have adopted all feasible and reasonable means to avoid or minimize adverse environmental impacts from implementing the CVPIA as outlined in this Decision. The CVPIA, as provided in sections 3406(a) and 3406(b)(1), in and of itself, was enacted in large part to address the fish and wildlife impacts of the CVP. Because it is the intent of the CVPIA, among other purposes (3402), to protect, restore and enhance fish, wildlife and associated habitats; and provide a reasonable balance among competing demands for the use of

CVP water, including the requirements of fish and wildlife, agriculture, municipal and industrial and power contractors; Reclamation and the Service commit to full implementation of the CVPIA, as elaborated in this Decision, in a manner providing the greatest benefits for fish, wildlife, and associated habitats consistent with reasonable assumptions in analyses of the CVPIA PEIS.

Table II-16 of the Final PEIS summarizes potential mitigation measures that could be implemented to reduce adverse impacts of implementing the CVPIA, and Reclamation and the Service commit to participation in processes, either as a result of implementing the CVPIA or in related programs, that attempt to lessen these listed impacts. Because this is a programmatic Decision, appropriate mitigation for specific actions and programs will be developed as those actions and programs are implemented. Subject to appropriation of funds, impact-specific Mitigation Measures and Environmental Commitments for this Decision are as follows:

SURFACE WATER SUPPLIES AND FACILITIES OPERATIONS

Reclamation and the Service commit that reductions in SWP deliveries, as a result of implementing section 3406(b)(2) actions, will not be permitted to adversely affect the State Water Project (SWP), operated by DWR, and any adverse impacts will be made up through implementation of the “Joint Point of Diversion” water purchases and exchanges.”

FISHERY RESOURCES

- Reclamation commits to mitigating the increased temperature in the American River by modifying the outlet works on Folsom Dam, as authorized by Congress.
- Reclamation and the Service commit to addressing temperature impacts on listed anadromous fish species in the Sacramento River through compliance with the Biological Opinion provided to Interior by the National Marine Fisheries Service associated with Section 7 consultation under the Federal Endangered Species Act.
- Reclamation and the Service commit to addressing flow impacts on listed anadromous fish species in the Sacramento River through compliance with the Biological Opinion provided to Interior by the National Marine Fisheries Service associated with Section 7 consultation under the Federal Endangered Species Act.

AGRICULTURAL ECONOMICS AND LAND USE

Reclamation and the Service commit to mitigating orchard damage along the Stanislaus River by obtaining easements to offset crop losses, as appropriate.

MOSQUITOS

Interior commits to a process that will mitigate, as appropriate, potential increases in mosquito abundance on National Refuges by working with appropriate mosquito abatement districts that carry out abatement controls in their local areas in accordance with existing agreements and commits to work with managers for State Wildlife Management areas as appropriate.

CULTURAL RESOURCES

Reclamation and the Service will mitigate any possible impacts to cultural resources through the identification of adverse effects and compliance with existing Federal law, regulations, and prior agreements. Reclamation and/or the Service will consult with the State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation to identify and implement any required mitigation measures.

MISCELLANEOUS COMMITMENTS

Reclamation and the Service commit to evaluating other identified impacts resulting from implementing this Decision and reasonable and appropriate actions that help to reduce these impacts will be implemented as authorization, funding, and participation by non-federal partners becomes available.

Mitigation Measures and Environmental Commitments for long-term management of CVPIA implementation associated with this Decision are as follows:

THREATENED AND ENDANGERED SPECIES

Reclamation and the Service commit to continued implementation of fish and wildlife mitigation, restoration, and enhancement programs, actions, and projects listed as part of the Project Descriptions for existing processes and this Decision, including, but not limited to, commitments made during Section 7 Consultations in the *Biological Opinion Addressing Operations of the CVP and Implementation of the CVPIA* from the Service (CVPIA, Service File #1-1-98-F-0124, dated November 22, 2000) and the *Biological Opinion for Implementation of the CVPIA* from the NMFS (dated, November 14, 2000). Additionally, it is understood that all actions to implement the CVPIA will include diligent consideration of the needs for special-status species and will adhere to all requirements of the Endangered Species Act.

ADAPTIVE MANAGEMENT PROGRAM

Reclamation and the Service commit in this ROD to use an Adaptive Management Program, using information collected from multiple sources, to evaluate the effectiveness of actions designed to restore and enhance anadromous fish, wildlife, and associated habitats, and to help make needed adjustments to those actions and improve program results so that the purposes of CVPIA can be achieved. Multiple monitoring processes will be used to collect and analyze data to determine the success of implementing the CVPIA including:

- CVPIA action-specific monitoring, to assess an individual actions results and effectiveness;
- ecosystem-level monitoring provided under section 3406(b)(16), the Comprehensive Assessment and Monitoring Program (CAMP), to assess overall effectiveness of actions and categories of actions under section 3406(b); and
- monitoring data from many related efforts including the Comprehensive Monitoring, Assessment and Research Program (CMARP), developed for CALFED and the Interagency Ecological Program (IEP), a consortium of 9 state and Federal agencies developed to provide information on factors affecting ecological resources in the Sacramento-San Joaquin Estuary that will allow for its more efficient management.

This information will be used to modify, if necessary, the actions associated with implementing this Decision. For example, the Anadromous Fish Restoration Program will be reviewed and revised, if necessary, every five years to assure better alignment with its goals and objectives and to allow Interior to meet the purposes of the CVPIA.

MITIGATION AND ENVIRONMENTAL COMMITMENTS MONITORING AND ENFORCEMENT

A Mitigation and Environmental Commitments Monitoring and Enforcement Plan will be jointly developed by Reclamation and the Service after signing this Decision that will ensure identified measures are accomplished, including those identified as a result of Section 7 consultations under the Endangered Species Act. This plan will include the following:

- A summary of appropriate mitigation measures, including environmental mitigation and enhancement, associated with this Decision.
- An Environmental Commitments Program including Environmental Commitment Plans (ECP); if necessary, a program for managing the outcome of the Decision; environmental commitment checklists (ECC), and post activity environmental commitment summaries.
- Actions Reclamation and the Service will take if monitoring shows mitigation and environmental commitments are inadequate or unsuccessful.

FISH AND WILDLIFE COORDINATION ACT

Because this Decision was not specifically an alternative in the PEIS, the existing understanding in that document between the Service and Reclamation, relative to consultation under the Fish and Wildlife Coordination Act (FWCA), is supplemented by Attachment A. No further consultation is necessary under the FWCA for actions and programs identified in the PEIS at this programmatic level. It is understood future coordination and consultation under the FWCA will be completed as required for tiered actions.

VIII. COMMENTS RECEIVED ON THE FINAL PEIS

Reclamation and the Service have received no formal comments on the Final PEIS.

IX. PUBLIC INVOLVEMENT

The issues addressed by the CVPIA are complex and often interrelated. To ensure constructive public input, a substantial public involvement program was provided to educate the public about water issues, CVP operations, instream flow management, fish species behavior, habitat management, CVPIA provisions, pricing and repayment policies, and the potential effects of the CVPIA. This public involvement process was divided into four phases: scoping, project development, alternatives refinement with ongoing project development, and preparation of the Draft and Final PEIS's. These phases included a host of public involvement "tools", including meetings, workshops, and briefings; release of information materials, including plans, reports, booklets, briefing packets, and a periodic newsletter; and on-going activities, including a 24-hour telephone message line, an Internet website, mailing lists, and media relations.

X. CONCLUSION

In view of the proceeding discussion, we find that any adverse effects of implementing the Decision have been avoided and/or minimized to the extent practicable, and this Decision best meets the overall objectives and is consistent with the legislated mandate of the CVPIA. Implementation of this Decision is consistent with all applicable laws, regulations, national policy, administrative directives, and is in the overall public interest.

ATTACHMENT A

FISH AND WILDLIFE COORDINATION ACT REPORT

RECORD OF DECISION

CENTRAL VALLEY PROJECT IMPROVEMENT ACT

**FINAL PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT**