

Department of the Interior
DECISION ON IMPLEMENTATION OF
SECTION 3406 (b)(2) OF THE
CENTRAL VALLEY PROJECT IMPROVEMENT ACT
October 5, 1999

INTRODUCTION

Section 3406(b)(2) of the Central Valley Project Improvement Act, Pub. L. No. 102-575, Title XXXIV (CVPIA), directs the Secretary of the Interior to:

dedicate and manage annually 800,000 acre-feet of Central Valley Project yield for the primary purpose of implementing the fish, wildlife, and habitat restoration purposes and measures authorized by this title; to assist the State of California in its efforts to protect the waters of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; and to help to meet such obligations as may be legally imposed upon the Central Valley Project under State or Federal law following the date of enactment of this title, including but not limited to additional obligations under the Federal Endangered Species Act.

Project yield is defined in section 3406(b)(2) [(b)(2)] as the delivery capability of the Central Valley Project (CVP or Project) during the drought period of 1928 - 1934 as it would have been with all facilities and requirements on the date of enactment of the CVPIA (October 30, 1992) in place.

This final decision, and its three attachments (collectively, the Decision), sets out the calculation of CVP yield in accordance with the statutory definition (Attachment 1), the method of accounting for use of the dedicated yield, and procedures for management of the dedicated CVP yield. Attachment 2 sets forth the process for implementation of fish protection and habitat restoration actions proposed or likely to use (b)(2) water. Attachment 3 summarizes the comments received from the public during the 30-day public comment period and the responses of the Department of the Interior (Interior) to those comments. Attachment 3 also lists the comments received from the State of California during Interior's consultation with the State and Interior's response to those concerns. The Decision is the final agency action and supersedes the Interim Decision of July 14, 1999. The July 14, 1999 interim decision and the accounting system

it prescribed were developed and applied, in the context of pending litigation, to account for yield dedicated and managed in the 1999 water year, defined in a court order as March 1, 1999 through February 28, 2000. This final decision setting forth the accounting methodology and (b)(2) policy to be applicable in future water years will be applied effective October 1, 1999.

Interior provided a 30-day public comment period on its proposed decision on the accounting methodology and other aspects of the (b)(2) policy. Interior has also conducted extensive consultation with the State of California on (b)(2) implementation. That consultation began before the Interim Decision with telephone consultation. Following the release of the Interim Decision, Interior and the State, including the Department of Water Resources and the Department of Fish and Game, have met at least nine times. During the consultation, several issues regarding coordination were identified and have been addressed in two sections of this Decision, the Accounting Process, section II. C., and Coordination, section VI, as well as in Attachment 2. Additional issues regarding the relationship of (b)(2) to the Coordinated Operations Agreement (COA) were also identified. Interior and the State have determined that those issues should be addressed in renegotiating the COA.

In developing this final decision, Interior has sought to effectuate the statute in accordance with the language of the statute and the intent of Congress. The first two purposes of the CVPIA as set out in the statute are to protect, restore and enhance fish, wildlife and associated habitats in the Central Valley and Trinity River basins, and to address impacts of the CVP on fish, wildlife and associated habitats. Section 3402(a) and (b). These overall purposes of the CVPIA are reflected in the primary purpose of the water dedicated under (b)(2) – implementing the fish, wildlife, and habitat restoration purposes and measures authorized by the CVPIA.

Consistent with these purposes, Interior interprets the requirement of section 3406(b)(2) that 800,000 acre feet of yield be dedicated annually, coupled with the definition of yield based on the drought period of 1928-1934, as requiring that the specified quantity of water be provided even during the driest of times as well as, consequently, during conditions of wetter hydrology. Thus, the water dedicated under (b)(2) is to be a reliable supply of water for the environment under varying hydrologic conditions.

Interior has calculated the yield of the Project in accordance with the statutory definition, and also has developed a system that accounts for the amount of yield dedicated and managed annually for (b)(2) purposes. The annual accounting of yield dedicated and managed under (b)(2) does not affect the determination of the underlying yield of the Project because the statutory definition of yield incorporates specific, fixed conditions which are not affected by subsequent actions to use the dedicated water. The accounting system thus provides the means for assuring compliance with the statutory directive to dedicate and manage a specified quantity of project yield annually.

I. CALCULATION OF YIELD

Attachment 1, entitled "Calculation of Central Valley Project Yield for Section 3406(b)(2) of the Central Valley Project Improvement Act," describes the calculation of CVP yield for purposes of (b)(2). In summary, the calculation set out in Attachment 1 is based on the average delivery capability of the Project during the 1928-1934 period, adjusted to reflect requirements in effect on the date of CVPIA enactment (October 30, 1992). The CVP yield as calculated for (b)(2) purposes is 5,826,000 acre feet. That total is slightly greater than the yield identified in the July 14, 1999 Interim Decision and reflects a correction of an error in the modeling. Of that amount, Congress has directed that 800,000 acre-feet¹ be dedicated for the purposes set out in (b)(2). As noted above, under the statutory scheme, the calculation of Project yield is not affected by annual actions to dedicate and manage the 800,000 acre feet.

In response to public comments and its consultations with the State of California, Interior has modified Attachment 1 as follows:

- Pages 1 and 3, clarified the definition of storage.
- Pages 1, 3, and 7, changed the phrase "Delta Exports" to "Delta Division" to more accurately capture all the Delta components.
- Page A-3, added text to the discussion of Clear Creek Basin criteria, to provide the references for the minimum flows.
- Page A-4, clarified language explaining the basis for flows in the American River Basin.

II. PROCESS AND ACCOUNTING

The accounting methods and procedures set out in this Decision have been developed to provide a guide for, and verification of, Interior's compliance with the statutory requirement that 800,000 acre feet of CVP yield be dedicated and managed annually.

- A. **Accounting Period.** The accounting period for determining the use of CVP yield dedicated under section 3406(b)(2) (hereinafter (b)(2) water) will be October 1 through September 30.

Explanation: The water year October 1 through September 30 begins with the onset of the yearly precipitation season and is the same water year that has traditionally been used at irrigation projects throughout the West. (See U.S. Geological Survey Circular 1123, 1995).

¹ CVPIA Section 3406(b)(2)(C) provides that water dedicated to (b)(2) purposes may be reduced up to 25 percent when deliveries to agricultural contractors are reduced because of hydrologic circumstances.

In contrast, CVP water service contracts currently are based on a year that runs from March 1 to February 28. This period reflects the beginning of the irrigation and growing season for the majority of crops within the CVP, and promotes efficiency in allowing agricultural and municipal contractors opportunities for better planning.

Just as the Bureau of Reclamation (Reclamation) selected a contracting period that would promote efficiency for water service contractors, Interior has selected an accounting period to promote more efficient use of the (b)(2) water for fishery purposes. The accounting period of October 1 through September 30 will allow the Fish Wildlife Service (FWS) to prescribe spring fishery actions with a more complete knowledge of the year's hydrology and the amount of (b)(2) water actually used for the fall/winter actions. Consequently, this will result in management prescriptions that make the most accurate and effective use of the dedicated water. If the March to February year were used, FWS would have to speculate on the fall/winter hydrology (the period when reservoirs are refilled by fall and winter storms) and the impacts of fall/winter actions to storage when it prescribed the spring measures, potentially resulting in the dedication of too much or too little of the 800,000 acre feet (AF).

B. Accounting Methodology.

The appropriate accounting methodology for the dedication and management of CVP yield for (b)(2) purposes depends upon where in the project the water is used and at what time of year it is used. The measurement methods, or metrics, set out below have been adopted to account for those differences. Measurement of water banked, transferred or exchanged will be accounted as set out in section III.

- 1. Upstream Actions - October 1 through January 31.** Upstream fishery actions from October 1 through January 31 will be accounted as the difference between the cumulative net change in storage in upstream reservoirs (Shasta, Trinity, Folsom, New Melones) at the end of the period with the fishery actions and the cumulative net change in storage that would have resulted from simulated CVP operations during the same period without the fishery actions.

Explanation: The change-in-storage metric for the fall/winter period (October – January) was selected because, during this period, Project storage is generally being accumulated for release later in the year. Changes in storage resulting from the fishery measures will affect the delivery capability of the Project and are an accurate indicator of impacts to the upstream component of yield.

The ending date (January 31) for the fall/winter accounting period is the same date used for other data (e.g., snowpack, anticipated storage) that form the basis of the Project's February 15 water allocation determination, on which irrigators generally base their spring planting decisions.

Similarly, the January 31 date for the end of the change-in-storage metric will allow Interior to determine the amount of (b)(2) water remaining to be dedicated in the water year (i.e., 800,000 AF less net cumulative change in storage as of January 31), and to incorporate that amount into its determination of February allocations to contractors and forecasted project operations for the remainder of the accounting period.

After water released for upstream actions in this period has served the purpose for which its release was prescribed, it is available for recapture and reuse by the Project, including for export south of the Delta. Water released solely for an upstream fishery action under this section II.B.1 is not available for banking, transfer or exchange under section III, and shall be accounted solely under this section. On the other hand, banking, transfer, or exchanges of b(2) water released under section II.B.1 can occur during this period if the water is identified for banking, transfer or exchange before it is released. Such releases will be accounted solely for under the applicable provisions of section III.

2. Upstream Actions - February 1 through September 30.

a. Accounting Methodology: Upstream fishery actions from February 1 through September 30 will be accounted as the change (increase or decrease) in releases from storage from upstream reservoirs² with the fishery actions, compared to releases from storage that would have resulted from simulated CVP operations during the same period without the fishery actions. The calculation of change in release with the fishery measures will be based on daily changes in releases resulting from the (b)(2) measures prescribed by FWS, accumulated over the period.

Explanation: The metric for upstream actions from February through September (releases from storage) reflects the amount of Project yield dedicated to (b)(2) purposes through those actions. Under this metric, the net change in releases will be used in the calculation of (b)(2). For example, increased releases from Shasta Reservoir for fishery purposes may permit Reclamation to reduce planned releases from Folsom Reservoir while still meeting project obligations. The reduced releases from Folsom Reservoir would commensurately offset the increased releases from Shasta Reservoir in the (b)(2) calculation.

b. Upstream Releases may Flow through Delta: If specified by FWS, based on a written assessment of biological benefits to the fishery, Reclamation will allow upstream releases in the February – September period to

² Releases from Trinity Reservoir for Trinity River flows pursuant to 3406(b)(23) of the CVPIA are excluded from the accounting under this provision.

flow through the Delta. Upstream releases specified to flow through the Delta will be accounted solely under this provision, and not as Delta actions.

Explanation: Releases from upstream storage are frequently needed to assist juvenile anadromous fish in their downstream migration to move safely through the Delta into saline water. This provision will permit the upstream releases to assist in the downstream migration when specified by FWS. It applies only in the February through September period because that is generally when Delta outflows will be needed to move the fish through the Delta into saline water. Releases specified to flow through the Delta will be excluded from the calculation of the export/inflow ratio necessary to meet Water Quality Control Plan (WQCP) requirements. (The WQCP requires that exports not exceed a certain percentage of inflow into the Delta. If the water released for (b)(2) purposes were included as inflow in the export/inflow ratio, a portion of the water could be exported and the full benefit of the outflow through the Delta would not be realized.) If FWS specifies that the release is needed for Delta outflow, Interior will take steps as needed to protect the specified flows, including obtaining a California Water Code Sec. 1707 permit.

If FWS does not specify that the release is needed for Delta outflow, it is available for recapture and reuse by the Project, including for export south of the Delta. Water released solely for an upstream fishery action under this section II.B.2 is not available for banking, transfer or exchange under section III and shall be accounted solely under this section. On the other hand, water released under this section II.B.2 can occur if the water is identified for banking, transfer, or exchange before it is released. Such releases will be accounted for solely under the applicable provisions of section III.

3. Delta Actions that affect Exports - October 1 through September 30.

a. Accounting Methodology: Delta actions that affect exports will be accounted throughout the water year as the reduction in exports from the Delta resulting from the prescribed fishery actions.

Explanation: This metric applies only to those actions in the Delta which affect exports. The metric of export reduction for such Delta measures was selected because it is the most accurate indicator of the impact of the fishery measures on Project yield south of the Delta. Actions designed to affect conditions in the Delta that entail releases from upstream reservoirs and that do not reduce exports will be accounted using the applicable upstream metric.

b. Limitation on Delta Actions – February 1 to August 31: During the period February 1 to August 31 (the “low point” for CVP storage in San Luis Reservoir), (b)(2) prescriptions for export reductions will be limited to a maximum of 640,000 AF (80 percent of 800,000 AF of (b)(2) water). This

maximum amount (640,000 AF) will be reduced during times of shortage, as determined under CVPIA Section 3406(b)(2)(C) and in accordance with the shortage criteria set out in section V below, to 80 percent of the reduced amount of (b)(2) water.

Explanation: This provision is intended to manage impacts to deliveries south of the Delta prior to the San Luis Reservoir low point in late August. The provision is based on an 80%-20% ratio of unconstrained water supply capability before and after the low point. Under unconstrained conditions, the pumping and storage capability of the Project can provide 80 percent of the annual water supply prior to August 31 (the San Luis Reservoir low point) and 20 percent following the low point. Interior will apply that same constraint on its designation of (b)(2) measures affecting exports south of the Delta. The CVPIA provides that the 800,000 acre feet dedicated under (b)(2) can be reduced by up to 25 percent during times of drought. If the amount dedicated under (b)(2) is reduced pursuant to this provision, the maximum amount used for (b)(2) in the Delta during this time period will be reduced as well.

C. Accounting Process

To assist Interior in implementing the methodology and (b)(2) policy set forth in the final decision, Interior has established a B2 Interagency Team (B2IT). Interior will seek the participation of the California Department of Water Resources (DWR) and the California Department of Fish and Game (DFG) in this team. With the State agreement and participation, this interagency team of project operators and project and resource agency biologists will consist of representatives from the following agencies: DWR; DFG; Reclamation; FWS; and National Marine Fisheries Service (NMFS).

To assist the B2IT and Interior in developing the annual actions to dedicate and manage the 800,000 acre feet, Interior has established a stakeholder process as described in Attachment 2. The stakeholder process will be used as an opportunity for the project operators and resource agencies to present and discuss information and seek input regarding the development of the annual (b)(2) fishery action plan and how the plan is integrated into the operations forecast. This will be accomplished through bi-annual workshops with all interested parties as described in Attachment 2.

1. **Reclamation's Forecast.** Reclamation will provide FWS a preliminary 12-month baseline forecast of operations on the 15th day of each month, to be updated monthly thereafter. The forecast will be based on the applicable CVP Operations Criteria and Plan (OCAP). Reclamation intends to revise the current OCAP following issuance of the Record of Decision on the CVPIA Programmatic Environmental Impact Statement and the decision by the State Water Resources Control Board on the water quality control plan implementation.

2. **FWS Schedule.** FWS will submit to Reclamation its 12-month schedule for fishery measures, including proposed transfers, exchanges and banking, on the first day of each month, to be updated monthly thereafter. Based on end-of-September storage conditions and anticipated OCAP operations for the fall and winter months, FWS will target a maximum of 200,000 - 350,000 acre-feet of (b)(2) water to be used to implement upstream fall/winter releases for fishery purposes. These measures will be adjusted periodically, as the season's hydrology evolves and CVP operations respond, to stay within the target and retain sufficient (b)(2) water to implement desired spring/summer measures, both in the Delta and upstream.

3. **Monthly and Final Accounting:** Reclamation and the FWS will jointly develop an initial accounting of (b)(2) water on the 15th day of every month showing the current accounting for that accounting year as of the end of the previous month. To assist in making preliminary allocations for the coming contract year, initial assessments of the amount of (b)(2) water used for the fall/winter measures will be made just prior to the preliminary allocations on February 15 of each year. An accounting of the amount of (b)(2) water used for these actions during the October-January period will be completed by March 15 of each year. Final accounting for all (b)(2) actions during the entire water year will be calculated by October 31.

III. WATER BANKING AND TRANSFER/EXCHANGES OF WATER

A. **Banking:** Subject to section III.C below, the FWS may bank (b)(2) water in CVP or non-CVP facilities for fish and wildlife purposes. Any amount banked within the reservoir of origin will be accounted as (b)(2) water on a one-to-one basis at the time it is banked. Any water banked elsewhere shall be accounted on a one-to-one basis only once, at the time it is released from the reservoir of origin. Any banked water shall be accounted solely under this provision, regardless of the time of storage or release. The amount banked will not be included for any purpose in the accounting of (b)(2) water under II.B.1 or 2, above.

B. **Transfers to or exchanges with other water users:** Subject to section III.C below, the FWS may transfer or exchange water from upstream CVP reservoirs to or with other CVP water users or non-CVP water users during any part of the water year to accomplish (b)(2) purposes. Any amount transferred or exchanged shall be accounted as (b)(2) water on a one-to-one basis as released from the reservoir of origin, and shall be accounted solely under this provision. FWS may transfer or exchange (b)(2) water from San Luis Reservoir only to the extent that it has delivered (b)(2) water to that reservoir. The amount transferred or exchanged will not be included for any purpose in the computation of (b)(2) water under II.B.1 or II.B.2.

C. **Limitations:** The costs of any banking, storage, diversion or delivery (applicable cost of service rate) necessary to carry out the banking, transfers, and exchanges under this section, including carriage water costs and/or other costs normally incurred with a transfer,

exchange, or banking, will be arranged by FWS. Any accomplishment of a transfer, exchange, or banking of water will be dependent upon the capability of the conveyance and/or storage facilities involved. Water transfers, exchanges or banking must comply with state water law and include appropriate environmental documentation. Priority of access to storage or conveyance capacity must be arranged by FWS before or at the time of the transfer, exchange, or banking transaction. The transfer, exchange, and/or banking of (b)(2) water cannot interfere with the storage, diversion, or delivery of water for other purposes of the CVP.

IV. WATER TO MEET WQCP REQUIREMENTS

During the life of the Bay/Delta Accord, Interior will continue to fulfill the commitment in the Accord that all CVP water provided to meet the Accord will be credited toward the (b)(2) obligations. Following expiration of the provisions of the Accord governing (b)(2) credits, Interior will continue to credit the amount of water provided to meet the 1995 Delta Water Quality Control Plan (WQCP) requirements toward (b)(2), up to a cap of 450,000 acre-feet annually unless the FWS determines that it is a biological priority to credit water above that cap toward (b)(2).

The Bay/Delta Accord provides that all project water provided pursuant to the Accord shall be credited toward the (b)(2) obligation to provide 800,000 acre-feet, and does not expressly set out a cap on that commitment. At the time the Accord was signed in 1994, however, it was assumed that the combined CVP and SWP water costs associated with it would not exceed one million acre-feet, one half of which would be borne by the CVP. Of that amount, the CVP share of the fishery measures in the Accord was estimated to be a maximum of 450,000 AF. The State Water Resources Control Board is currently conducting hearings to allocate responsibility for meeting the WQCP standards. That decision is expected in mid-2000. Upon expiration of the Accord provisions on responsibility for meeting the standards, Interior will continue to credit up to 450,000 AF of CVP water used to meet the WQCP obligations toward the (b)(2) requirements, consistent with the assumptions underlying the Accord. An additional amount may be credited based upon a written assessment by FWS that it is the highest biological priority for use of the remaining (b)(2) water.

V. SHORTAGE CRITERIA

CVPIA Section 3406(b)(2)(C) provides: "The Secretary may temporarily reduce deliveries of the quantity of water dedicated . . . up to 25 percent of such total whenever reductions due to hydrologic circumstances are imposed upon agricultural deliveries of CVP water." The Shasta Criteria, which are in existing San Joaquin River Exchange Contracts and which set out a formula for reducing deliveries to those senior water rights holders during hydrologically dry periods, will be used to define the hydrologic circumstances that trigger the provisions of Section

3406(b)(2)(C). For developing operation plans, the 90 percent-exceedance hydrologic forecast will be used.

VI. COORDINATION

Interior recognizes that the implementation of Section 3406(b)(2) will be important in the preparation of a Water Management Strategy that is an integral part of the CALFED Bay-Delta Stage I Program. To better coordinate the (b)(2) policy and CALFED, the B2IT will serve as a subgroup to the CALFED Operations Group. The CALFED Operations Group will assist Interior in coordinating the (b)(2) fishery action plan with other operational programs or resource related aspects to protect and restore the Bay-Delta. Such an interrelationship will also serve as an opportunity, in addition to the workshops described in Attachment 2, for stakeholders to interact with the project operators and resource agency staff. Project operators and resource agency staff will use this opportunity to update stakeholders on the progress of implementing provisions of this Decision and to receive input.

In preparation for the implementation of Stage I of the Bay-Delta Program, the B2IT will coordinate with CALFED in the development and implementation of an Environmental Water Account and Water Management Strategy. This coordination initially will take place through the CALFED Water Management Coordination Team. Coordination of the Decision is essential in accomplishing a coordinated program to support the environmental restoration goals of the program.

Section 3406(b)(2)(B) provides that the water dedicated under (b)(2) shall be managed pursuant to conditions specified by the FWS after consultation with Reclamation and the California Department of Water Resources (DWR) and in cooperation with the California Department of Fish and Game. In addition, FWS, in managing for anadromous fish species, routinely coordinates and consults with the National Marine Fisheries Service. It is Interior's intent to accomplish much of this coordination through participation and discussion with stakeholders and state and federal agencies in the CALFED process described above. Additional coordination with these and other agencies and stakeholders will also be necessary and will be carried out.

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. However, this policy does not extend to impacts to the SWP that result from its obligations under either the WQCP or Endangered Species Act. Interior believes that any gains that the SWP accrues from release of (b)(2) water from upstream reservoirs should be credited against any impacts to the SWP, as a result of (b)(2) actions that would otherwise have to be made up. Interior will meet with DWR to agree on make-up obligations and credits against such obligations. As a result of the consultation with the State, Interior and the State have determined that these issues would be

best addressed as a part renegotiating the COA. Therefore, Interior and the State have committed to an expedited schedule for renegotiating the COA.

**Calculation of
Central Valley Project Yield
For Section 3406 (b)(2) of the
Central Valley Project Improvement Act**

**U.S. Department of the Interior
5 October 1999**

Executive Summary

The Central Valley Project (CVP) is a multipurpose water project that consists of a system of storage, conveyance, and power facilities to make multiple use of the water supplies developed and controlled by those facilities. The initial project authorization (1937) provided that the CVP "shall be used first, for river regulation, improvement of navigation, and flood control; second, for irrigation, and domestic uses; and third, for power" generation. The Central Valley Project Improvement Act (CVPIA) amends the previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes with equal priority to irrigation and domestic uses, and fish and wildlife enhancement as a project purpose equal to power generation.

The Central Valley Project Improvement Act defined Central Valley Project yield for purposes of Section 3406 (b)(2) ("(b)(2)") as:

"the delivery capability of the Central Valley Project during the 1928-1934 drought period after fishery, water quality, and other flow and operational requirements imposed by terms and conditions existing in licenses, permits, and other agreements pertaining to the Central Valley Project under applicable State or Federal law existing at the time of enactment of this title have been met."

Calculation of yield, in accordance with this definition and appropriate assumptions, has been accomplished and the results are summarized in this document. **That calculation shows that CVP yield, as defined in (b)(2), is 5,826,000 acre-feet per year.** That calculation assumes that delivery capability during the 1928-34 period is the average annual delivery to CVP users over that period. This definition does not include storage remaining in CVP reservoirs which has been recognized in some yield analyses as incremental supply. The yield is calculated at the projected 2020 level of development when CVP contractors could be expected to maximize use of the CVP supply available to them under their contracts without the CVPIA actions. The yield calculation, which shows the yield for five areas, is summarized below.

Area	Average Annual Deliveries 1928 to 1934 Period With Requirements in Effect on 10/30/92 (thousands of acre-feet/year)
Sacramento River Basin	2,059
American River Basin	670
Delta Division	2,154
Stanislaus River Basin	3
Friant Division	940
TOTAL	5,826

Introduction

The Central Valley Project (CVP) is a multipurpose water project that consists of a system of storage, conveyance, and power facilities to make multiple use of the water supplies developed and controlled by those facilities. The initial project authorization (1937) provided that the CVP "shall be used, first, for river regulation, improvement of navigation, and flood control; second, for irrigation, domestic uses; and third, for power" generation. The Central Valley Project Improvement Act (CVPIA) amends the previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes with equal priority to irrigation and domestic uses, and fish and wildlife enhancement as a project purpose equal to power generation.

The CVP has been developed to include 20 reservoirs with a combined storage capacity of more than 12 million acre-feet. The CVP also includes 8 powerplants, 2 pumping-generating plants, and approximately 500 miles of major canals. Figure 1 shows the location of the major CVP facilities. Waters included in the calculation of CVP yield for purposes of (b)(2), are diverted and stored in reservoirs on the Trinity, Sacramento, American, Stanislaus, San Joaquin Rivers, and in San Luis Reservoir. Table 1 lists the facilities included and not included in the (b)(2) yield calculation. CVP facilities that are not included in the (b)(2) yield calculation divert and store water on smaller tributaries to the Sacramento and American Rivers. Those facilities not relevant to the yield calculation either do not contribute to the yield (such as flood-control-only facilities) and/or are not hydrologically integrated into the operation of the CVP.

Historic CVP Yield

Historically, CVP yield was used as an index of water supply available through the operation of project facilities in accordance with entitlements under water rights permits and applicable laws, contracts, and agreements. Calculations of yield included a predefined set of deficiencies to CVP water contractors.

The historical definition of CVP Yield taken from the Bureau of Reclamation Mid-Pacific Region, "Central Valley Project Estimates of Yield", dated September 1994 follows:

"the supply (subject in critically dry years to set percentages of supply reductions or deficiencies) that is available from the project under conditions that would be expected to occur under future levels of in-basin and project water demands (currently based on year 2020). Yield calculations are based on the critically dry hydrologic period that occurred in the Central Valley during 1928 through 1934. The calculation assumes a deficiency in water delivery totaling 100 percent of one year's demand spread over this seven year period or approximately 25 percent in any one critically dry year."

Applying this definition, CVP yield was calculated using monthly inflows and storage in CVP reservoirs to provide water for contractual obligations to be met by the CVP. Trinity, Shasta,

Folsom, Whiskeytown, and San Luis Reservoirs were operated in an integrated manner. Operations of these Reservoirs and CVP export facilities were then simulated to meet project obligations over the study period. Project obligations included flood control, instream flow requirements, in-basin uses, delta outflow needs, contractual commitments, and other existing operating agreements. Deficiency criteria as defined above were applied. After the 1976-1977 drought the 25% value in any one year was modified to be 50% in any one year with a seven year maximum of 100%.

Yield was the average annual (1928 through 1934) deliveries of the Sacramento River Basin, American River Basin, and Delta Division, plus the "incremental supply." (*Incremental supply is the difference between the lowest cumulative storage in Shasta, Folsom, and Trinity Reservoirs that would occur during the 1928 through 1934 period and the minimum pool requirement (as defined in reservoir operating procedures). This difference was divided by the number of years it took to reach minimum reservoir storage during the 1928 through 1934 period .)*

For more details on traditional calculations see the "Central Valley Project Estimates of Yield," Bureau of Reclamation Mid-Pacific Region, dated September 1994.

Definition of Yield for to the CVPIA Section 3406 (b)(2)

In contrast to the historical definition, the CVPIA defined CVP yield as:

"the delivery capability of the Central Valley Project during the 1928-1934 drought period after fishery, water quality, and other flow and operational requirements imposed by terms and conditions existing in licenses, permits, and other agreements pertaining to the Central Valley Project under applicable State or Federal law existing at the time of enactment of this title have been met."

Given this definition, and appropriate assumptions, Reclamation has calculated CVP yield for the purposes of (b)(2). The calculation assumes that delivery capability during the 1928-34 period is the average annual deliveries to CVP users over that period. This definition does not include storage remaining in CVP reservoirs which has been recognized in some yield analyses as incremental supply.

Calculation of CVP Yield Pursuant to CVPIA Section 3406 (b)(2)

The assumptions used for this calculation of CVP yield for purposes of (b)(2) are generally consistent with the assumptions used in the Draft Programmatic Environmental Impact Statement (DPEIS) No Action Alternative for the CVPIA, released in November 1997, with the following key modifications:

- Sacramento-San Joaquin Delta water quality requirements were based on SWRCB D-1485 and D-1422 rather than the SWRCB 1995 Water Quality Control Plan.

- Full Contract amounts were assumed rather than the “historic maximum” used in the DPEIS.
- Allocation percentages to refuges were the same as allocations to CVP agricultural service contractors.

This yield calculation used both supply and demand based on the 2020 Hydrology, which is based on the projected 2020-level land use and demographics from DWR Bulletin 160-93. It was assumed CVP water contractors, maximum CVP use would be either contract amounts or demands in the DWR depletion analysis. This is consistent with historic yield calculations which were based on future level development. Modeling assumptions are described in detail in Appendix A. The model simulations were completed using an integrated suite of models consisting of PROSIM 99.0, SANJASM, STNMD99FSH.WK4, and WSTRN99.WK4. PROSIM 99.0 was released by Reclamation at a PROSIM Workshop on November 20, 1998. This version of the model includes a number of enhancements to the model logic and input hydrology to the version used in the DPEIS. Enhancements to the model are described in Appendix B.

Table 1 lists CVP facilities relevant to the determination of the (b)(2) yield as well as those not relevant. The facilities not relevant either do not contribute to the yield (such as flood-control-only facilities) or are not hydrologically integrated into the operation of the CVP. Based on the definition of “Central Valley Project” contained in the CVPIA, the Friant Division and Stanislaus River Basin have been included in this (b)(2) yield calculation. Since the operation of the Friant Division has a relationship to Reclamation’s responsibility for providing CVP water to the San Joaquin Exchange and Mendota Pool contractors, it was determined appropriate to include the yield of the Friant Division within the (b)(2) yield calculation. The operation of the Stanislaus River Basin relates to the ability of the CVP to comply with certain provisions of the 1995 Water Quality Control Plan and serves as an important fish and wildlife resource under CVPIA.

Applying these assumptions, hydrology and facilities, the models were then used to simulate the operation over the 1922 to 1990 period. Deliveries for contract years 1928 to 1934 were then extracted from the modeling results to determine the yield in accordance with (b)(2). The CVP contract amounts (including water right settlement agreements and historic refuge amounts which are not necessarily considered CVP “contracts”) and average annual deliveries over the 1928 to 1934 period are shown in Table 2. These results indicate that the yield for the CVP based on the definition in the statute and the assumptions included in this evaluation is 5,826,000 acre-feet. These models produce yield calculations based on numerous assumptions about hydrology, demands, and operational constraints and should not be considered as absolute values for yield. This yield calculation does not directly relate to any specific actual year and should not be used to predict actual deliveries for a given year. It is important to keep in perspective that planning models like PROSIM, SANJASM, and STNMD99FSH are best used in a comparative manner.

Figure 1
Major CVP Facilities

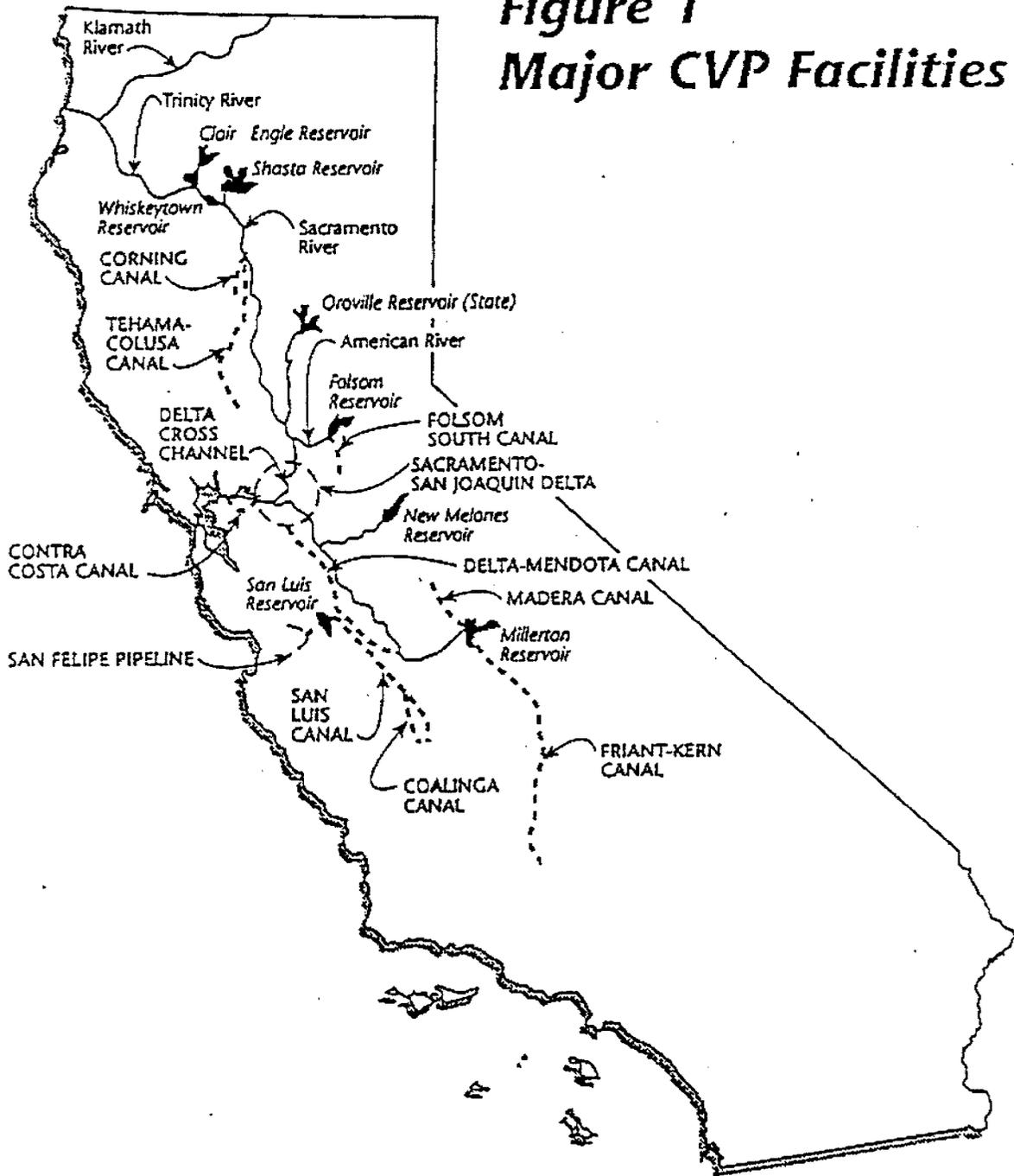


Table 1

CVP Facilities Included in CVPIA 3406 (b)(2) Yield Calculation			
Dams	Reservoir Capacity (Acre-Feet)	Canals & Conduits	Initial Capacity (cfs)
Shasta	4,552,000	Delta Cross Channel	3,500
Trinity	2,447,000	Delta-Mendota	4,600
New Melones	2,400,000	Contra-Costa	350
San Luis (CVP portion)	974,000	Corning	500
Folsom	975,000	San Luis (CVP portion)	6,000
Friant	521,000	Coalinga	1,100
Whiskeytown	240,000	Tehama-Colusa	2,530
O'Neill Forebay	57,000	Folsom-South	3,500
Keswick	24,000	Clear Creek Aqueduct	73
Lewiston	15,000	Cow Creek Aqueduct	92
Nimbus	9,000	Clear Creek Tunnel	3,600
Spring Creek	6,000	Spring Creek Tunnel	4,200
Red Bluff Diversion	-	Pacheco Tunnel	670
Contra Loma	2,000	Friant-Kern	4,000
		Madera	1,000
Facilities Not Included in CVPIA 3406 (b)(2) Yield Calculation			
Dams	Reservoir Capacity (Acre-Feet)	Canals & Conduits	Initial Capacity (cfs)
Sly Park	41,000	Camino	125
Black Butte	160,000	Forest Hill	25
Camp Creek Diversion	-	Camp Creek Tunnel	500
Franchi Diversion	-		
Little Panoche Detention	6,000		
Los Banos Detention	35,000		
Hidden	90,000		
Buchanan	110,000		
Sugar Pine	16,500		

Table 2
CVP Contract Amounts and Average Annual Deliveries 1928 to 1934

Water Users	Cont Amt TAF/YR	Avg Del TAF/YR	Comments
Sacramento River Basin			
Settlement	2,217	1,908	Includes cities of Redding & W. Sac Redding/Buckeye included above Historic Level 2 - Sacto Complex
Agricultural	394	119	
M&I	6	5	
Refuge	<u>92</u>	<u>27</u>	
Subtotal	2,709	2,059	
American River Basin			
Water Rights	526	520	Includes PCWA 92 TAF/YR Includes PCWA 25 TAF/YR & EBMUD
Agricultural	92	25	
M&I	<u>286</u>	<u>125</u>	
Subtotal	904	670	
Delta Division			
Contra Costa	195	150	Maximum delivery 175 TAF/YR Includes Fresno Slough Schedule II
Exchange/Mendota	885	761	
DMC Agricultural	526	278	Historic Level 2
DMC Refuge	147	78	
San Felipe AG	89	47	Includes Pajaro Valley 19.9 TAF/YR
San Felipe M&I	128	110	
San Luis AG	1,237	644	Some M&I for San Luis & Panoche WDs
San Luis M&I	17	15	
Cross Valley Canal	128	65	
South San Joaquin	<u>10</u>	<u>6</u>	
Subtotal	3,362	2,154	
Stanislaus River Basin			
CVP Firm Water	49	3	Long term contract for firm water Based on build-up of In-Basin demands
CVP Interim	<u>106</u>	<u>0</u>	
Subtotal	155	3	
Friant Division			
Class I	800	751	Long term contract for firm water Supply based on hydrologic conditions
Class II	<u>1,400</u>	<u>189</u>	
Subtotal	2,200	940	
GRAND TOTAL	9,330	5,826	

APPENDIX A

MODELING ASSUMPTIONS FOR A PRE-CVPIA CONDITIONS YIELD RUN

OBJECTIVE

The objective of this study was to determine the average annual delivery capability for the March 1928 through February 1935 period while meeting the system requirements as of October 30, 1992, which is being used to represent yield pursuant to the (b)(2).

METHODOLOGY

The operation of the system's reservoirs was simulated based on balancing priorities considering multiple conflicting goals and constraints. The foremost consideration was flood control, and Reclamation Safety of Dams, followed by minimum instream flow requirements, including Delta outflow, required in-basin demands, and water right settlement demands. Next, storage retention for temperature control was considered (where appropriate), followed by water supply for M&I demands, agricultural, and refuge demands.

This study was completed using PROSIM, SANJASM, WSTRN99.WK4 and STNMD99FSH.WK4. DMC deliveries from PROSIM were input to WSTRN99 to develop westside return flows to the San Joaquin River. These westside return flows and PROSIM deliveries to Mendota Pool were input to SANJASM. Flow and quality on the San Joaquin River above the Stanislaus from SANJASM were input to STNMD99FSH. The resulting Vernalis flows were output from STNMD99FSH as a time series for input to PROSIM. The suite of models was iterated until there were no significant changes in DMC deliveries and Vernalis flows.

PROSIM

PROSIM version 99.0, described in Appendix B, and 20B2_015.MCF data set was used in this study.

Hydrology and Demands

- The State of California's Department of Water Resources (DWR) Bulletin 160-93 hydrologic data set HYD-C-09A was used. This data reflects the historic hydrology superimposed on an assumed constant projected level -- in this case, the year 2020. The building blocks of this data (Consumptive Use and Depletion Analyses data for HYD-C-09A) were organized into the required format for PROSIM.
- Eastside Streams - Pre-Operated: A time series of monthly flows representing the combined net inflow to the Delta from the Cosumnes, Mokelumne and Calaveras rivers was taken from SANJASM output used in the Draft PEIS Cumulative Impacts Study (study 1d). See Draft PEIS documentation, Technical Appendix Volume 7 for additional details. Refer to the SANJASM section for further details.
- San Joaquin River - Vernalis flows from STNMD99FSH are input as a time series. Refer to the SANJASM section for further details.

- CVP demands - Full Contractual amounts for contracts in effect as of October 1992 were used. Demands include:
 - 1) Refuge Water Supply at historical "Level II" without losses.
 - 2) A Pajaro Valley demand of 19.9 TAF/YR for San Felipe Project.
 - 3) No interim water supplies.
- Delta Consumptive Use : The gross consumptive use and Delta precipitation from DWR's hydrology were used.
- State Water Project export demands: The variable annual demand (3.4 - 4.2 MAF based on the Southern California Wetness Index) and the monthly pattern were taken from DWRSIM run 514. No inclusion of interruptible demands.

PHYSICAL FACILITIES

Reservoirs

PROSIM simulated the operation of the reservoirs listed in the table below. The southern SWP reservoirs of Pyramid, Castaic, Silverwood and Perris Lakes were represented by two aggregated storage facilities, East Branch Reservoir and West Branch Reservoir. The reservoir characteristics are shown below:

RESERVOIR NAME	Maximum Possible Storage (TAF)	Maximum Power Release (CFS)
Clair Engle	2447	3300 ¹
Whiskeytown	240	Not Used
Shasta	4552	Varied
Oroville	3538	Not Used
Folsom	974	5000 ²
CVP San Luis	972	Not Used
SWP San Luis	1067	Not Used
East Branch	200	Not Used
West Branch	489	Not Used

¹ This limitation is actually based on Carr Power Plant's turbine capacity, not Trinity Dam's turbine capacity. Further, in this study, the hydraulic capacity was assumed to remain constant regardless of Whiskeytown's storage.

² This limitation is actually based on Nimbus Power Plant turbine capacity, not Folsom Dam's turbine capacity.

Delta Export Pumping Plants Physical and/or Regulatory Limits

(CFS)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Tracy ¹	4600	4600	4600	4600	4600	4600	4600	3000 ²	3000 ²	4600	4600	4600
Banks	6680	6680	7590 ⁴	8500 ⁴	8500 ⁴	7590 ⁴	6680	3000 ³	3000 ³	4600 ²	6680	6680

¹ These limits frequently go unrealized due to the DMC capacity reductions shortly downstream of the pumps (4300 cfs @ DMC Mile Post 20.62 and 4200 cfs @ DMC Mile Post 33.71).

² SWRCB's D-1485 criteria for striped bass survival. Additional pumping of federal water by the State called "wheeling" occurs later in the year to make up for these restrictions.

³ SWRCB's D-1485 criteria for striped bass survival. In addition, pumping is restricted further (to 2000 cfs) if storage withdrawals from Oroville are being made - per January 5, 1987 interim agreement between California's Department of Fish and Game (DFG) and California's Department of Water Resources (DWR).

⁴ Pumping at Banks between Dec 15 and March 15 may be augmented above the 6680 up to the limits listed depending upon flow in San Joaquin River at Vernalis per the Corps' October 13, 1981 Public Notice criteria. A maximum of 8500 cfs is assumed based on hydraulic constraints surrounding the pumps. South Delta improvements which would allow the full 11 pumps' capacity of 10,300 cfs to be realized are assumed not to be in place.

MINIMUM FLOW CRITERIA ASSUMED

Trinity River Basin

340 TAF/YR fishery flow volume per year - Interim Secretarial Decision of 1991

(CFS)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	300	300	300	300	300	300	300	1591	578	450	450	450

Clear Creek Basin

This is per Reclamation operating policy, based largely on a Memorandum dated May 3 1967, from the National Park Service to Reclamation, which in turn is based on the Agreement dated March 31, 1960 between DFG and Reclamation.

(CFS)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Normal	50	100	100	50	50	50	50	50	50	50	50	50
Critical	50	70	70	50	50	50	50	50	50	50	50	50

Upper Sacramento River

Minimum flows and temperature control objectives are consistent with general operations to meet requirements of the Winter-Run Chinook Salmon Biological Opinion issued by the National Marine Fisheries Service (NMFS) in October 1992. Reclamation must maintain *daily* average water temperature in the Sacramento River at no more than 56° F within the winter-run chinook salmon spawning grounds below Keswick Dam. It is not possible, however, to simulate temperature criteria in the PROSIM model. Instead PROSIM includes criteria consistent with temperature control objectives and those results are evaluated for their general compliance to temperature control goals. To that end the PROSIM contains the following flow criteria and minimum year end storage criteria.

(CFS)	OCT	NO V	DEC	JAN	FEB	MA R	APR	MAY	JUN	JUL	AUG	SEP
Normal	3250	3250	3250	3250	3250	3250	3250	3250	3250	3250	3250	3250
Critical	3000	3000	3000	3000	3000	3000	3000	3250	3250	3250	3250	3000

Reclamation must maintain a minimum end-of-water-year (September 30) carryover storage in Shasta Reservoir of 1.9 MAF. NMFS recognizes that it may not be possible to maintain a minimum carryover storage of 1.9 MAF in the driest 10 percent of water year types. This PROSIM model simulation is checked to ensure that this storage criteria is met.

Lower Sacramento River

Wilkins Slough/Navigation Control Point Objective - This objective balances the relationship of river stages and diversion structures along the Sacramento River with the need for conservation of storage at Shasta Reservoir for temperature control purposes. Generally, the objective varies between 5000 cfs for good hydrologic and storage conditions and 4000 cfs for moderate hydrologic and storage conditions. In years of poor hydrologic and storage conditions, (i.e., years in which NMFS would require re-consultation for temperature control objectives) the Wilkins Slough objective is modeled to allow dropping of flows to 3500 cfs to help conserve storage at Shasta Reservoir.

American River Basin

The Lower American River minimum flows were between 250 cfs (D-893, Folsom Dam water right decision) and 3000 cfs (flows mandated by Judge Hodge for EBMUD to receive deliveries from the American River). This criteria is known informally as "Modified D-1400." (D-1400 is the Decision regarding Auburn Dam.) For modeling, the criteria that were used were between 3000 cfs when water availability is good and 250 cfs when water availability is very poor, based on a combination of Folsom storage and hydrologic conditions.

The Hodge Decision determined when EBMUD receives water during the years when court-mandated minimum flows are met. EBMUD receives water to a maximum of 150 TAF/YR.

DELTA CRITERIA

D-1485 Water Quality Standards and 1986 COA framework between the CVP and SWP for implementing those standards on a coordinated basis. The COA defines the sharing of the water supplies and responsibilities in the Delta on a conditional and formula basis. When the Delta is in a surplus condition, no sharing is required. When the Delta is being supported by unregulated flow, the available water is shared on a 55% CVP 45% SWP basis. When the Delta requires storage withdrawals to support Delta standards then the responsibility is shared on a 75% CVP 25% SWP basis.

The Delta Cross Channel Gates were modeled as closed February through April per the 1992 and 1993 Winter-Run Chinook Salmon Biological Opinions.

WHEELING

Three quantities of water were possibly assumed to be transported by the State for the Federal government. A description of these is given below:

D-1485 Wheeling

This CVP water is exported from the Delta by Banks pumping plant each year as compensation for the pumping restrictions placed on Tracy pumping plant in May and June per SWRCB's Decision 1485. The following assumptions were made:

- Wheeling (payback) was assumed to occur within the July - November time frame.
- Up to 194 TAF could be moved in a single month.
- Whether Tracy was pumping at its maximum permissible rate during May and June was not considered.
- D-1485 wheeling was not required if the CVP simulation imposed a deficiency level greater than 19 (Ag 10% delivery).
- Wheeling was done to the extent needed to fill CVP share of San Luis Reservoir to its rule curve.
- Wheeling was only done to the extent the SWP had available capacity at Banks, i.e., SWP was not forced to wheel all 194 TAF each calendar year.
- CVP excess in the Delta was labeled wheeling water to the extent possible.

Cross Valley Wheeling

This CVP water (up to 128 TAF/YR) is exported and banked in the SWP share of San Luis Reservoir as necessary to satisfy CVP contractor demand (Cross Valley water) from the California Aqueduct.

Refuge Wheeling

This scenario included additional wheeling for Kern National Wildlife Refuge.

ALLOCATION GUIDELINES

Reclamation guidelines set minimum CVP deliveries to M&I Water Service Contractors at 75 percent of the historic use (which is generally assumed to be equivalent to the contract amount at the 2020 level). The allocation guidelines for Sacramento River Water Rights and San Joaquin River Exchange Contractors are 75 percent of the full contract amount based on the Shasta Index. CVP minimum water deliveries to Agricultural Water Service Contractors can go as low as zero percent of the full contract amount. Refuge allocations are assumed the same as Agricultural Water Service Contractors. Reductions to allocations do not necessarily equal the lowest allocation allowed but are based on a combination of available reservoir storage and projected runoff. In addition, Reclamation may make additional allocations for drought mitigation for the Refuges and hardship water for Agricultural and M&I users on a case by case basis which is not modeled.

CVP MINIMUM ALLOCATIONS

Water User	Minimum Allocation Guidelines used in CVP Yield Calculation
Sacramento River Water Rights and San Joaquin River Exchange Contractors	75% based on Shasta Criteria
Agricultural Water Service	0% per Contract
M&I Water Service	75% per Historical Use
Refuges	Same as Agricultural Water Service

VARIABLE STATE WATER PROJECT (SWP) DEMANDS

PROSIM 99.0 incorporates variable water demands for SWP entitlement holders south of the Delta. DWR developed these demands for its monthly SWP/CVP simulation model (DWRSIM) and demands vary based on precipitation levels south of the Delta. These revised demands are more representative of actual SWP operations than the constant annual demands assumed in the Draft PEIS PROSIM analyses. In the Draft PEIS, the constant annual demands were 4.2 million acre-feet. The revised annual demands range from 3.4 to 4.2 million acre-feet.

SANJASM

SANJASM version 3.61x was run with the BASE_IT1.MCF data set.

Hydrology and Demands

- The input hydrology for SANJASM is based on historical records modified for projected level conditions. The inflows were based on DWR's Bulletin 160-93 projected changes in upstream consumptive use.
- Demand levels for the Middle San Joaquin River, Merced River, and Tuolumne River are assumed to be the same as recent historic because these streams are fully developed.
- Demands on the Stanislaus River were balanced to provide equitable allocations to each interest. This river is seriously over-allocated and it is not possible to fully meet each requirement.
- Demands on the Calaveras River and Mokelumne River are based on projections of 2020 water use by SEWD and EBMUD. The Cosumnes River inflow is modified to allow for increased demand from Jenkinson Lake by El Dorado County.
- Westside Return flows are based on historical "Level II" without losses.

PHYSICAL FACILITIES

Reservoirs

SANJASM simulates the operation of the reservoirs listed in the table below.

RESERVOIR NAME	Maximum Possible Storage (TAF)
Friant	521
Hidden	90
Buchanan	151
New Exchequer	1024
New Don Pedro	1900
Modesto	29
Turlock	45
New Melones	2420
Tulloch	67

RESERVOIR NAME	Maximum Possible Storage (TAF)
New Hogan	325
Pardee	210
Camanche	431

Canals

SANJASM simulates exports through Friant-Kern Canal, Madera Canal and East Bay Aqueduct.

MINIMUM FLOW CRITERIA

Middle San Joaquin River

A minimum flow of 5 cfs is maintained in the reach between Friant Dam and Gravelly Ford to ensure adequate flow levels for the riparian users in this reach.

Fresno River

No minimum instream flow requirement.

Chowchilla River

No minimum instream flow requirement.

Merced River

Instream flows are defined by the FERC license agreement and the Davis-Grunsky agreement. Flows range from 85 TAF to 68 TAF dependent upon year type.

Tuolumne River

Instream flows are defined by the original FERC license agreement. Flows range from 169.4 TAF to 66 TAF dependent upon year type.

Stanislaus River

Simulated in STNMD99FSH.WK4.

Calaveras River

No minimum instream flow requirement.

Mokelumne River

Instream flows are based on EBMUD's proposed Lower Mokelumne River Plan (LMRP) and range from 113.7 TAF to 18.7 TAF depending on year type.

Cosumnes River

No minimum instream flow requirement.

ALLOCATION GUIDELINES

Demand allocations are handled differently for each river in the San Joaquin Basin. Each stream is modeled based on operating criteria provided by the responsible entities or on recent historical delivery patterns.

Middle San Joaquin River

Exports to the Friant-Kern and Madera Canals are based on linear regressions which were developed against recent historic (1968 - 1990) deliveries. These exports utilize almost the entire inflow to the reservoir with the exception of flood spills and releases for riparian demands downstream. Releases for riparian diverters between Friant Dam and Gravelly Ford are based on historic patterns.

Fresno and Chowchilla Rivers

Deliveries are based on recent historic delivery patterns. Deficiencies are taken based on water year type. The maximum deficiency is 50% for critical years.

Merced River

Maximum demand is based on testimony provided during the D-1630 hearings. Deficiencies are taken based on water year type. The maximum deficiency is 40% for critical years.

Tuolumne River

Deliveries are based on recent historic delivery patterns. Deficiencies are taken based on water year type. The maximum deficiency is 40% for critical years.

Stanislaus River

For this study, the Stanislaus River was simulated in STNMD99FSH.

Calaveras River

Demand levels were provided by SEWD. Deficiencies on the Calaveras River are computed on an iterative basis, with the deficiency level being determined by the desired carryover storage level.

Mokelumne River

EBMUD contracts contain deficiency criteria is based on projected end of year total system storage. Each contract contains different criteria and is modeled independently in SANJASM. The maximum deficiencies taken vary by contract and range from 15 % to 60%.

STNMD99FSH.WK4

STNMD99FSH is a variation of Reclamation's STANMOD spreadsheet. This version allows the 1987 DFG agreement (98.3-302 TAF/YR) to be modeled with a variant to allow instream flows to be reduced to 69 TAF/YR under certain criteria. This spreadsheet takes as input the flow and water quality at Maze Rd, just upstream of the Stanislaus River on the mainstem San Joaquin River, as modeled in SANJASM. It then simulates the Stanislaus River from New Melones Reservoir to the confluence of the San Joaquin River, and on down to Vernalis. Output from STNMD99FSH includes flow and water quality at Vernalis, as well as resulting Stanislaus River operations.

Stanislaus River Basin

There is inadequate supply in the Stanislaus Basin to meet all of the contracts, permits, agreements and standards which apply during an extended dry period. The 1987 Agreement between USBR and DFG (1987 Fish Agreement) and the D-1422 Water Quality standards are assumed to have equal priority. The assumptions used in the STNMD99FSH are discussed below:

- For this modeling only, the 1987 Agreement between USBR and DFG outlining a minimum fishery flow volume of 98.3 - 302 TAF/YR is modified to use 69 TAF/YR in years when the Water Quality Standard is relaxed (see next bullet). Instream flows are not increased above 98.3 TAF/YR until all other requirements (Water Quality, CVP contracts, Dissolved Oxygen) are met in full.
- D-1422 Water Quality Standard of 500 mg/l TDS throughout the year at Vernalis was modified to be 500 mg/l TDS from April through September and 600 mg/l TDS from October through March in years where the end of February storage plus the March through September forecasted inflow is less than 1.7 MAF. The modified standards during the extremely dry years is consistent with historical operations during the 1987-1992 drought.
- The modified water quality standards are relaxed by a factor ranging from 1.2 to 1.11 during these same years. To obtain the modified standards two model runs were made. The first run contained the 1995 inflows. This run determined the Vernalis water quality relaxation factors and the associated CVP deliveries. A second run with 2020 inflows used the same Vernalis water quality relaxation factors and reduced the CVP contract water deliveries to obtain the same minimum storage level in New Melones reservoir as the 1995 run.

- Ripon Dissolved Oxygen (D.O.) requirement of 7.0 mg/l on a daily basis in the Stanislaus Basin Plan is modeled using a minimum flow of 222 cfs in June, 264 cfs in July, 267 cfs in August and 240 cfs in September. These flow criteria were extrapolated from historic 1995 operation records. In 1995, it was only necessary to release water quality water for Ripon D.O.; this provides a good estimate of the flow needed to meet the D.O. requirement.
- Deliveries to the Oakdale/South San Joaquin Irrigation Districts (water rights settlement contractors) are made based on the formula contained in the 1988 Water Rights Settlement Agreement. This settlement allows for deliveries of 600 TAF/YR in years when inflow to New Melones is greater than 600 TAF/YR. Reductions are taken based on the formula when the inflow to New Melones drops below 600 TAF/YR.
- CVP contract allocations are based on February end of month storage plus forecasted inflow. When the Water Quality requirements at Vernalis are relaxed and the instream flow allocation is 69 TAF/YR, then CVP contractors do not receive any water. The CVP contracts are set at a maximum of 155 TAF/YR for the 1995 level run to determine the Vernalis Water Quality relaxation factors for the dry years. The 2020 run used inflows to New Melones from DWR Bulletin 160-93, which are 6 TAF/YR less than the 1995 level. This reduced inflow was assumed to be consumptively used by upstream users who are not necessarily CVP contractors. The interim CVP contracts were reduced by 6 TAF/YR for the final 2020 run, to adjust for the decrease in inflow. CVP contractors receive 149 TAF/YR in all years when instream flow receives 302 TAF/YR. In all other years, allocations to CVP Contractors range between 0 and 149 TAF/YR.
- Goodwin releases were limited to 1250 cfs based on the 1987 Department of Fish and Game Agreement, except during flood control operations.

WSTRN99.WK4

This is a spreadsheet data pre-processor for SANJASM. It takes the DMC deliveries from PROSIM, allocates them to SANJASM nodes, and computes return flow quantities for each node. The resulting data file is input to SANJASM along with the DMC deliveries for PROSIM nodes 48 + 54 (Mendota Pool deliveries).

APPENDIX B

The PROSIM analysis for the estimation of CVP Yield was conducted with the most recent version of PROSIM, referred to as PROSIM 99.0, released by Reclamation in November 1998. This appendix presents the enhancements incorporated into the PROSIM 99.0 model by Reclamation and the U.S. Fish and Wildlife Service (Service), as compared to an older version of the model that was used to perform the Draft PEIS analyses. The surface water modeling conducted for the Draft PEIS, which was the basis for the information used in the yield study, used Reclamation's PROSIM model version 5.49 with some additional modifications specific to the Draft PEIS alternatives (Modified PROSIM 5.49). All of the Draft PEIS alternatives were evaluated at a future level of development using projected hydrology based on DWR Bulletin 160-93.

In comparison to Modified PROSIM 5.49, PROSIM 99.0 includes the following enhancements:

- A correction for the inconsistency in the input hydrology associated with the use of theoretical storage
- A revised nodal configuration
- Improved coordination of Trinity and Shasta Division operations
- Updated logic for implementation of 3406(b)(2) water management actions
- Other corrections to the input hydrology.

These enhancements provide a more refined estimate of the available water supply and a better characterization of CVP operations. The net cumulative effect of the hydrology corrections is a general reduction in the estimated average annual water supply available in the Sacramento Valley with more prevalent reductions in drier years.

A detailed presentation of the modifications incorporated into PROSIM 99.0 was presented by Reclamation at a public workshop on November 20, 1998. A brief summary of the major model logic and input hydrology improvements incorporated into PROSIM 99.0 as presented at the workshop are provided in the following sections.

PROSIM 99.0 MODEL ENHANCEMENTS

This section summarizes the major code and model logic improvements, input hydrology corrections, and other enhancements included in PROSIM 99.0, as compared to Modified PROSIM 5.49.

CODE AND MODEL LOGIC ENHANCEMENTS

Code and model logic changes include a correction for the inconsistency associated with the use of theoretical storage as well as other improvements to allow PROSIM 99.0 to better characterize CVP operations.

Theoretical Storage Operations

As part of the development of PROSIM 99.0, Reclamation modified the model logic and input hydrology to eliminate the inconsistency discovered in the use of theoretical storage. Withdrawals from theoretical storage generally represent additional groundwater pumping, above historic levels, that would occur at future levels of development due to increased water demand or reductions in available surface water supplies. Modified PROSIM 5.49 used a pre-operated time series of monthly values derived from the DWR Depletion Analysis Model. As described in the PROSIM M/M Technical Appendix to the DPEIS, the Depletion Analysis Model provides the basic hydrologic data that is used to develop the PROSIM input hydrology. The addition of this withdrawal time series to Modified PROSIM 5.49 gains was inconsistent with the logic used within PROSIM to allocate CVP surface water supplies to Sacramento Valley CVP Contractors.

In PROSIM, water deliveries to Sacramento Valley CVP Contractors are composed of available Sacramento River flow, local gains, and releases from CVP reservoir storage. The addition of the withdrawals from theoretical storage to the gains caused PROSIM to incorrectly credit for withdrawals as part of available CVP surface water supplies, thereby reducing the amount of water that needed to be released from Shasta Lake to meet contractor demands. This inconsistency occurred primarily in drier years when the Depletion Analysis had utilized withdrawals from theoretical storage to supplement limited surface water supplies.

To correct the inconsistency, Reclamation removed the withdrawals from theoretical storage from the gains and developed new model logic that includes a dynamic monthly calculation of withdrawals from, and recharge of, theoretical storage. This new logic is consistent with the DWR methodology for calculating withdrawals from, and recharge of, theoretical storage and is consistent with CVP allocation guidelines for deliveries to Sacramento Valley CVP Contractors. As compared to Modified PROSIM 5.49, these PROSIM 99.0 corrections do not change the amount of water delivered to CVP Sacramento River Water Rights Contractors, but do increase releases from Shasta Lake in drier years to meet these contract obligations. As a result, there may be less CVP reservoir storage available to meet other CVP operational objectives, including deliveries to water service contractors.

Revised Node Configuration

To better characterize the locations of the major agricultural diversions within the Sacramento River Basin, six additional nodes were added to PROSIM 99.0. A model node represents a physical location where accumulated gains, losses, diversions, and return flows are accounted. Descriptions of the locations of the additional nodes, including corresponding Modified PROSIM 5.49 node numbers and associated DWR Depletion Areas (DA), are presented in Table B-1. Figure B-1 shows a schematic of the PROSIM 99.0 node configuration.

TABLE B-1

ADDITIONAL PROSIM 99.0 NODES

PROSIM 99.0 Node Number	Modified PROSIM 5.49 Node Number	Associated DWR DA Number	Description of Node Location
4	4	62	Shasta Lake
66	4		Keswick Dam
61	5	58	DA58 Diversions
62	5		Confluence of Sacramento River and Clear Creek
5	5		Red Bluff Diversion Dam
9	9	12	Tehama-Colusa Canal and Associated Diversions
67	9	12	Glenn-Colusa Canal and Associated Diversions
59	9	12	Provident/Princeton-Codora-Glenn/Maxwell Diversions
60	9	12	Colusa Basin Drain

Trinity - Shasta Division Operations

To better characterize the coordinated operation of the Trinity and Shasta Divisions of the CVP, Reclamation developed a new storage-diversion relationship to determine the amount of water to divert from the Trinity River Basin to the Sacramento River. This storage-diversion relationship accounts for both Shasta and Clair Engle Lake storage levels when determining the minimum amount of water to be diverted in a given month. The relationship in Modified PROSIM 5.49 accounted for Clair Engle Lake storage only. The minimum monthly and seasonal diversion targets used in this new relationship were developed by Reclamation based on current Trinity-Shasta Division operations.

INPUT HYDROLOGY ENHANCEMENTS

In addition to modifications to the PROSIM model logic, Reclamation also incorporated a number of improvements associated with the model input hydrology. These improvements allow better characterization of the projected future available water supply in the American and Feather River Basins. Following is a brief discussion of the hydrology modifications.

American River

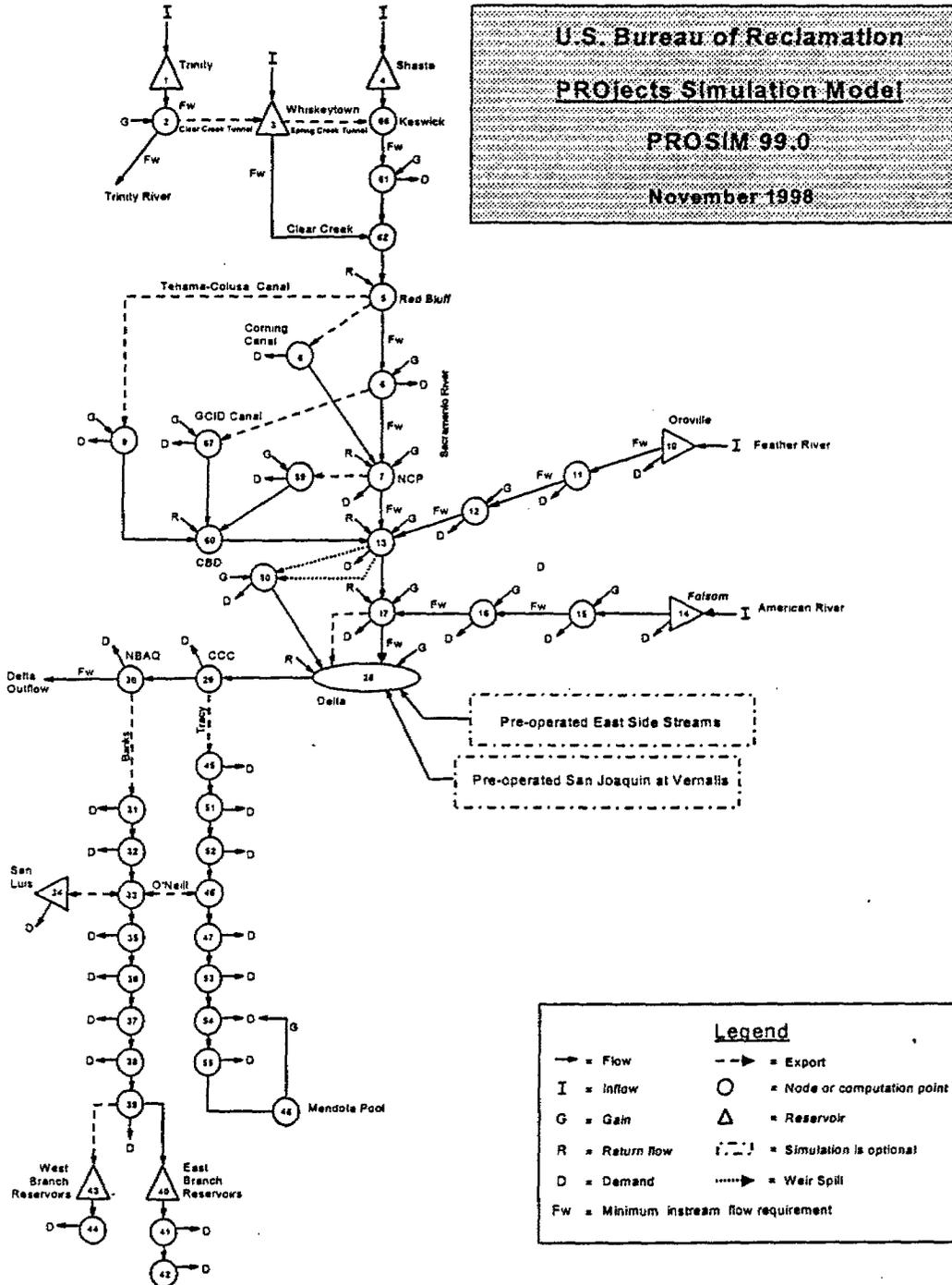
Two modifications were made to the PROSIM input hydrology associated with the American River. The first change included revised estimates for losses to groundwater along the lower American River. In the Draft PEIS, annual losses were assumed to be 42,000 acre-feet per year and were incorporated as a twelve month repeating pattern. PROSIM 99.0 includes a time series of monthly seepage losses developed as part of the American River Water Resources Investigation (ARWRI). The use of the time series increases average annual losses to groundwater to about 130,000 acre-feet per year.

The City of Sacramento is located in DA 59, but it is included in DWR's calculation of DA 70 historic depletion. To be consistent with DWR accounting, the second change corrected double counting of historic City of Sacramento exports in the original DA 70 PROSIM input hydrology. As a result, the revised DA 70 water supply is reduced by about 48,000 acre-feet on an average annual basis.

Feather River

Two corrections were made to the input hydrology associated with the Feather River. The first change corrected double counting of inflow from Kelly Ridge, downstream of Lake Oroville, by modifying the DA 69 water supply calculations. This reduced available water supply in the Feather River Basin by about 70,000 acre-feet on an average annual basis. Secondly, the location of return flows from Feather River diversions were adjusted to be consistent with DWR assumptions in the DWRSIM planning model. In the Draft PEIS, return flows were located at downstream nodes on the Feather River. In PROSIM 99.0, return flows are located on the Sacramento River below Verona.

FIGURE B-1



Department of the Interior
Process for Implementation of
Fish Protection and Habitat Restoration
Actions Proposed or Likely to Use (b)(2) Water

The Fish and Wildlife Service (FWS) has identified actions, which are set out in the following chart, that contribute to the CVPIA goal of doubling the natural production of anadromous fish. The actions were developed as part of the Anadromous Fish Restoration Program [CVPIA Section 3406(b)(1)] and address several of the identified population limiting factors including the needs for improved instream flows for adult upstream migration, spawning, egg incubation, rearing, and juvenile outmigration; reductions in flow fluctuations; temperature control; and safe passage of juvenile past points of diversion and through the estuary. The actions were developed with extensive input from fishery experts representing agencies and stakeholders and biologists from throughout the western United States. Many of these fish actions were described in the Appendix A of the November 20, 1997, CVPIA Final Administrative Proposal on the Management of Section 3406(b)(2) Water. Additional actions have been included in this list based upon information developed with public input during the AFRP process. This list will be used to implement Section 3406(b)(2) actions and to ensure that Interior can carry out the Congressional direction to dedicate and manage 800,000 acre-feet of CVP yield for fish, wildlife and habitat restoration and other purposes each year. This list provides a basis for fish actions that will be available to coordinate with and support an Environment Water Account developed through the CALFED process.

The FWS anticipates selecting from the listed actions for the annual management of yield dedicated under (b)(2). Not all actions on the list will be implemented in any given year, but instead the FWS will annually select the appropriate actions for use of the (b)(2) water based on biological needs, hydrologic circumstances, and water availability. The FWS will select appropriate actions for any given year following consultation with the Bureau of Reclamation and the California Department of Water Resources and in cooperation with the California Department of Fish and Game and consistent with the stakeholder coordination process described below.

To assist Interior in implementing the methodology and (b)(2) policy set forth in the final decision, Interior has established a B2 Interagency Team (B2IT). Interior will seek the participation of California Department of Water Resources (DWR) and California Department of Fish and Game (DFG) on the team. With the State's agreement, this interagency team of project operators and project and resource agency biologists will consist of representatives from the following agencies: DWR; DFG; Reclamation; FWS; and National Marine Fisheries Service (NMFS).

To assist the B2IT and Interior in developing the annual actions to dedicate and manage the 800,000 acre feet, Interior has established the following stakeholder process. The stakeholder process will be used as an opportunity for the project operators and resource agencies to present and discuss information and receive input on the development of the annual b(2) fishery action plan and how the plan is integrated into the operations forecast.

This will be accomplished through bi-annual workshops with all interested parties.

- A fall (mid-November) workshop will be held to present, discuss and receive input on the

annual b(2) fishery action plan and the operations forecast for the coming water year (October - September).

- A second workshop will be held in mid-winter (January or February) to present, discuss and receive input on updates to the annual b(2) fishery action plan resulting from the fall/winter operations of the project. This will also provide information on the updated operations forecast and resulting water supply allocations.
- Additional information will be made available through the monthly CALFED Operations Group meetings as the annual b(2) fishery plan and operations forecast are adjusted to reflect more current hydrologic and biological data.

The B2IT process will coordinate the development and management of the annual b(2) fishery action plan. The following process has been established and will be updated monthly:

- During the month of September Reclamation will prepare an annual operations forecast representing the 1992 baseline conditions and the conditions under the 1995 Water Quality Control Plan (WQCP).
- Based on the operations forecast using the 1995 WQCP the FWS will consult with biologists from the other federal and state agencies (DWR, DFG, FWS, Reclamation and Service) in preparing an annual b(2) fishery action plan to be presented to the Reclamation and DWR operations staff.
- Reclamation and DWR operations staff will prepare a forecast of project operations for the coming water year that incorporates the annual b(2) fishery action plan. An iterative process between the operations staff and biologists will take place in developing the final operations forecast.
- Weekly coordination of the B2IT will be used in updating the b(2) fishery action plan and monthly operations forecast to reflect current hydrologic and biological data.
- Weekly, or more frequently as needed, coordination will occur between Reclamation and FWS regarding incidental operational changes and b(2) accounting. Reclamation and the FWS will consult with other members of the B2IT as necessary to implement any operational changes.

As measures are implemented and evaluated, reassessment of their relative contribution to the restoration of Central Valley fish populations may result in changes to the actions or additions/deletions to the list. The FWS anticipates that (b)(2) water used for anadromous fish restoration will provide concurrent benefits to other fish and wildlife, will assist in meeting water quality control plan (WQCP) standards, and will help to meet additional Endangered Species Act obligations.

The list is not all inclusive but represents those actions believed at this time to be most important. While the FWS will attempt to prioritize the actions over the long term and implement them in order of priority, it must be recognized that the biological value and water cost, and therefore, the priority, of an action will depend largely on the hydrologic and ecological circumstances at the time of implementation. As actions are implemented, they will be evaluated, and an assessment of their relative contribution to CVPIA goals may result in changes to the actions or additions/deletions to the list.

It must be recognized that (b)(2) will not provide sufficient water to implement all of the actions each year and that the extent to which an action is needed or able to be implemented will depend on the hydrology at the time.

POTENTIAL FISHERY ACTIONS

FISH ACTIONS	BIOLOGICAL BENEFITS
<ul style="list-style-type: none"> • Improve instream flow conditions with releases from CVP reservoirs (target flows described in AFRP's May 1997 Plan): <ol style="list-style-type: none"> 1) Sacramento River <ul style="list-style-type: none"> - Rio Vista flow (December through January per WQCP) - Freeport and Knights Landing flows (May) 2) Clear Creek 3) American River 4) Stanislaus River • Close Head of Old River Barrier : <ol style="list-style-type: none"> 1) October 2) mid-April to mid-May, whenever flows are $\leq 7,000$ cfs. • Close Delta Cross Channel gates: <ol style="list-style-type: none"> 1) October through January 2) February through June (per WQCP) • Curtail total Delta CVP/SWP export during critical outmigration periods: <ol style="list-style-type: none"> 1) November through January 2) April through June 3) July through September • Maintain export/inflow ratio at $< 35\%$, February through June (per WQCP) • Maintain X2 standard (per WQCP) • Additional X2 requirements to 1962 level of development, March-June • Ramp exports up gradually after export curtailment • Maintain positive QWEST flows • Increase end-of-September storage in CVP reservoirs 	<ul style="list-style-type: none"> • Improves conditions for upstream migration, spawning, egg incubation, and rearing of anadromous fish. Increases survival of striped bass eggs and larvae and increases survival of other juvenile anadromous fish and resident estuarine fish. • Retains attraction flow in San Joaquin River and improves conditions for upstream migration of chinook salmon. Increases survival of juvenile salmon outmigrants from the San Joaquin Basin. • Increases survival of downstream migrant anadromous fishes from the Sacramento Basin. • Increases survival of outmigrating juvenile spring-run chinook salmon and other anadromous and resident estuarine fish by reducing entrainment, and improves habitat in the South Delta. Improves survival of larval and juvenile striped bass and other estuarine species. • Increases survival of juvenile anadromous fish and estuarine resident fish. • Increases abundance of estuarine and anadromous fish and their food sources. • Provides ecosystem benefits beyond those provided by existing X2 standard. • Increases survival of juvenile anadromous and resident estuarine fish by reducing entrainment and improves habitat in the South Delta. • Increases survival of juvenile anadromous fish and resident estuarine fish. • Provides improved temperature control for releases in early fall for spawning salmon.

**Department of the Interior
Response To Comments Regarding (b)(2) Implementation Decision
October 5, 1999**

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>The yield modeling for the Stanislaus River does not show enough water being provided for instream fishery needs.</p>	<p>DFG</p>	<p>Interior recognizes that it has a responsibility to provide a certain amount of water for Stanislaus River fishery purposes before it has any right to Project water at New Melones. The yield modeling demonstrates that, in some years, New Melones does not have enough water to fulfill even its permit requirements for water quality and fishery needs.</p> <p>In years when New Melones cannot satisfy all its permit requirements, the amount of flow provided for each permit requirement is reduced evenly. In years when New Melones can satisfy its minimum permit conditions (including the 98,300 AF for fishery needs), the models show project purposes receiving the next increment of supply before fish receive additional water, as provided in the 1987 DFG Agreement. In any case, the 1928-34 modeling does not necessarily reflect how Interior will operate New Melones in the future. These issues will be discussed in the stakeholder process for development of a long-term New Melones operations plan.</p>
<p>Upstream storage releases that are diverted by the CVP to San Luis Reservoir should not be counted as (b)(2) water.</p>	<p>DFG</p>	<p>Interior disagrees. Consistent with the Court's Memorandum Opinion, water released for instream, (b)(2) purposes may be diverted for a second purpose downstream. Because it has been used for (b)(2) purposes at one time, it is reasonable for such water to be counted as a (b)(2) use.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Upstream (b)(2) releases should be allowed to flow through the Delta -- and not be subject to CVP/SWP diversion -- at anytime throughout the year, not just during the February-September period.	DFG	Interior applied this provision to releases from February 1 through September 30 because that is generally when Delta outflows will be needed to move the fish through the Delta into saline water. While Interior considered the suggested approach, Interior does not believe that it would represent the wisest use of the resource in light of the limited biological benefit.
The rationale for allowing upstream releases to flow through the Delta should be expanded to include avoidance of diversion effects on Delta fish.	DFG	Agreed. Reducing diversion impacts on Delta fish may be one of the biological benefits that FWS would determine justified additional Delta outflow is necessary.
COA should be renegotiated to provide an equitable approach to accounting for the effects of the CVPIA on SWP operations.	DFG	Agreed. Interior and DWR already have agreed to begin negotiations to modify the COA.
Using 800,000 AF every year does not implement the statutory language allowing reduced use of (b)(2) supplies.	DFG	As DFG notes, Interior has identified shortage criteria for dry years. While Interior anticipates using the full 800,000 AF in most years, it will rely on the statutory authority to make a finding that less water is needed, if such finding is biologically justified.
Modeling of simulated CVP operations must recognize storage releases for other purposes (e.g. water quality, flood control).	DFG	Agreed. The CVP simulated operations model will acknowledge releases required for other non-(b)(2) purposes.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
During the transition to the hydrologic-year accounting, Interior needs to coordinate between (b)(2) actions and existing fishery flow agreements based on the contract year.	DFG	Interior recognizes the importance of coordination. It believes that the Decision establishes a process that will provide the coordination that DFG seeks. Interior will continue to explore this issue during (b)(2) implementation.
Coordination process for (b)(2) planning and implementation should be memorialized in an agreement.	DFG	The Decision provides greater detail on the process for working with stakeholders and other agencies, particularly DWR and DFG in the planning and implementation of (b)(2) actions. Interior is willing to consider negotiating a specific MOU reflecting this process, if the state agencies believe the process outlined in the Decision does not provide sufficient process documentation.
Decision should define how (b)(2) actions will adjust to new public trust allocations for instream use.	DFG	The statute requires Interior to dedicate and manage (b)(2) yield <i>annually</i> , which makes (b)(2) an inherently flexible tool that necessarily will adjust to new hydrological and biological information, including public trust allocations.
Reducing Interior's obligation to makeup SWP losses when SWP pumps upstream releases provides a disincentive for SWP to cooperate with Interior in implementing (b)(2). Need to renegotiate COA.	DWR	Interior understands DWR's perspective on credits for upstream releases. Interior will continue to pursue this issue in our anticipated negotiation of the COA. Interior looks forward to working with DWR to resolve the issue on an interim basis before proceeding to a full COA negotiation, where a broad array of new project operating conditions will need to be addressed.
Interior should commit to a well-defined process for state-federal coordination.	DWR	Agreed. The Decision provides additional detail as to how Interior and state agencies have agreed to proceed in developing and implementing (b)(2) each year.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
What happens if use of the entire 800,000 AF is not practical or cannot be accomplished in cooperation with SWP?	DWR	Interior will implement all parts of (b)(2), including the provisions for dry-year reductions and release of some (b)(2) water for other purposes when not needed. The statute's requirement of <i>annual</i> dedication and management demands that Interior respond to situations where actual use of the full 800,000 AF is difficult or impossible on a case-by-case basis. While Interior understands DWR's concerns, it is committed to using all of its flexibility to accomplish full (b)(2) implementation.
Interior and DWR should work together in calculating the use of (b)(2) water.	DWR	Agreed. The Decision reflects additional refinements that include joint estimations of (b)(2) use. The 1999 accounting used the number that DWR provided for how much it had used in cooperating with Interior on (b)(2) implementation.
Interior will have to manage carefully the CVP deliveries during the irrigation season to avoid the San Luis Reservoir "low point" and not unnecessarily reduce allocations.	DWR	Agreed. Interior and DWR have formed an interagency team of operators to review the forecasts and allocations of (b)(2) actions. In addition, the B2IT will coordinate with the CALFED Ops Group regarding (b)(2) forecasts, allocations and other operational issues.
Interior should develop, in advance, sources of supply for repayment of SWP water lost due to (b)(2) cooperations	DWR	The Decision reflects Interior's commitment to work with DWR early in the water year to forge a plan for make-up of the SWP's export reductions.
Interior should reimburse DWR for increases in SWP power costs due to (b)(2) actions.	DWR	Agreed. Interior and the State will form an interagency team, for estimating and reviewing power costs. Interior is committed to reimbursing the state for such costs.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Interior should commit to develop in CALFED additional actions to fill the CVP share of San Luis Reservoir by early spring.	DWR	Interior will continue to work in CALFED, particularly through the Water Management Development Team, to develop new options for increasing water supply for all beneficial uses.
Interior should acquire water to make-up for lost CVP contractor deliveries, if the CVP's WQCP responsibilities exceed 450,000 AF in 2000 and the Accord is not extended.	DWR	Traditionally, Interior has fulfilled its water quality responsibilities by reducing the CVP yield delivered to contractors. Interior has no plan, at this time, to acquire water to make-up for such water quality responsibilities. Interior notes that those responsibilities may change when the SWRCB issues its WQCP implementation plan.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>There is no relationship between proposed accounting methods and the baseline yield.</p>	<p>EBMUD, SLDMWA, CFBF, Agricultural Water Contractors</p>	<p>Interior has calculated the CVP yield in accordance with the statutory definition. The accounting of the amount of yield dedicated annually does not affect the determination of the underlying yield, because the statutory definition of yield incorporates specific conditions that are not affected by subsequent actions to use the dedicated water.</p> <p>Consistent with pre-1992 CVP practice, Congress defined CVP yield based on the 1928-34 period to ensure that 800,000 acre-feet of CVP's core supply would be used for (b)(2) purposes, not only in critically dry years but in wetter years as well. The calculation of CVP yield for (b)(2) purposes is a one-time action, while the dedication and management must be annual, based on the hydrologic conditions for the current year.</p> <p>Due to the complex nature of CVP operations and the variability of hydrologic conditions, each metric used for accounting requires a different explanation for why it is an accurate measure of the use of CVP "yield," as that term is defined in (b)(2). The Decision provides those explanations.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>Interior must coordinate closely with DWR in implementing fishery actions.</p>	<p>SWC, DWR</p>	<p>Interior agrees. Interior already coordinates closely with DWR and DFG in implementing (b)(2), as required by the statute. Due to the short Court-imposed time line for developing the proposed (b)(2) metrics, Interior was able to consult with the state only once before issuing the Proposed Decision. Since that time, Interior has met with DWR and DFG several times to chart a course for the 1999-2000 water year. It is intended that near the beginning of each water year, both state and federal agencies will have a plan for implementing (b)(2) for that year, which would be adjusted as hydrological or biological conditions change. A process for assuring that effective coordination occurs with DWR and DFG, as well as with interested stakeholders, has been incorporated into the final decision in response to public comments and the consultation with the State.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>Allows "extraordinary discretion" to use (b)(2) water for secondary (b)(2) purposes (i.e. ESA and Clean Water Act requirements), leaving little available for CVPIA restoration.</p>	<p>Environmental Groups</p>	<p>The statute requires Interior to "dedicate and manage <i>annually</i>" (emphasis added), which provides broad discretion and requires Interior to use that discretion to respond to the unique hydrological and biological conditions each year.</p> <p>Consistent with the language in the statute, Interior will continue to use the (b)(2) water for the primary purpose of implementing the fish, wildlife, and habitat restoration purposes of the Act, particularly anadromous fish restoration. It should be noted that the Delta water quality control plan include standards that promote restoration of certain fish. As for ESA uses, Interior plans to use water generally for planned, not reactive, actions that help endangered species.</p> <p>In response to comments on the broad discretion, Interior has included in the final decision a description of a process that Interior plans to follow in developing the annual (b)(2) fishery plan. That process will include participation by project operators, and project and resource agency biologists, and will provide for stakeholder discussions. In exercising its discretion, Interior will carefully consider stakeholder input it received in the process will be followed.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>Use of the (b)(2) water for WQCP requirements and post-enactment Endangered Species Act requirements is "double counting."</p>	<p>Environmental Groups</p>	<p>Interior disagrees. The statute clearly authorizes the use of (b)(2) water to "assist" in meeting Water Quality Control Plan requirements and to "help" meet post-enactment Endangered Species Act obligations of the Central Valley Project. In 1999, Interior has applied (b)(2) water to some -- but not all -- ESA actions. Moreover, applying (b)(2) water to ESA and WQCP purposes is not double-counting.</p>
<p>Interior should require findings of no need for primary purpose before using (b)(2) water for secondary purposes</p>	<p>Environmental Groups</p>	<p>Interior disagrees. The CVPIA delegates substantial discretion to Interior agencies in managing the (b)(2) supplies. Apportioning such supplies among the different purposes is a cornerstone of that discretion. Requiring a finding of no need before (b)(2) water could be used for uses other than the primary purpose would unnecessarily hinder the flexibility provided by the statute to manage the dedicated water in a manner most beneficial to the environment. Therefore, such findings are neither necessary nor reflective of wise resource management..</p>
<p>The SWP receives a windfall by CVP reimbursing water used for (b)(2) and then SWP pumping (b)(2) upstream releases.</p>	<p>Environmental Groups</p>	<p>Interior remains committed to the principle that use of (b)(2) water cannot impact the SWP. Interior, however, recognizes that upstream (b)(2) releases could lead to a SWP windfall unless otherwise accounted for. Interior will seek, as part of renegotiating the COA, to receive a credit toward any make-up obligation for any increases in SWP supply that result from (b)(2) releases.</p>

Response To Comments Regarding (b)(2) Implementation Decision
October 5, 1999

Comment	Organization	Response
Interior is obligated to use (b)(2) for all water quality and ESA requirements.	SLDMWA	Interior disagrees. The statute does not support this contention. Implementation of the fish, wildlife, and habitat restoration provisions of the statute is clearly identified as the "primary" purpose for which the (b)(2) water is to be used. Post-1992 ESA obligations and water quality are secondary purposes. Further, those secondary purposes are framed in terms of "helping" and "assisting," suggesting that Congress understood that water other than that dedicated under (b)(2) would be used for those purposes.
November 19, 1997 legal opinion by Interior's Solicitor is incorrect.	Smiland & Khachigian	The November 19, 1997, legal opinion addressed the November 20, 1997, Administrative Proposal. The Interim Decision of July 14, 1999, and the final decision adopt a different accounting system than that analyzed in the November 19, 1997, Solicitor's opinion.
Contradicts the terms of the Bay/Delta Accord.	State Water Contractors	Interior disagrees. The Bay-Delta Accord language cited by the State Water Contractors describes an intention to use CVP/SWP operational flexibility to eliminate, to the extent possible, loss of project water supplies. Interior agencies have worked continuously through the CALFED operations group to identify and implement project flexibility options. The Accord does not commit Interior to using (b)(2) water for SWP make-up. Indeed, the Accord provides for a credit to (b)(2) only for use of CVP water. (See "Institutional Agreements, paragraph 3", of the Accord.)

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
CVPIA goal is balance, reasonableness, and sustainability	EBMUD, BDUC, SMUD, CFBF, SWC, SCVWD	Interior agrees that one of the purposes of the CVPIA is to "achieve a reasonable balance among competing demands" for use of CVP water. One of the means by which Congress sought to achieve that balance was by dedicating the (b)(2) water to fish, wildlife and habitat purposes. Interior's decision reflects a balanced, reasonable implementation of its (b)(2) mandate, considering the significant reallocation of CVP yield that Congress enacted.
Use the contract year in accounting.	WAPA, SMUD	Interior disagrees. As indicated in the Decision, Interior cannot use the March through February accounting period and manage (b)(2) water with any degree of efficiency and accuracy. Environmental use, unlike agricultural contract use, is year round and knowledge of the hydrology well before the accounting year is over is essential. The October through September period provides this knowledge and promotes certainty. Further, the calculation in early February of the amount of (b)(2) water used for upstream actions in the winter months will be made in sufficient time for the agencies to make allocation decisions in a timely fashion.
Improperly allows diversion of (b)(2) water for consumptive purposes without making the required findings.	Environmental Groups	Interior disagrees. Water used for (b)(2) purposes, once it has fulfilled that purpose, is available for capture and reuse as described in the Interim Decision. This is consistent with the March 1999 Memorandum Opinion of the Court. That is a different situation than would occur under Section 3406(b)(2)(D) in which Interior "finds" that the water is not needed at all and not used and subsequently made available for other project purposes.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>Proposed Decision reflects lack of public process and a need for cooperation and coordination.</p>	<p>WAPA, SMUD</p>	<p>Interior has hosted an extensive public process relating to the management and accounting for (b)(2) water since 1993. Many viewpoints -- including most of the comments reflected herein -- have been expressed, considered and addressed. Due to the compressed schedule for developing the Interim Decision imposed by the Court, Interior waited until it could present a proposal for public consideration before inviting additional public comment.</p> <p>Interior will continue to engage other agencies and the public as it annually dedicates and manages the (b)(2) water, particularly through the CALFED operations group. In response to comments regarding the desire for public comment and agency coordination, Interior has set out in its Final decision its plan for the process by which (b)(2) management actions will be developed and implemented. That plan involves extensive state and federal coordination, as well as stakeholder and public participation.</p>
<p>Clarify whether water can be banked, transferred or exchanged during fall period.</p>	<p>EPA, BDUC, SDWA</p>	<p>The issue is clarified in the final decision. Banking, transfers, and exchanges of (b)(2) water can occur in the 10/1-1/31 period as well as in the 2/1-9/30 period, provided the water is identified for banking or transfers before it is released. Use of water for such purposes will be counted as it is released, not relying on the change in storage metric.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Water banked or transferred/exchanged under (b)(2) should not have last priority in use of storage and export facilities.	EPA	The accounting for such actions takes place at the time it is banked or transferred. Allowing the action to interfere with the storage, diversion, or delivery of water for other purposes of the CVP would cause additional impacts, which would then be subject to further accounting.
Underestimates yield, by including biological opinion for winter-run chinook salmon, modified D-1400 flows on the American River, and Clear Creek flows.	SLDMWA	<p>Interior disagrees. Interior used the express terms of (b)(2) to determine which operational requirements applied. The winter-run salmon consultation between NMFS and Reclamation was initiated and a temporary opinion was in place before the CVPIA was enacted. Moreover, the minimum temperature was imposed by the SWRCB in 1990.</p> <p>As for Modified D-1400 flows, the CVP has had an agreement with the State for more than two decades to provide Modified D-1400 flows when hydrological conditions allow.</p> <p>Clear Creek flows similarly are consistent with historical modifications to minimum flows provided by agreement with the California Department of Fish and Game.</p>
Yield calculation is inconsistent with previous methods of yield calculation	CCWD, SLDMWA, SWC	Interior agrees that the yield calculation is not identical to that historically performed. However, that difference is mandated by the language of the statute, which requires different methods for calculating yield for (b)(2) purposes. Interior calculated yield in accordance with the statutory definition of yield – “delivery capability” adjusted for the 1992 operating requirements.

Response To Comments Regarding (b)(2) Implementation Decision
October 5, 1999

Comment	Organization	Response
Analysis of impacts from this proposal does not appear in CVPLA PEIS.	CCWD, WAPA, SMUD	The nature of the (b)(2) mandate does not require compliance with NEPA before implementation, as confirmed by the Ninth Circuit Court of Appeals. The draft PEIS displays the impacts of implementation of (b)(2) under scenarios contemplated at the time that draft was prepared. The PEIS is being evaluated to determine whether or not the impact analysis will need to be supplemented to display the impact of the final (b)2 accounting decision. That review is not yet complete, however.
No CVP power impacts have been evaluated.	WAPA, SMUD,	Implementation of (b)(2) is a statutory mandate that, as the Ninth Circuit Court of Appeals has affirmed, cannot and need not wait for analysis of impacts under NEPA. Nonetheless, the power impacts of (b)(2) implementation under scenarios contemplated at the time the PEIS was drafted are displayed in the draft PEIS.
Causes water supply and water quality impacts to Los Vaqueros Reservoir.	CCWD	CCWD may share in annual reductions to its CVP water supply as a result of (b)(2) actions. Patterns of pumping may also change as a result of (b)(2) actions, which may affect CCWD's separate pumping. As Interior annually dedicates and manages its (b)(2) supplies, it will work through the CALFED Ops Group to try to address CCWD's Los Vaqueros concerns.
Restricts flexibility of system, particularly in wet years.	SLDMWA, Agricultural Water Contractors, BDUC, SCVWD	The dedication of CVP yield under (b)(2) places an additional demand on the CVP. Such additional demands inherently reduce the system's flexibility. In order to maximize flexibility, within the requirements of the statute, operation of facilities, including export pumps, will be forecasted sufficiently in advance to allow for decisions about allocations and review of delivery schedules to avoid interruptions to CVP water supplies.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Interior should bank unused (b)(2) water, particularly in 1999.	Environmental Groups	Decisions as to banking (b)(2) water will consider a host of related hydrological and biological issues. Assuming the Court's Order to use precisely 800,000 AF during the March-February period remains in effect, Interior intends to use the remaining amount of 1999 (b)(2) supplies by February 29, 2000.
The (b)(2) account should get credit for pumping increases due to AFRP actions and for the additional natural inflow stored due to reservoir levels reduced by upstream releases.	Environmental Groups	CVPIA did not create a (b)(2) water account so it could build fishery restoration water resource levels. Instead, it committed a set amount of water to be used every year, unless the entire amount is not needed. Supplies for (b)(2) therefore will not generally receive increases. Moreover, the example's assumption that there is more water available due to (b)(2) releases is incorrect. The (b)(2) releases merely reduce subsequent flood control releases.
Attachment 2 needs more detail, with more scientific information and a default fishery action plan	Environmental Groups	Attachment 2 was not intended to be a comprehensive compilation of the biological background for the measures, but instead was intended to provide stakeholders with summary information about the range of fishery restoration actions for which the (b)(2) water could be used. Substantial scientific documentation for those fishery measures can be found in AFRP documents and CALFED studies. Interior does not believe it is workable to develop a "default" fishery action plan, given that the hydrologic and biological conditions in every year are different and hence the needs of the fishery will also be different. Attachment 2 now describes a coordination process where Interior will convene two public workshops (fall and winter) to present and discuss the annual (b)(2) fishery action plan.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Does not provide equal priority to other project uses, with contractors being harmed more than fishery purposes.	SLDMWA	While the CVPIA established fish and wildlife purposes on an equal footing with irrigation and domestic purposes, CVPIA's other mandates gave specific directions that were intended to balance the new fish and wildlife purposes with the well-established other project purposes.
Using all 800,000 AF when there is little or no environmental benefit from using some portion is punitive.	BDUC	Interior does not intend to act punitively. It will implement all provisions of (b)(2), including the option of allocating (b)(2) water to other Project purposes when it is not needed.
Monthly changes in the annual (b)(2) operations plan will make CVP deliveries to contractors too uncertain.	SLDMWA	Effective management of the (b)(2) supplies requires Interior to respond to changes in hydrological or biological conditions. Interior believes that it has developed a process for developing and implementing the (b)(2) plan in a manner that will allow allocation decisions to be made in a timely fashion so as to provide sufficient planning time to contractors.
Extend change-in-storage metric to entire water year.	Environmental Groups	Stopping use of the change-in-storage metric in February each year is necessary for effective management of CVP yield for (b)(2) and all its other purposes.

Response To Comments Regarding (b)(2) Implementation Decision

October 5, 1999

Comment	Organization	Response
<p>Change-in-storage metric means export water supplies will be reduced in wet years.</p>	<p>SLDMWA, Agricultural Water Contractors, BDUC, CFBF</p>	<p>The Decision describes the dedication and management of the 800,000 acre-feet annually, as Congress required in the CVPIA. In implementing the Decision, Interior anticipates that all 800,000 acre-feet will be dedicated each year, subject to temporary reductions during critically dry years. Interior agrees that operations in wetter hydrologies may provide the desired upstream conditions for fish. In such circumstances, additional (b)(2) water could be provided through export reductions to improve Delta habitat. Under no circumstances would the usage of (b)(2) water, accounted for pursuant to the Accounting Methodology, total more than 800,000 acre feet. The Secretary, however, may consider whether to use the (b)(2) water for other project purposes when it is not needed, as provided by the statute.</p>
<p>Upstream releases should not be available for export by the CVP.</p>	<p>CDWA</p>	<p>Congress dedicated the (b)(2) water for environmental restoration purposes. If FWS does not specify that the release is needed for Delta outflow and does not take measures to protect the specified flows, then there would be no identified biological basis for not allowing the water to be available for recapture and reuse by other downstream water rights holders including, but not limited to, the CVP and SWP. While Interior is committed to fully using the (b)(2) water for environmental restoration purposes, it is also committed to not administering the provision in a punitive fashion.</p>
<p>San Luis Reservoir water should be used for (b)(2) actions.</p>	<p>CDWA, SDWA</p>	<p>Because San Luis depends on export pumps – and not natural inflow – to increase its available water, releases for fishery actions would cause additional impacts on CVP yield, which would then be subject to accounting.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>When upstream releases can be offset by hydrology, then Interior will have to rely on greater export curtailments as the most reliable mechanism for using all the (b)(2) water.</p>	<p>SCVWD, SLDMWA, Agricultural Water Contractors</p>	<p>Exports will not be reduced based only on a need to use the entire 800,000 AF. Biological justification will be required. For example, adjusting export levels provide both direct and indirect habitat improvements and benefits to fisheries in the Delta. Export adjustments promote Delta fishery habitat and reduce entrainment at the pumps.</p>
<p>Export contractors reliant on Delta pumps suffer the most.</p>	<p>CFBF, SCVWD, Agricultural Water Contractors</p>	<p>Export contractors are vulnerable because deliveries to them are dependent on exports from the Delta, which is the most delicate and vulnerable part of the watershed's ecosystem. Because of the importance of the Delta ecosystem in reaching the restoration goals of the statute, many of the fishery actions are necessarily directed toward Delta habitat and fishery survival. Thus, while impacts are not intentionally directed toward the export contractors, those impacts do tend to affect the export contractors.</p>
<p>Protect rights of SWP and its contractors</p>	<p>SWC</p>	<p>Interior's policy is that (b)(2) actions will not be permitted to adversely affect the SWP, and that any adverse impacts will be made up. Interior will work closely with DWR and DFG as it proceeds in annually dedicating and managing the (b)(2) supplies.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Contradicts COA.	SWC, SCVWD, DWR	Interior and the State acknowledge that the COA must be renegotiated to address the new standards in the Water Quality Control Plan, Endangered Species Act biological opinions, and CVPIA. This process is expected to take a significant effort. In the interim period the agencies will seek agreement on equitable sharing of water supplies and obligations in the basin. Interior and the State of California intend to evaluate how operating in accordance with the Decision affects the sharing and what changes in the COA may need to be pursued.
Work within the CALFED process on the Delta, EWA	BDUC, SCVWD , CCWD	<p>The provisions for water banking, transfers/exchanges are intended to increase the flexibility in meeting the objectives of a CALFED water management strategy. The (b)(2) supplies will form part of the baseline from which CALFED's Environmental Water Account and its water management strategy will be developed.</p> <p>In response to comments, Interior has modified the Decision to more fully describe the process for developing and implementing the annual plan for (b)(2) water, so as to include other agencies and stakeholders, in a manner that will be consistent with CALFED.</p>
The modeling assumptions used in calculating the pre-CVPIA yield should not assume that M&I contractors could sustain shortages of 25 Percent.	CCWD	Interior disagrees. The criteria for reducing the 800,000 acre-feet is based on hydrologic conditions that occur only in the driest 10 percent of the years studied. The criteria for shortages to M&I and agricultural contractors are based on apportioning available water supplies, which are affected by other constraints in addition to hydrologic conditions.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
Operations of New Melones must abide by the Bureau of Reclamation's permit requirements.	SDWA, CDWA	Interior generally operates New Melones consistent with the terms in its permits.
The New Melones Interim Operations Plan ignores the Bureau of Reclamation's permit requirements.	SDWA	The New Melones Interim Operations Plan is not at issue in the Decision. Nonetheless, Interior disagrees that the Interim Operations plan is inconsistent with the permit requirements, and it should be noted that these requirements have been met since adoption of the Interim Operations Plan for the short-term.
There is no basis for "relaxing" the water quality standard in the baseline. Water quality is not met in over 50 percent of the years.	SDWA, CDWA	The Decision does not purport to "relax" any water quality standards. Studies of New Melones' yield, including the one attached to the Decision, show that New Melones does not have enough water to sustain all purposes – or even minimum permit requirements – at desired levels through an extended drought. In those times, Interior uses all available water for permit requirements.
1987 DFG agreement only allows for fishery releases in excess of 98.3 TAF after water quality and contractor needs are met.	SDWA	Interior is fulfilling its water quality responsibilities and attempting to satisfy contractor demands from New Melones, recognizing that (b)(2) made a significant reallocation of Project yield. The New Melones authorization statute subordinates exports to out-of-basin contractors to in-basin needs, which include Vernalis water quality and instream fishery flows in the Stanislaus River. Interior intends to develop a long-term operations plan for New Melones, with clear operating criteria for available water supplies in the Stanislaus Basin.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
The estimated needs for water quality are understated.	SDWA	Providing water quality at Vernalis and fulfilling the 1987 DFG agreement come before any use of Project water from New Melones. The needs for water quality are not addressed by this (b)(2) Decision. The implementation of the Decision in the Stanislaus Basin will be modeled as part of developing the long-term operations plan for New Melones.
Water recaptured and exported cannot be considered a decrease in yield.	SDWA	Comment noted. Measuring use of (b)(2) supplies does not necessarily require a reduction in yield. It does, however, require that 800,000 acre feet of yield be used for (b)(2) purposes.
On what basis does Interior exclude the (b)(2) releases from the export/inflow ratio?	SDWA	To assist the State in its efforts to protect the Bay/Delta and to help meet the export/inflow ratio pursuant to the WQCP requirements, the CVP will use a portion of the (b)(2) water. Additional (b)(2) releases in the February-September period are generally intended to flow through the Delta and provide additional protection and restoration for anadromous fish and other estuarine species. If the supplemental (b)(2) releases were included as inflow in the export/inflow ratio, a portion of the water could be exported and the full benefit of the outflow through the Delta would not be realized.
Clarify the reference in the first paragraph of Section IV regarding "water quality requirements."	SDWA	This refers to "water quality requirements" contained in the 1995 WQCP, and the text has been clarified.

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>How can there be any New Melones yield if water quality requirements are being met in less than half the years?</p>	<p>SDWA</p>	<p>In some years of an extended drought, New Melones may provide no Project yield. In those years, without Project yield, no water from New Melones would be available for (b)(2) uses. Conversely, in many years, there is sufficient water from New Melones for both water quality and Project yield, which would include yield for (b)(2). As Interior implements the Decision and runs models in developing a New Melones long-term operations plan, this issue will receive further analysis.</p>
<p>Operating the CVP in an integrated manner is contrary to permit conditions.</p>	<p>SDWA</p>	<p>Congress explicitly defined CVP for CVPIA purposes, indicating that Congress supports integrated management of the CVP. To the extent that the CVP water right permits are not consistent with integrated management, Interior anticipates that those permits will be addressed by the SWRCB as part of Reclamation's petition for consolidated place and purpose of use.</p>
<p>Does the calculation of yield and the yield assumptions understate (b)(2) and overstate yield by assuming a 2020 level of development and full contract amounts?</p>	<p>SDWA</p>	<p>No. Using the 2020 level of development and full contract amounts accurately reflects the delivery capability of the project in light of expected changes in the coming years.</p>
<p>There is no basis in California water rights law for limiting (b)(2) water taken from exports to 640 TAF.</p>	<p>SDWA, CDWA</p>	<p>While the limitation is not statutorily mandated, Interior believes that placing such a limitation on exports during the "low point" for CVP storage in San Luis Reservoir is the most efficient means of managing the water supplies dedicated under (b)(2) while at the same time not affecting export contractors unnecessarily. Management of the (b)(2) water respects water rights, but water rights do not dictate how Interior manages Project supplies.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
The 800,000 acre-feet should be put into a natural stream and allowed to flow out the Golden Gate to serve fish and wildlife.	Citizen	Some of the (b)(2) supplies will be used for this purpose. The decision regarding how the water will be managed, however, will be based on gaining the greatest biological benefit, rather than following one set management approach in all years.
Meeting Vernalis water quality standards by drawing on upstream sources other than the Stanislaus River would fulfill Congress' intent that the 800,000 acre-feet add benefits over and above those resulting from requirements.	CDWA	Some (b)(2) supplies can be used to assist the State in its efforts to protect the waters of the Bay/Delta. Use of upstream sources, including water from the Delta-Mendota Canal and/or the San Luis Reservoir, could cause additional impacts to CVP yield.
Water recaptured and exported could cause a real impact within the "areas of origin," while the south of Delta export contractors receive a windfall.	CDWA	Comment noted. Interior does not believe that water recaptured and exported would create a windfall for delta exporters. Instead, allowing such recapture and export when the water is not otherwise biologically needed is consistent with the terms of the statute and consistent with making the best use of a limited resource.
California Water Code Sections 11460, et. Seq., requires that (b)(2) water be obtained first from reduction of exports from the Delta or reduction in yield of San Luis Reservoir.	CDWA	Interior disagrees. While Interior respects California water rights law, Interior does not believe that the area of origin statutes referenced in the comment place constraints on how Interior uses its discretion in implementing (b)(2).

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>The limitation of 640,000 acre-feet on reduction of exports from the Delta for Feb 1 to Aug 31 is an action which favors export contractors.</p>	<p>CDWA</p>	<p>Comment noted. The provision for limiting export reductions to a maximum of 640,000 AF is based on an 80%-20% ratio of unconstrained water supply capability before and after the low point. As noted above, while the limitation is not statutorily mandated, Interior believes that placing such a limitation on exports during the "low point" for CVP storage in San Luis Reservoir is the most efficient means of managing the water supplies dedicated under (b)(2) while at the same time not affecting export contractors unnecessarily.</p>
<p>Interior failed to comply with Administrative Procedure Act.</p>	<p>SWC</p>	<p>Interior disagrees. The Interim Decision was compiled in response to a court-imposed deadline, and hence was not subject to the APA. The Interim decision was then released for public comment, distributed widely to all interested parties, and actual notice given to affected interests. Further, the Decision interprets the statutory mandate relating to how the government manages its own assets. It does not "impinge" on DWR's water rights or purport to prohibit state exports of water. Interior recognizes that the SWP's actions are necessarily voluntary, and the Decision indicates the direction Interior will seek to pursue when it consults with DWR and DFG.</p>
<p>Interior should implement yield enhancement actions, as provided by CVPIA Section 3408(j).</p>	<p>EBMUD</p>	<p>Interior continues to consider ways to enhance the CVP's yield.</p>

Response To Comments Regarding (b)(2) Implementation Decision
 October 5, 1999

Comment	Organization	Response
<p>Reclamation should reconsult with NMFS as to the 1.9 MAF carryover storage requirement, now that the Temperature Control Device is installed.</p>	<p>EBMUD</p>	<p>Comment noted. This requirement is reflected in the Decision's yield analysis as a modeling tool. Actual Shasta operations are controlled more by the 56-degree temperature requirement.</p>
<p>Water from San Luis Reservoir would be advantageous for providing fish flows in the San Joaquin River.</p>	<p>CDWA</p>	<p>Comment noted. However, before initiating such an approach Interior would need to determine that such water usage was biologically beneficial, and did not raise secondary impacts. To date, Interior has not felt that such use was the best approach biologically or operationally.</p>

List of Abbreviations for Response To Comments

Agricultural Water Contractors - Panoche Water District, Plain View Water District, Pacheco Water District, Westlands Water District, James Irrigation District, Banta-Carbona Irrigation District, West Stanislaus Irrigation District, Centinella Water District, San Luis Water District (These agencies sent very similar letters with the same comments, and relied on the comments from SLDMWA.)

(b)(2) - Section 3406(b)(2) of the Central Valley Project Improvement Act (Public Law 102-575)

BDUC - Bay Delta Urban Coalition

CCWD - Contra Costa Water District

CDWA - Central Delta Water Agency

CFBF - California Farm Bureau Federation

COA - Coordinated Operating Agreement

DFG - California Department of Fish & Game

DWR - California Department of Water Resources

EBMUD - East Bay Municipal Utility District

Environmental Groups - Save San Francisco Bay Association, Environmental Defense Fund, Natural Resources Defense Council, Pacific Coast Federation of Fishermens' Associations, California Sportfishing Protection Alliance, The Bay Institute

EPA - United States Environmental Protection Agency

ESA - Endangered Species Act

SCVWD - Santa Clara Valley Water District

SMUD - Sacramento Municipal Utility District

SLDMWA - San Luis & Delta-Mendota Water Authority

SDWA - South Delta Water Agency

Smiland & Khachigian - Smiland and Khachigian law firm

SWC - State Water Contractors

SWRCB - State Water Resources Control Board

WAPA - Department of Energy, Western Area Power Administration

WQCP - 1995 Delta Water Quality Control Plan