CALFED
BAY-DELTA
PROGRAM

CALIFORNIA'S WATER FUTURE:

A FRAMEWORK FOR ACTION

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Overview

The CALFED Bay-Delta Program is an unprecedented effort to build a framework for managing California's most precious natural resource: water.

The drought of 1987-92 demonstrated just how vulnerable California is to water shortages. Conflicts last year between water quality, fish protection and water supply also demonstrate how little flexibility there is in the current system. With the state's population expected to grow from 34 million today to 59 million in 2040, the need to conserve, to build our capacity, and to manage our water system more efficiently is no longer just a goal, it is a reality.

No decision involving water will be popular with everyone, but the one decision that must be made by everyone is to move forward together, and the time to act is now. Recent legislation and court decisions linking the approval of new development to the availability of water supply should serve as a sharp warning signal that business as usual is about to end in California.

Over the last four years, hundreds of individuals have spent thousands of hours discussing and debating options for a long-term restoration and management plan for the Bay-Delta estuary, the heart of the state's water distribution system. The task is fourfold: 1) to restore the ecological health of a fragile and depleted Bay-Delta estuary; 2) improve the water supply reliability of the state's farms and growing cities that draw water from the Delta and its tributaries, including 7 million acres of the world's most productive farmland; 3) protect the drinking water quality of the 22 million Californians who rely on the Delta for their supplies; and 4) protect the Delta levees that ensure its integrity as a conveyance and ecosystem.

Through the Bay-Delta Advisory Council, state and federal agencies have worked with stakeholders and the public to shape these options into this framework for a comprehensive plan. This document combines a specific set of actions, with a vision for how they fit together to create a balanced solution.

Federal and state courtrooms are littered with previous attempts at consensus or compromise on California water issues. There will continue to be conflicts, particularly in the next several years until new storage and conveyance projects are built, and until the system's fisheries are clearly on the path to recovery. This document is a blueprint for addressing these conflicts within a sustained, long-term effort by the CALFED agencies and stakeholder groups.

The task ahead cannot be underestimated. California, in partnership with the federal government, is launching the largest, most comprehensive water management program in the world. This is the most complex and extensive ecosystem restoration project ever proposed. It is the most intensive water conservation effort ever tried. It is the most far-reaching effort to improve the drinking water quality of millions of Californians as well as an unprecedented commitment to watershed restoration. And it is the most significant investment in storage and conveyance in decades.

This summer, CALFED agencies will issue the final programmatic EIS/EIR and a Record of Decision, and then proceed to Stage 1. Stage 1 covers the first seven years and sets forth the direction and builds the foundation for long-term actions. This framework document sets out actions anticipated to be included in a proposed preferred alternative for implementing Stage 1. These actions depend upon CALFED concluding its programmatic environmental review and subsequent site-specific analyses. Funding proposals are most specific for the first four years of Stage 1. Cost estimates and cost-sharing projections are preliminary. Following completion of the EIS/EIR process and final decisions to proceed, the cost estimates and cost-sharing projections will be subject to review by the state and federal executives, Congress and the State Legislature.

The specific program components are as follows:

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Accountability and Program Linkages

All aspects of the CALFED Program are interrelated and interdependent. Ecosystem restoration is dependent upon supply and conservation. Supply is dependent upon water use and efficiency and consistency in regulation. Water quality is dependent upon improved conveyance, levee stability and

healthy watersheds. The success of all of the elements is dependent upon expanded and more strategically managed storage.

California taxpayers, stakeholders and the federal government will be called on to invest billions of dollars over the next decade on CALFED programs. Expenditure of those funds must be based upon accountability and measurable progress being made on all elements of the program.

During implementation, the Program will incorporate both a high level of stakeholder participation and, as a central feature, science-based adaptive management. The Program includes a strong commitment to assure that its decisions and actions are based on well-grounded science. To this end, the Program provides for comprehensive monitoring and data collection, and continuous and comprehensive scientific review of actions and decisions. The highest quality and credibility of science-based decision making will be assured by the integration in the Program of an independent science board of scientific experts. In addition, the Program will hire a nationally-recognized scientist to coordinate the science effort, including related scientific studies conducted by CALFED agencies.

Progress will be measured in an annual report issued by the CALFED governing body. The report will contain status reports on all actions taken to meet CALFED objectives in Stage 1, including goals, actions, schedules and financing agreements in the following areas:

- completion of key projects and milestones identified in the Ecosystem Restoration Program
- development and implementation of local programs for watershed conservation and restoration
- achievement of targets for water supply reliability, water use efficiency, and the Environmental Water Account
- achievement of commitments under state and federal Endangered Species Act
- implementation of a comprehensive science program
- progress on storage projects, conveyance improvements, levee improvements, water quality infrastructure projects, and water use efficiency targets
- progress toward acquisition of the state and federal permits, including Clean Water Act Section 404 permits, for implementation of projects in all identified program areas
- progress in achieving benefits in all geographic regions covered by the Program
- legislative action on water transfer, groundwater management, water use efficiency and governance issues

Consistent with Proposition 204, prior to November 15 of each year, beginning in 2001, the CALFED governing body, in consultation with other interested persons and agencies, will review the CALFED Program's progress in meeting the implementation schedule established in the final programmatic EIS/EIR and Record of Decision. The CALFED governing body will submit an annual report to the Governor, the Secretary of the Interior, the State Legislature and the Congress that describes the status of implementation of all elements of the Program by December 15th of each calendar year.

If at the conclusion of each annual review, or if a timely annual review has not been issued, the Governor or the Secretary of the Interior determines that the schedule or objectives established in the final Record of Decision has not been substantially adhered to, the Governor and the Secretary, after notice to, and consultation with, state and federal CALFED representatives, will prepare a revised schedule that ensures that balanced solutions in all program areas are achieved consistent with the intent of the final Record of Decision. State funds, if the determination was made by the Governor, and federal funds, if the determination was made by the Secretary of the Interior, will only be available for expenditure in the subsequent budget year if a revised schedule has been developed within six months from the date on which the determination was made that the prior schedule has not been substantially adhered to. Upon the submission of any revised schedule, funds will be expended in accordance with that revised schedule.

Plan Components

Ecosystem Restoration

The CALFED Ecosystem Restoration Program (ERP) is a comprehensive effort to restore the ecological health of the Bay-Delta ecosystem. The goal of the ERP is to improve aquatic and terrestrial habitats and natural processes to support stable, self-sustaining populations of diverse and valuable plant and animal species, and includes recovery of species listed under the State and Federal Endangered Species Acts. The ERP covers the entire Sacramento River-San Joaquin River watershed. Its scope is unprecedented nationally. Restoring the ecosystem throughout the watershed will improve flexibility in managing export pumping operations in the south Delta, which in turn assists in attaining CALFED's goals for water supply reliability. CALFED intends to adopt a single blueprint to assure integration of Ecosystem Restoration, the Multi-Species Conservation Strategy, water project operations, and regulatory decisions.

In Stage 1, CALFED will invest over $1 billion in ERP projects, in accordance with the priorities established in the Strategic Plan, in addition to funds necessary for the Environmental Water Account (EWA). Consistent with this proposal, the State intends to allocate over $173 million in FY 2000-2001, including $100 million from Proposition 204, $35 million from the general fund, $25 million from Proposition 13, and $13 million from Proposition 12.

To be successfully implemented, the Ecosystem Restoration Program must have at least $150 million from dedicated funding sources annually through Stage 1, including up to $50 million annually for the EWA for each of the first four years. Some elements of the ERP, such as fish screens and aquatic habitat improvements, form a part of the basis of biological opinions upon which the Endangered Species Act regulatory commitments are made. Therefore, money dedicated for the ERP will not be used for other project purposes, although it may be rescheduled as part of the Accountability and Program Linkages process described above in the Overview section.

CALFED proposes a combination of State funding (including Proposition 204 funds), federal funding, and user fees to provide this funding, with a minimum of $50 million a year to be provided by each source. During the first 2-3 years, state and federal funds would provide the bulk of funding, supplemented by approximately $15 million of Central Valley Project Improvement Act (CVPIA) Restoration Funds, and SWP contributions under the Four Pumps Agreement. Following the Record of Decision, CALFED will work with local interests to develop state legislation to create a user fee that will generate approximately $35 million annually. CALFED also will work with the Congress to provide dedicated federal funds from the Conservation and Reinvestment Act (CARA), if enacted, or other federal sources. By the end of Stage 1, CALFED will reevaluate the level of dedicated annual

funding from state, federal, and user sources to achieve the ERP goals.

To achieve its objectives, the ERP identifies over 600 programmatic actions in all the regions of the Bay-Delta watershed. CALFED's Ecosystem Restoration Program will undertake the following actions, consistent with the Strategic Plan and on-going scientific review. The actions will include:

- Implement large-scale restoration projects on selected streams and rivers including Clear Creek, Deer Creek, Cosumnes River, San Joaquin River and Tuolumne River, in cooperation with local participants.

- Improve fish passage through modification or removal of the following locally owned dams: small diversion dams on Butte Creek; Wildcat, Coleman, South Fork, and Eagle Canyon dams on Battle Creek; McCormick-Saeltzer Dam on Clear Creek; Woodbridge Dam on Mokelumne River; and Clough Dam on Mill Creek. CALFED also will continue facilitating stakeholder discussions and evaluation of methods for providing fish passage for Englebright Dam on the Yuba River, and will recommend other fish passage projects through the Integrated Storage Investigation (ISI). Local interests will participate in implementing these actions, with funding shared by CALFED and the local interests, based on individual circumstances.

- Restore habitat in the Delta, Suisun Bay and Suisun Marsh, and Yolo Bypass including tidal wetlands, riparian habitat, and 8,000 to 12,000 acres of wildlife-friendly agricultural lands during Stage 1, in cooperation with local participants.

- Restore habitat and hydraulics on Frank's Tract in the Delta to optimize improvements in ecosystem restoration, levee stability, and Delta water quality. CALFED will decide the scope and feasibility of the project by 2002, and begin implementation by the end of Stage 1.

- Improve salmon spawning and juvenile survival in upstream tributaries by purchasing up to 100 TAF per year by the end of Stage 1. Some of these ERP flows may contribute to the EWA.

- Complete protection and restoration of the Sacramento River meander corridor as part of the Sacramento River Conservation Area/SB 1086 program, including easement or purchase of an additional 15,000 acres, revegetation, and restoration of stream meander function by the end of Stage 1.

- Implement an invasive species program, including prevention, control and eradication.

- Implement integrated flood management, ecosystem restoration and levee restoration under the Sacramento/San Joaquin River Basins Comprehensive Study being prepared by the U.S. Army Corps of Engineers and California Reclamation Board. Significant elements of this Comprehensive

Study, when implemented, will further the purposes of the ERP. CALFED intends that final development and implementation of actions under the Comprehensive Study will be coordinated and consistent with the CALFED Bay-Delta Program.

- Assist existing agency programs to reduce turbidity and sedimentation; reduce the impairment caused by low dissolved oxygen conditions; reduce the impacts of pesticides including organochlorine pesticides; reduce the impacts of trace metals; mercury; and selenium; reduce salt sources to protect water supplies; and increase understanding of toxicity of unknown origin.

Successful implementation of the ERP will require habitat restoration, which will affect some agricultural lands. As an important feature of the state's environment and economy, agricultural lands will be preserved during implementation of the ERP consistent with meeting program goals, minimizing impacts to agriculture. Some of the land needed for program implementation is already owned by the federal or state government and that land will be used to achieve program goals. Partnerships with landowners, including easements with willing land owners, will be pursued to obtain mutual benefits if public land is not available for the intended purpose. Acquisition of fee title to land will be from willing sellers only, and will be used when neither available public land nor partnerships are appropriate or cost-effective for the specific need. Such acquisitions will consider the potential for third-party and redirected impacts. In addition, to the maximum extent possible, the CALFED agencies will seek to implement the ERP through technical and financial assistance to locally based, collaborative restoration programs such as the Sacramento River Conservation Area/SB 1086 program.

Watersheds

The goal of the CALFED Watershed Program is to promote locally led watershed management activities and protections that contribute to the achievement of CALFED goals for ecosystem restoration, water quality improvement, and water supply reliability. CALFED and its agencies will encourage and support local efforts to resolve issues throughout each of the Delta's tributary watersheds (both above and below the primary tributary dams). The CALFED Program will support local implementation with funding, coordination, and technical assistance. CALFED proposes investing $300 million in this watershed program in Stage 1. As shown in Appendix A, funding sources would consist of $138 million state funds, $138 million federal funds, and $24 million in local contributions.

Watershed plans and actions will be developed to achieve multiple objectives: improved water supply reliability, flood management, environmental restoration, and water quality. For example, the Watershed program anticipates providing assistance to community based organizations in the American River watershed. Current efforts underway in this watershed are focused on forest and fuels management issues, and reducing the threat of catastrophic wildfire. Addressing these issues on a watershed scale can result in reduced water quality impacts in the Delta, increased seasonal flow within the American

River, and increased aquatic and terrestrial habitats for important species of concern.

The major Stage 1 elements of the Watershed Program include:

(1) Establishing a grant program in the first year to solicit, evaluate and fund local projects that contribute substantially to achieving CALFED goals. The watershed activities targeted by this program will:

- S build local capacity to assess and manage watersheds affecting the Bay-Delta system,
- S develop watershed assessments and management plans, and
- S fund development and implementation of specific watershed conservation, maintenance and restoration actions.

The CALFED Watershed Program has designed a three-step process for soliciting, evaluating and selecting an initial set of demonstration watershed projects: 1) solicitation of watershed projects that meet Program's selection criteria; 2) further proposal development by CALFED staff, the Watershed Workgroup, and an Interagency Watershed Advisory Team; and 3) evaluation and selection of proposals. CALFED's criteria for selecting projects will be based on the following:

- S A balance of diverse watershed activities that demonstrate the potential to improve the Bay-Delta system.
- S Application to multiple CALFED objectives in an integrated fashion, with emphasis on water supply reliability, water quality, and levee stability
- S A variety of watershed settings, such as forest lands, agricultural, urban, mixed, etc., are represented.
- S Geographical distribution throughout the CALFED solution area.
- S Project costs and anticipated results.

(2) Developing watershed program performance measures and monitoring protocols consistent with the CALFED science program by the end of 2002.

(3) Establishing an Interagency Watershed Advisory Team by the end of 2000 to provide technical assistance and to coordinate and expedite permit reviews and approvals.

Water Supply Reliability

One of the primary goals of CALFED is to improve the reliability of California's water supply within the context of unpredictable hydrology and the competing needs of fish and water users.

In addition to hydrology, actions taken in Stage 1 assume that water supply reliability is predicated upon the following factors:

- C Clear and consistent implementation of all regulatory decisions and project operations.

- Flexibility, water use efficiency and interagency cooperation to avoid water supply/fish/water quality conflicts where possible.
- Investment in infrastructure to improve storage and conveyance capacity.

Actions initiated in the first four years of Stage 1 to improve storage and conveyance capacity (see sections on Storage and Conveyance) will substantially increase supply reliability in the out years, but these benefits will not be realized until these new facilities come on line. Similarly, it will take years to implement and fully realize the supply benefits of water use efficiency, recycling and other conservation measures. Therefore the greatest challenge to improving water supply reliability lies in the first four years of Stage 1.

To address these supply reliability challenges in this period, CALFED will take the following actions in Stage 1:

- Establish a Regulatory Baseline by delineating existing regulatory requirements and clarifying implementation of specific regulatory actions (See Appendix B - Regulatory Baseline)

- Establish an Environmental Water Account (EWA) with an average of 380 TAF of water set aside annually to provide additional water for fishery purposes beyond the regulatory baseline. Water assets will be acquired by CALFED agencies, consistent with the goals of the CALFED water transfers program. (See Endangered Species Act Commitments and Appendices C and D - EWA)

- Provide a commitment that there will be no reductions, beyond the baseline regulatory levels, as contained in Appendix B, in Delta exports to state and federal project water users resulting from measures to protect fish. This commitment will initially be provided for the first four years of Stage 1, as outlined in this program, and will be conditioned upon establishment of the Environmental Water Account. (See Appendix D – State/Federal Endangered Species Act Commitments)

- Seek SWRCB approval of joint point of diversion and share water derived from JPOD between the CVP and the EWA.

- Implement conjunctive management projects, conservation measures and water transfers, as described in the sections below.

- Allocate Proposition 13 funds dedicated to interim water supply reliability and water quality. Proposition 13 contains over $630 million for these purposes, including the following:
  - $200 million for groundwater storage projects;
  - $250 million for Stage 1 water quality actions and water management actions; and
  - $180 million for water supply and water quality infrastructure projects in areas that draw supplies from the Delta, including the projects identified in Appendix E:

In the first four years of Stage 1, it is anticipated that water deliveries will remain at recent levels for most water users who depend upon water from the Central Valley Project, including Exchange Contractors, refuges, M&I contractors, as well as for State Water Project contractors. Water for south-of-Delta CVP agricultural water service contractors, who have been disproportionately affected by regulatory actions in recent years, will be increased by 15 percent (or greater) of contract totals to approximately 65 to 70 percent in normal water years. This increase in supply for south-of-Delta CVP agricultural service contractors will be accomplished through implementation of joint point of diversion, operational flexibility, interagency cooperation, EWA implementation, and other cooperative water management actions. The targeted normal-year supply improvement may not be achieved in all years due to annual hydrologic variability and its impact on carryover storage conditions. Substantial progress toward implementation of other program elements, such as development of EWA assets, is also necessary. Water supplies in dry years are likely to be less than the target and more in above normal years. The federal and state agencies are committed to working with local agencies to implement these regional supply actions and to support local water management actions including conservation and other local measures. Part of this effort will include development of a plan for alternative refuge supplies and conveyance, as described in Appendix F.

Governor's Drought Contingency Plan

CALFED agencies recognize that in the next several years critical water shortages may occur that severely impact the health, welfare and economy of California. To avoid such serious impacts, the Governor will convene a panel by July 2000, chaired by the Director of the Department of Water Resources, for the purpose of developing a contingency plan to reduce the impacts of critical water shortages. The plan will identify all available resources (e.g., water transfers, water exchanges, groundwater programs, local partnerships), building upon the experience gained with Governor's Drought Water Bank, to minimize such shortages. The plan also will recommend appropriate funding mechanisms. In addition, CALFED agencies commit to facilitate transfers of water and expedite regulatory processes consistent with legal requirements. The Governor's Panel will submit the plan to the Governor by December 2000.

Storage

Expanding water storage capacity is critical to the successful implementation of all aspects of the CALFED program. Not only is additional storage needed to meet the needs of a growing population but, strategically located, it will provide much needed flexibility in the system to improve water quality and support fish restoration efforts. The Environmental Water Account has been shown to be the most effective when combined with access to storage. Finally, genuine water supply reliability depends upon capturing water during peak flows and during wet years, as well as more efficient water use through

conservation and recycling.

The program identifies actions that will be taken in Stage 1 to expand storage capacity at existing reservoirs and strategically located off-stream sites by approximately 950 TAF, and implement a major expansion of more environmentally sensitive groundwater storage for an additional 500 TAF to 1 MAF. CALFED agencies are committed to increasing storage through the development of acceptable projects described below. Storage projects are not developed in isolation but rather as part of an overall water management strategy. As such, storage combined with other program actions such as conservation, transfers and habitat restoration will contribute to and be compatible with the water supply reliability, water quality and ecosystem restoration program objectives. Local agencies will continue to independently develop storage projects to meet local needs.

CALFED identified 12 potential reservoir sites, which are described in Appendix G. Based upon the work of the Integrated Storage Investigation and previous studies, CALFED intends to take the necessary steps to pursue expansion of two existing reservoirs and construction of a new offstream reservoir, with a capacity of 950 TAF and a major expansion of groundwater storage for an additional 500 TAF to 1 MAF. In addition, CALFED will study two potential reservoir locations through partnerships with local agencies. However, they will require substantial technical work and further environmental review and development of cost-sharing agreements before decisions to pursue them as part of the CALFED Program. The remaining potential reservoir sites in CALFED's screened list of 12 sites, as well as those sites previously screened out earlier during the site review process, appear to have less potential for providing benefits during Stage 1 or soon thereafter, either because of cost, extensive planning and analysis required, or other factors.

Project	**Potential Storage (acre-feet)**
In-Delta Storage	250,000
Enlarged Shasta	300,000
Expanded Los Vaqueros	400,000
Groundwater/Conjunctive Use	500,000-1,000,000
TOTAL	1,450,000 - 1-950,000

Surface Storage

CALFED agencies identified a list of twelve potential surface storage projects that are in varying stages of the environmental review or feasibility process. Actions taken in Stage 1 will focus on implementing or proceeding with the review of four surface storage projects:

(1) In-Delta storage project (approximately 250 TAF). An in-Delta storage facility can provide both fishery benefits and enhanced water project flexibility. CALFED will explore the lease or purchase of the Delta Wetlands project. CALFED also will initiate a new project, in the event that Delta Wetlands proves cost prohibitive or infeasible.

- Complete reconnaissance level study by August 2000.
- Make decision as to whether to proceed with feasibility study of alternatives (federal funds) by October 2000.
- Select project alternative and initiate negotiation with Delta Wetlands owners or other appropriate landowners for acquisition of necessary property by December 2001.
- Develop project plan and complete any additional needed environmental documentation by July 2002.
- Complete environmental review and documentation, obtain necessary authorization and funding, and begin construction by the end of 2002.

(2) Expand CVP storage in Shasta Lake by approximately 300 TAF. Such an expansion will increase the pool of cold water available to maintain lower Sacramento River temperatures needed by certain fish and provide other water management benefits.

- Obtain federal feasibility study authorization and resolve legal issues to allow state agency cooperation by the end of 2000.
- Complete feasibility study and preliminary design by the end of 2003.
- Complete NEPA process, obtain federal authorization and funding, and begin construction by the end of 2004.

(3) Expand Los Vaqueros Reservoir by up to 400 TAF with local partners as part of a Bay Area water quality and water supply reliability initiative. As part of a Bay Area initiative, an expanded Los Vaqueros Reservoir would provide water quality and water supply reliability benefits

to Bay Area water users. As an existing reservoir operated by the Contra Costa Water District (CCWD), the Los Vaqueros Reservoir is subject to a number of mandates and agreements, including a requirement for voter approval. CALFED intends to work with CCWD and interested stakeholders to assure that previous commitments, including local voter approval required for expansion, are respected.

- Identify potential local partners and develop agreement with CCWD and other partners as needed for necessary studies by March 2001.

- Secure authorization and funding for feasibility studies by July 2001.

- Begin feasibility study and environmental review July 2001, complete feasibility study by July 2002.

- Complete environmental review, documentation, and preliminary design on a selected alternative by the end of 2003.

- Finalize agreements with project participants by mid-2004.

- Obtain necessary authorizations and funding (including local voter approval) by the end of 2004, and begin construction by the end of 2005.

(4) Construct a bypass canal to the San Felipe Unit at the San Luis Reservoir to enable more effective water supply operation of San Luis Reservoir, with potential effective storage capacity enhancement at San Luis Reservoir of up to 200 TAF.

- Fund studies of bypass canal and related expansion of local storage through Proposition 13, allocate funds to Santa Clara Valley Water District, the implementing agency, by October 2000.

- Complete environmental review and documentation and preliminary design by the end of 2003.

- Obtain necessary authorization and funding and begin construction by end of 2004.

In addition to the projects described above, CALFED will join local partners in Stage 1 to evaluate two additional storage projects. These projects require extensive technical work, significant additional environmental review and development of cost-sharing agreements before a decision to implement the project as part of the CALFED Program.

(5) Sites Reservoir. This project, with a capacity of up to 1.9 million acre-feet, could enhance water

management flexibility in the Sacramento Valley. By reducing water diversion on the Sacramento River during critical fish migration periods, this project can greatly increase reliability of supplies for a significant portion of the Sacramento Valley. It can also provide storage and operational benefits for other CALFED programs including Delta water quality and the EWA.

- Develop joint planning program through an MOU with local water interests by October 2000.

- Complete environmental review and documentation by August 2004.

(6) 250-700 TAF of additional storage in the upper San Joaquin River watershed. It would be designed to contribute to restoration of and improve water quality for the San Joaquin River and facilitate conjunctive water management and water exchanges that improve the quality of water deliveries to urban communities. Additional storage could come from enlargement of Millerton Lake at Friant Dam or a functionally equivalent storage program in the region.

- Begin comprehensive study of alternatives by the middle of 2000.

- Begin feasibility study on selected project by the middle of 2001.

- Complete environmental review and documentation by the middle of 2006.

Groundwater Storage

Develop locally managed and controlled groundwater and conjunctive use projects with a total of 500 TAF to 1 MAF of additional storage capacity by 2007. Groundwater/conjunctive use projects will be implemented through locally managed projects or through partnerships with local and regional interests to obtain local and CALFED Program benefits. These projects will include a combination of purchase, lease or sharing storage space with others, and will include consideration of existing groundwater storage facilities. CALFED has identified projects in the Sacramento Valley, near the Delta, the San Joaquin Valley and Southern California that could provide 500 TAF to 1 MAF of storage, and as of June 2000 three memoranda of understanding have been negotiated with local agencies.

Stage 1 actions will include

- Finalize agreements with new local project proponents for joint planning and development by February 2001.

- Begin feasibility studies by March 2001 with funding through CALFED and Proposition 13.

- Report on the performance of feasibility studies, implementable projects, and potential benefits and beneficiaries by the end of 2002. The report will separately identify likely local benefits as well as opportunities to benefit statewide water supply reliability and the Environmental Water Account.

- Implement early stages of the most promising projects by the end of 2004. Aggressively pursue implementation of additional projects by the end of Stage 1.

Effective groundwater management programs will be essential to the success of groundwater and conjunctive use projects, as well as to other CALFED programs such as water transfers. Comprehensive groundwater management in California has been an elusive goal, in part because most groundwater is managed at the local level by various water districts and agencies. Groundwater should be managed at the basin level. Such a management system would avoid multiple, potentially conflicting sub-basin groundwater management plans. Therefore CALFED believes and will support legislation that supports groundwater management at the basin level.

AB 3030, which authorizes local agencies to enact voluntary groundwater management plans within their boundaries, is an important foundation for comprehensive groundwater management in California. AB 3030 also allows agencies to enter into agreements to develop basin-wide plans but does not require such basin-wide plans to be developed. DWR will adopt regulations for expenditure of grant and loan funds that make funding contingent upon local agencies having an AB 3030 plan or a functional equivalent in place. CALFED will work with local governments and affected stakeholders to develop legislation to strengthen AB 3030 to encourage basin-wide groundwater management plans, in part by conditioning future state funding for water programs on the development of local groundwater management plans by 2004. Information regarding groundwater management and potential legislation is provided in Appendix H.

Finance

The financing strategy for individual storage projects will vary due to the design and planned operations of each project. Final cost allocations, however, will be made based on the principle of "beneficiaries pay." Generally, the planning and feasibility stages of storage projects will be pursued with state and federal public funding. If a project is determined to be feasible, a cost allocation plan will be prepared as part of the design phase, preliminary cost allocations secured before construction begins, and final cost allocation agreements implemented prior to project completion. The expected total investments in storage during Stage 1 will be approximately $1.4 billion.

Regulatory Compliance

All of the projects described above, as well as many other CALFED program actions, will need to

comply with applicable regulatory programs. Most potential surface storage projects being evaluated by CALFED will need to comply with, among other things, the requirements of the State and Federal Endangered Species Acts, the State Water Resources Control Board's Clean Water Act Section 401 certification program, and the Corps of Engineers Section 404 permit program. CALFED has taken a number of steps to assure that the regulatory review process for storage projects proceeds in a timely manner. These steps include:

- State and Federal agencies responsible for implementing the Endangered Species Acts are working with CALFED to prepare a Multi-Species Conservation Strategy (MSCS) that will serve as the basis for a programmatic biological opinion for the entire CALFED Program. In addition, CALFED's storage project screening process has identified and addressed most potential ESA issues on a programmatic level, so that site-specific or project-level biological opinions will need to address only site-specific impacts or mitigation issues. Also, at the site-specific level, the ability of landowners neighboring and/or cooperating with ERP actions to obtain ESA commitments will be analyzed. Because of the unique set of circumstances of each ERP action and the variety of commitments (location, action type, timing, species affected), these commitments will be evaluated on a site-specific basis during future environmental and ESA reviews. The programmatic biological opinion will be completed at the time of the Record of Decision.

- The State Water Resources Control Board is working with the CALFED to develop a Memorandum of Understanding as to how it will proceed with Section 401 certification of CALFED storage projects. The MOU will be completed at the time of the Record of Decision.

- The U.S. Army Corps of Engineers and U.S. Environmental Protection Agency have been working with the CALFED and potential project proponent agencies to develop a Memorandum of Understanding articulating the process for securing permits under Clean Water Act Section 404. The MOU process will rely primarily on the CALFED screening process to eliminate sites that have ESA, water quality, or significant aquatic degradation issues. The MOU will outline a programmatic "alternatives analysis" process which will support any project-specific determinations. Finally, site-specific mitigation will be addressed at the time of the project-level permit application. The MOU will be completed at the time of the Record of Decision.

- CALFED has developed a comprehensive list of permit requirements for all proposed program components in early Stage 1, and has convened discussions between the state and federal regulatory agencies to establish a "permit clearinghouse" to coordinate and expedite permit applications across all CALFED programs. CALFED agencies will develop an MOU detailing this clearinghouse process by December 2000.

Conveyance

The CALFED goal for Delta conveyance is to identify and implement conveyance modifications that will improve water supply reliability for in-Delta and export users, support continuous improvement in drinking water quality, and complement ecosystem restoration. More specifically for export and environmental purposes, conveyance improvements are needed to improve the pumping capabilities of SWP export facilities to: (1) restore water project reliability and operational flexibility that have been eroded by recent protective fishery measures; (2) allow the Environmental Water Account to transfer and store water; (3) allow a reliable water transfers market to function; (4) allow SWP facilities to convey larger amounts of water during periods of high quality water in the Delta to improve water quality for urban use; and (5) provide greater capability for SWP facilities to be used to improve the reliability of CVP supplies for both its water users and wildlife refuges.

The CALFED Program proposes significant improvements in the water conveyance facilities in the Delta in Stage 1, which will be pursued through site-specific environmental review and permitting. These improvements include:

South Delta Actions

The specific actions listed below are components of, or are directly related to, the "South Delta Improvement Program" which has been under study and development for a number of years. These components will go forward following the completion of project-specific environmental documents. Environmental review will be completed by the end of 2002, after which the components below will proceed. These actions, related to providing for more reliable long-term export capability by the SWP and CVP and protection of local diversions in the Delta, are in addition to historic and current efforts (including annual installation of temporary barriers as well as current year local dredging and diversion improvements).

(1) Increase SWP pumping from the current limit between March 15 and December 15 of 6,680 cubic feet per second (cfs) to 8,500 cfs. Increased pumping can be used to increase water supplies through restoring the SWP's operational flexibility as well as allow diversion of a larger proportion of water supplies in the Delta during periods of good water quality. SWP facilities are used first for SWP purposes, as provided for in SWP water supply contracts. Increased pumping capabilities will also increase opportunities to convey water for the Central Valley Project, the Environmental Water Account and water transfers, since the availability of pumping capacity for non-SWP purposes is expected to increase under this action. Such increased pumping is conditional upon avoiding adverse impacts to in-Delta water supply reliability.

- Complete environmental review by the end of 2002.

- Secure appropriate regulatory permits by the middle of 2003 to increase pumping up to 8,500 cfs. This includes completing a project-specific operations plan that addresses the potential impacts of increased pumping. The operations plan will be developed through an open CALFED process. This pumping increase will increase export capability by up to 100,000 acre-feet per month depending on hydrologic conditions, fisheries conditions and availability of storage south of the Delta.

- Full use of this increased pumping capability will require continued implementation of temporary barriers on an annual basis as well as site-specific actions to protect agricultural diversions and navigation in the South Delta.

(2) **Increase SWP pumping to the maximum capability of 10,300 cfs.** This is to be accomplished through two sets of specific actions set forth below. As the South Delta Improvement Program is fully implemented through the end of Stage 1, the SWP export capability will increase to 10,300 cfs, greatly expanding benefits for all purposes. Full use of this capacity will depend on protection of agricultural diversions and navigation in the South Delta, hydrologic conditions, fisheries conditions, availability of storage south of the Delta, and use for non-SWP purposes.

(a) **Design and construct new fish screens at the Clifton Court Forebay and Tracy pumping plant facilities to allow the export facilities to pump at full capacity more regularly.**

- Complete funding plan by early 2003.

- Complete facilities design by the middle of 2004.

- Complete initial fish screens, and begin operations and performance testing by the middle of 2006.

(b) **Dredge and install operable barriers to ensure water of adequate quantity and quality to agricultural diverters within the South Delta.** This will include installation of an operable Grant Line Canal barrier, which will be constructed and operated in accordance with conditions and directions specified by the U.S. Fish and Wildlife Service, the California Department of Fish and Game and the National Marine Fisheries Service. In the interim prior to installation of permanent operable barriers, DWR would continue to install temporary barriers on an annual basis.

- Complete funding plan by early 2003.

- Complete facilities design by the middle of 2005.

- Complete Head of Old River barrier by the end of 2006.

- Complete Middle River barrier, Tracy barrier and Grant Line Canal barrier by the end of 2007.

(3) Design and construct floodway improvements on the lower San Joaquin River to provide conveyance, flood control and ecosystem benefits. Such improvements will be consistent with the Corps of Engineers' Comprehensive Study.

- Complete environmental studies by early 2003.

- Complete project design and funding plan by early 2004.

- Begin construction by the middle of 2005.

(4) Reduce agricultural drainage in the Delta. Actions to reduce such drainage will include early implementation of projects on Veale and Byron tracts to reduce or relocate major sources of drainage into South Delta channels. The purpose of these projects is to minimize elevated salinity and other constituents of concern to drinking water at urban intakes in the South Delta. These projects will be completed prior to completion of the installation of permanent barriers in Old River near the San Joaquin River, Grantline Canal, Old River near Tracy and Middle River and before SWP pumping can increase to its full capacity of 10,300 cfs.

North Delta Actions

CALFED will improve conveyance facilities in the North Delta for water quality and fishery improvements, and avoid water supply disruptions. The improvements include:

(1) Evaluate and implement improved operational procedures for the Delta Cross Channel to address fishery and water quality concerns.

- Begin operational studies (such as more intense fish monitoring on both sides of the Cross Channel, opening and closing the gates on tidal cycles, etc.) by October 2000.

- Complete studies and make specific recommendations by the end of 2003.

(2) Simultaneously evaluate a screened through-Delta facility on the Sacramento River of up to 4,000 cfs. If the CALFED Program's evaluation demonstrates that this diversion facility is needed to improve water quality in the Delta and at the export facilities, and can be constructed and

operated without adverse fish effects on the Sacramento or Mokelumne Rivers, construction will begin late in Stage 1. The historic emphasis has been on a screened diversion at Hood on the Sacramento River. This and other potential sites will be considered as part of this evaluation. (The water quality section below discusses other related water quality actions and how this facility fits into the broader water quality strategy.)

- Develop specific study plan by October 2000.

- Fund and begin studies through CALFED agency appropriations (State may have to advance federal share due to budget cycle timing) by October 2000.

- Complete water quality and fish effects studies and develop recommendations, taking into consideration the results of the Delta Cross Channel operational study above and evaluation of water quality measures, by the end of 2003.

- Complete environmental review of recommended program. If fish protection conditions are met and facility is found to be necessary, begin construction by the end of 2007.

(3) **Design and construct floodway improvements on the lower Mokelumne River to provide conveyance, flood control and ecosystem benefits.** Such improvements will not be inconsistent with the Corps of Engineers' Comprehensive Plan.

- Complete environmental studies by early 2003.

- Complete project design and funding plan by early 2004.

- Begin construction by the middle of 2005.

Interties, System Flexibility

CALFED intends to pursue a number of interties and bypasses in the water system to enhance flexibility to attain water quality goals. These include:

(1) **An intertie between the SWP and CVP facilities at or near Tracy.** This short channel between the state and federal canals would allow operators to take advantage of fluctuations in Delta water quality at the two project intakes, delivering higher quality to either project canal.

- Complete environmental work and project design by the middle of 2004.

- Complete funding plan by the middle of 2004.

- Begin construction by the end of 2004.

(2) A bypass canal to the San Felipe Unit at the San Luis Reservoir. When operated in conjunction with local storage, this canal would allow Santa Clara Valley Water District to receive water directly from the Delta pumping facilities, thereby avoiding water quality problems associated with the "low point" water levels in San Luis Reservoir.

- Fund studies of bypass canal and related expansion of local storage through Proposition 13, allocate funds to Santa Clara Valley Water District, the implementing agency, by October 2000.

- Complete environmental review and documentation and preliminary design by the end of 2003.

- Obtain necessary authorization and funding and begin construction by end of 2004.

(3) Facilitate water quality exchanges and similar programs to make high quality Sierra water in the eastern San Joaquin Valley available to urban Southern California interests. The Metropolitan Water District of Southern California and the Friant Water Users Authority and its member agencies have commenced preliminary discussions to accomplish these objectives, as well as improving water supply reliability for the agricultural districts. CALFED will work to assure that these efforts are consistent with overall programs to restore the upper San Joaquin River.

- Initiate evaluations and studies of potential infrastructure improvements by December 2000.

- Complete feasibility studies and implement selected demonstration projects by the end of 2001.

- Complete environmental review and begin implementation of a long-term program, including necessary infrastructure, by the end of 2004.

CALFED anticipates that the cost of implementing the conveyance program improvements in Stage 1 will be approximately $1 billion.

Environmental Water Account and ESA Commitments

An essential goal of the CALFED Program is to provide increased water supply reliability to water users while at the same time assuring the availability of sufficient water to meet fishery protection and restoration\recovery needs. As a means to achieve this, the Program will provide commitments under

the Federal and State Endangered Species Act for the first four years of Stage 1, which will be based on the availability of water from existing regulation, an Environmental Water Account (EWA) combined with the ERP, and the ability to obtain additional assets should they be necessary.

The EWA will be established to provide water for the protection and recovery of fish beyond water available through existing regulatory actions related to project operations. The EWA will benefit water users by providing additional water for fish without the need to reduce project deliveries. The EWA will be funded jointly by the State and Federal governments and will be authorized to acquire, bank, transfer and borrow water and arrange for its conveyance. EWA assets will be managed by the state and federal fishery agencies (FWS, NMFS, and CDFG) in coordination with project operators and stakeholders, through the CALFED Operations Group. Initial acquisition of assets for the EWA will be made by Federal and State agencies (USBR and DWR). Subsequently, it is anticipated that acquisitions will be made pursuant to a public process that may take advantage of other agencies or third parties to acquire assets.

To provide regulatory stability during the initial period of Stage 1, the CALFED agencies will provide a commitment, subject to legal requirements, that for the first four years of Stage 1, there will be no reductions, beyond existing regulatory levels, in CVP or SWP Delta exports resulting from measures to protect fish under the federal and state Endangered Species Act. This commitment will be based on the availability of three tiers of assets. Tier 1 is baseline water, provided by existing regulation and operational flexibility. The regulatory baseline consists of the biological opinions on winter-run salmon and delta smelt, 1995 Delta Water Quality Control Plan, and 800 TAF of CVP Yield pursuant to CVPIA Section 3406(b)(2). The regulatory baseline is described in more detail in Appendix B.

Tier 2 consists of the assets in the EWA combined with the benefits of the ERP and is an insurance mechanism that will allow water to be provided for fish when needed without reducing deliveries to water users. Tier 1 and Tier 2 are, in effect, a water budget for the environment and will be used to avoid the need for Tier 3 assets as described below. The EWA is described in more detail in Appendix C.

It is unlikely that assets beyond those in Tier 1 and Tier 2 will be needed to meet ESA requirements. However, if further assets are needed in specific circumstances, a third tier will be provided. Tier 3 is based upon the commitment and ability of the CALFED agencies to make additional water available should it be needed. In considering the need for Tier 3 assets, the fishery agencies will consider the views of an independent science panel.

The ESA commitment will be in effect for four years based on the assets available in that period. It is anticipated that sufficient assets, either from existing sources or from supply augmentation, will be available for the protection of fish beyond the first four years, and that the commitment will be extended. The state and federal regulatory commitments are described in Appendix D.

Water Use Efficiency and Conservation

The goal of the Water Use Efficiency Program is to accelerate the implementation of cost-effective actions to conserve and recycle water throughout the State in order to increase water supplies available for beneficial use. Water use efficiency measures are included in the CALFED Program for many reasons, including (a) water use efficiency investments can yield real water supply benefits to urban and agricultural users in the short term, especially compared to surface storage and major conveyance improvements that will take at least 5 to 10 years to complete; and (b) water use efficiency investments can generate significant benefits in water quality and timing of instream flows, even where they may not generate a net increase in available consumptively used water. Water reclamation provides additional opportunities to reduce water demand in a relatively cost-effective and environmentally-benign manner, with multiple benefits for efficiency, dry year reliability and discharge water quality. CALFED anticipates that significant investments in water use efficiency and water reclamation will be necessary during Stage 1 and beyond to address water supply demands caused by a rapidly increasing population and increased environmental water needs. These savings will be accomplished through incentive-based, voluntary - not regulatory - water use efficiency programs.

Water use efficiency potential varies significantly in California, depending on the region of the state and the sector involved. Working with the stakeholder steering committees and other technical experts, CALFED has developed ranges of estimated water savings during Stage 1. These estimates include only water that is currently unavailable for other uses because it is lost to excessive evaporation or drains to the ocean or some other unusable destination. In addition, approximately 225 to 310 TAF of water can be made available through water reclamation projects. These water savings would be generated as follows:

- 520 to 688 TAF in the urban sector
- 260 to 350 TAF in the agricultural sector
- 225 to 310 TAF in water reclamation projects

Water savings estimates for urban uses are greater because water conservation savings are more cost-effective (given the higher cost of most urban supplies). Agricultural conservation opportunities exist but are more limited by financial capability and by the fact that a higher percentage of agricultural return flows are used by downstream users and are therefore not included in conservation estimates.

Incentive Grant/Loan Program

The primary CALFED Program tool for encouraging investments in water use efficiency will be a competitive grant/loan program. This program will identify and provide grants (with local cost share) or loans to the most promising water use efficiency projects, including:

- Urban water use efficiency measures
- Agricultural water use efficiency measures, and
- Water reclamation/recycling projects

CALFED is relying on a competitive grant/loan program as the best mechanism to assure cost-effective investments in water use efficiency. Under this program, CALFED investments would be made in the most cost-effective water use efficiency measures first. Due to the regional differences in water use efficiency potential, the exact cost-effective measures will vary. For example, in some agricultural districts the cheapest improvements may be to install automated delivery systems, while other districts may find channel improvements or canal lining productive. Similarly, differences exist statewide in the urban sector. Some agencies may focus on low-flow device retrofits, while others may have substantial opportunities for using reclaimed water. CALFED anticipates that the competitive grant/loan program would allow participating entities to effectively respond to local conditions.

Each grant/loan package will include tailored requirements for performance and accountability. The program would be used primarily as a capitalization mechanism; the ongoing obligations for operation and maintenance would be assumed by the participating agency. By using a competitive grant/loan program approach, water users and the program can respond to changes in the water supply picture over time. As water demands increase in the State as anticipated, and the cheapest water use efficiency measures have been implemented, water users and the grant/loan program would increasingly turn to the more expensive water use efficiency measures.

Two elements will be critical to the success of a CALFED grant/loan program:

(1) Water agencies must implement water use efficiency measures that are cost-effective and appropriate at the local level. This level of attainment will be defined by agency compliance with the AB 3616 Agricultural Water Management Plans (for agricultural districts) or implementation of applicable Urban Water Conservation Council "best management practices" (for urban districts). CALFED anticipates that State and Federal assistance to agencies to attain this base level of water use efficiency will generally be in the form of technical assistance and capitalization loans, not grants. In addition, access to further CALFED Water Use Efficiency Program benefits (e.g., grants) will be conditioned on agency implementation of the applicable water management plans.

(2) Additional CALFED investments in water use efficiency are premised on the fact that some water use efficiency measures may not be cost-efficient when viewed solely from a local perspective, but may be cost-effective when viewed from a statewide perspective, compared to other water supply reliability options. In this case, CALFED anticipates a larger State and Federal assistance share in the form of grants. CALFED's proposed grant/loan program will tailor specific grants or loans to reflect this distinction between local benefits and statewide benefits, and will adjust the required local cost-share requirements accordingly.

CALFED has worked with the stakeholder steering committees, technical experts and practitioners to develop cost estimates associated with water use efficiency measures and water reclamation. Based on this outreach effort and evaluation, CALFED has estimated that achieving the potential water savings above would require an investment by the State and Federal governments in the range of $1.5 to $2 billion over the seven years of Stage 1. These funds, which will be allocated to local entities in the form of grants and/or loans for water use efficiency projects, will be matched with local or private funds on a project-by-project basis. During the first four years of Stage 1, CALFED proposes State and Federal government investment of $500 million (½ state and ½ federal), with an additional $500 million coming from local matching funds.

The Stage 1 investments reflect the fact that many of the water use efficiency measures can be brought on line in a relatively short time frame, so that both planning and construction/capital costs are included earlier in Stage 1. Comparing water use efficiency investments on an "annual cost basis"(that is, taking the capital costs and operating costs and amortizing them over the expected life of the project) is a common way to evaluate the cost-effectiveness of water management investments. For example, costs of most of the water use efficiency measures evaluated by CALFED in the urban sector range from $150 to $450 per acre foot per year. Under the competitive grant/loan program, the cheaper measures would be employed first.

A water use efficiency program of this magnitude is aggressive and unprecedented nationally. CALFED strongly endorses this aggressive program as part of a broad CALFED program designed to address California's water supply needs for the future. At the same time, given the uncertainties of implementing such an ambitious program, CALFED believes it will be appropriate to carefully evaluate the ongoing progress of the Program as it gets off the ground. CALFED will require annual reports from implementing agencies describing the progress of implementation efforts. These reports should include an ongoing evaluation of the availability of local cost-share financing and program effectiveness, and should include recommendations on removing any impediments to aggressive program implementation. CALFED anticipates that these annual reports will serve as a guide to subsequent year investments and program refinements. In addition, at the end of the first four years of Stage 1, CALFED will prepare a more comprehensive evaluation of program implementation. At that time, it may increase or reduce the targeted conservation goals to reflect actual implementation experience, redirect investments to achieve the most effective water use efficiency results, and/or introduce new programs as necessary and appropriate.

Stage 1 actions of the Water Use Efficiency Program include:

- CALFED will prepare a program implementation plan, including a proposed organizational structure consistent with the overall CALFED governance structure, responsibilities for technical assistance programs and the grant/loan program, and evaluation procedures, by December 2000.

CALFED, DWR and USBR will collaborate to develop a detailed finance proposal for Stage 1, including an evaluation of local cost share potential, no later than July of 2001.

- DWR and USBR will work with the Urban Water Conservation Council and Agricultural Water Management Council to provide technical assistance to urban agencies and agricultural districts developing management plans under the Urban Water Management Planning Act and the AB 3616 process. This effort, when combined with efforts of NRCS and California Department of Food and Agriculture, will in the first four years of Stage 1 provide $34 million in technical assistance to districts and agencies in meeting their Council-endorsed or certified management plans.

- CALFED will create a public advisory committee to advise State and Federal agencies on structure and implementation of assistance programs, and to coordinate Federal, State, regional and local efforts for maximum effectiveness. The advisory committee will be established by December 2000.

- CALFED will develop and adopt an Urban Water Management Plan Certification Process by the end of 2002.

- In addition to the annual evaluations of program progress, by December of 2004 CALFED will conduct a comprehensive evaluation of the program's first 4 years, and will make appropriate additional state and federal investments and actions to assure continued aggressive implementation of water use efficiency measures in the State.

Finance

Initial State and Federal funding for Stage 1 water use efficiency programs outlined in this section are identified within Proposition 204, Proposition 13, the CVPIA, the Reclamation Reform Act, Title XVI of P.L. 102-575, and various accounts in the Federal Farm Bill and related NRCS appropriations. Funding for the completion of the Water Use Efficiency Program will be determined through the legislative and congressional budget processes. The CALFED governing body will propose additional funding to the Legislature and Congress by the middle of 2004, which will be based upon the results of the program review and stakeholder input. Future funding, if necessary, may be sought through a bond measure that may also fund other out-year costs of the CALFED Program.

Water Measurement and Transfer Incentive Actions

Diverse stakeholder groups have recognized the importance of, and need for, appropriate measurement of water deliveries. Measurement will provide better information on statewide and regional water use, enable water purveyors to charge for water according to the amount used, allow water users to demonstrate the effects of efficiency measures, and facilitate a water transfers market. CALFED has

initiated a public process to add greater definition to “appropriate measurement”:

- An Independent Review Panel on Appropriate Measurement will be convened. This panel will provide guidance that will help define appropriate measurement as it relates to surface and groundwater usage. The panel will prepare a consensus definition of appropriate measurement by the end of 2001.

- At the completion of this stakeholder/technical process, CALFED agencies will work with the California State Legislature to develop legislation for introduction and enactment in the 2003 legislative session requiring the appropriate measurement of all water uses in the State of California.

Finally, CALFED believes that in order to promote water use efficiency measures in the agricultural sector, end users need to be able to beneficially participate in an active water transfer market. CALFED recognizes that one barrier to an effective water transfer market is the lack of incentive for individual landowners to utilize available water conservation technologies because any water savings frequently accrue not to the landowner but to the irrigation district or water supply agency. CALFED will develop and support proposals to remove this disincentive to voluntary deployment of water use efficiency improvements.

Water Quality

CALFED’s Water Quality Program goal is to provide good water quality for the millions of Californians who rely on the Delta for all or a part of their drinking water. Current drinking water quality problems vary significantly by water agencies, depending on the agency’s particular water sources. For example, the Metropolitan Water District of Southern California (MWD) and other Southern California utilities obtain water from the Delta via the State Water Project. MWD also receives highly saline Colorado River water which is then blended with Delta water. High levels of salinity are a major water quality problem for MWD, as are elevated levels of bromide and organic carbon. Salinity makes water taste bad and inhibits effective water recycling programs. Bromides and organic carbon interact with disinfection agents used in water treatment to create hazardous “disinfection byproducts” with potential adverse health effects.

In comparison, the Santa Clara Valley Water District, which is connected to both the Federal project (at San Luis Reservoir) and the State Water Project (via the South Bay Aqueduct from Clifton Court) shares the MWD concerns about salinity in Delta water, but may be even more sensitive to algal problems caused by low water levels in the San Luis Reservoir. The Contra Costa Water District takes its water directly from the Delta, and is highly sensitive to variations in Delta water quality. The North Bay Aqueduct of the SWP suffers from water quality problems during winter runoff periods. East Bay Municipal Utility District (EBMUD) and San Francisco get most of their water from the Sierra Nevada,

so they are less affected by Delta water quality. These differing situations for different water agencies require multifaceted approaches to drinking water quality that involve combinations of source water improvement, innovative and collaborative water management, and treatment options.

CALFED has adopted a general target of continuously improving Delta water quality for all uses, including in-Delta environmental and agricultural uses. Program actions designed to improve water quality to protect environmental uses are generally included in the Environmental Restoration Program (ERP) discussed above. For the drinking water quality program, CALFED has developed a specific goal based upon extensive stakeholder and agency involvement. CALFED's target for providing safe, reliable, and affordable drinking water in a cost-effective way, which is to achieve either: (a) average concentrations at Clifton Court Forebay and other southern and central Delta drinking water intakes of 50 ug/L bromide and 3.0 mg/L total organic carbon, or (b) an equivalent level of public health protection using a cost-effective combination of alternative source waters, source control and treatment technologies.

CALFED will pursue aggressively a mix of strategies in order to improve in-Delta water quality. Program actions to address the drinking water quality concerns of the more than 22 million Californians who rely on Delta water fall into four broad categories. These actions will:

- enable users to capture more drinking water during periods of high Delta water quality
- reduce contaminants and salinity that impair Delta water quality
- evaluate alternative approaches to drinking water treatment to address growing concerns over disinfection byproducts and salinity
- enable voluntary exchanges or purchases of high quality source waters for drinking water uses

None of these actions, by itself, can assure adequate supplies of good quality drinking water for California. They must all be pursued, in conjunction with other CALFED actions such as conveyance and storage improvements, to generate significant improvements in drinking water at the tap. The responsibility for drinking water protection in the Bay Delta ecosystem is shared by the State Department of Health Services (DHS), CalEPA (including the State Water Resources Control Board and the Central Valley Regional Water Quality Control Board) and the Department of Water Resources, with U.S. EPA providing funding and technical assistance. In particular, Central Valley Regional Water Quality Control Board (CVRWQCB), with support from CALFED and DHS, is currently developing a comprehensive drinking water policy for Delta and upstream tributaries. CALFED will continue to coordinate drinking water protection efforts, with particular attention to ensuring fair treatment for communities of color and of lower socio-economic status.

In response to recent conflicts between Delta water quality, water supply and environmental protection measures, in February 2000, CALFED developed and implemented an operations management coordination process. This process is attached as Appendix I. CALFED believes this process using the Operations Group and Water Operations Management Team will assure concurrent consideration of water quality, fisheries and water supply in water project operations.

CALFED proposes investing approximately $950 million during Stage 1 in water quality programs. Of this investment, more than $500 million would come from state and federal sources and the remainder from local sources. More than $68 million in Proposition 13 funds are earmarked for water quality improvements. Other sources of federal funding, in addition to future direct appropriations, include state direction of a portion of its share of federal Safe Drinking Water Act State Revolving Fund (SRF) funds (totaling approximately $70 million/year), Clean Water Act Section 319 funds (approximately $10 million this year), Clean Water Act SRF (approximately $100 million) and other federal grant programs under state control. The State may use these funding sources, as available, in accordance with applicable criteria. The State's proposed budget for FY 2000-01 includes more than $68 million from the Proposition 13 Interim Reliable Water Supply and Water Quality Program for water quality improvement projects. Additional Proposition 13 funds will be available during Stage 1 from the Safe Drinking Water, Flood Protection Corridor, Urban Streams Restoration, Watershed Protection, Nonpoint Source Pollution Control, Clean Water, and Water Recycling programs to fund projects with water quality benefits.

The major elements of the Water Quality Program are:

(1) Develop a Bay Area Blending/Exchange project that enables Bay Area water districts to work cooperatively to address water quality and supply reliability concerns on a consensual basis. As noted above, water supply agencies in the Bay Area have different water sources and different water supply and water quality concerns. This is an "umbrella" project that will evaluate a range of potential changes to existing infrastructure and institutional arrangements to encourage a regional approach to water supply operations. An example is the possibility of building "interconnects" between agency supply aqueducts, so that water suppliers can take advantage of different sources when water quality is highest (e.g., existing and/or additional Sierra sources). These interconnects could be more effective if used in conjunction with an expanded Los Vaqueros Reservoir, discussed above in the storage section. Another example is to arrange local water transfers, where one district pays for water conservation measures in another district in exchange for some or all of the saved, presumably higher quality water. The Bay Area Blending/Exchange project is complementary to actions in the CALFED programmatic documents, and would help achieve objectives for water quality and water supply reliability, consistent with the CALFED solution principle of no significant redirected impacts.

- Identify potential local partners and develop agreements as needed for necessary studies by

July 2001.

- Secure authorization and funding for feasibility studies by July 2001.

- Begin feasibility study and environmental review July 2001, complete feasibility study by July 2002.

- Complete environmental review, documentation and preliminary design on a selected alternative by the end of 2003.

- Finalize agreements with project participants by mid-2004.

- Obtain necessary authorizations and funding (including any required local voter approval) by the end of 2004, and begin construction by the end of 2005.

(2) Address drainage problems in the San Joaquin Valley to improve downstream water quality. This will include implementing recommendations from the San Joaquin Valley Drainage Program, identifying and supporting innovative drainage management programs, and support voluntary land retirement programs for drainage impaired lands, with local sponsorship. This includes CALFED actions, which target approximately 35,000 acres of land retirement, and complementary land retirement actions under other programs. Actions include:

- Finalize State Basin Plan Amendment and Total Maximum Daily Load for salinity in the lower San Joaquin River by the end of 2001.

- Begin implementation of appropriate source control measures (e.g., on farm and district actions, development of treatment technology, real-time management and reuse projects such as agroforestry) by the end of 2003.

(3) Implement source controls in the Delta and its tributaries. CALFED, with CalEPA (State Water Resources Control Board, CVRWQCB), Department of Health Services, and the Department of Water Resources, with assistance from U.S. EPA, will coordinate a comprehensive source water protection program. This program will include identification and implementation of appropriate pollutant source control measures, focused regulatory and/or incentive programs targeting priority pollutants, development of monitoring and assessment program, and infrastructure improvements to separate drinking water intakes from irremediable sources of pollutants.

- CVRWQCB, with support from CALFED and DHS, will establish a comprehensive state drinking water policy for Delta and upstream tributaries by the end of 2004.

- As part of the CALFED Science Program, develop comprehensive monitoring and assessment program by the beginning of 2003.

- Evaluate and determine whether additional protective measures (regulatory and/or incentive-based) are necessary to protect beneficial uses by the end of 2004.

- Consistent with the above policy, CVRWQCB, with support from DWR and DHS, will begin implementation of appropriate source control measures (e.g., advanced wastewater treatment, local drainage management practices) by the end of 2006.

(4) Support the ongoing efforts of the Delta Drinking Water Council to develop necessary technical information on Delta water quality, identify appropriate treatment options, pursue source water exchange opportunities, and make other evaluations necessary to meet CALFED's goal of continuous improvement in Delta water quality for all uses. The Council will rely in part on the results of a nationwide multi-year, $200 million, multi-stakeholder evaluation program led by the U.S. Environmental Protection Agency to determine future standards and cost-effective treatment technologies. Actions include:

- Council will complete initial assessment of progress toward meeting CALFED water quality targets and alternative treatment technologies by the end of 2003.

- Council will complete final assessment and submit final recommendations on progress toward meeting CALFED water quality targets and alternative treatment technologies by the end of 2007.

(5) Facilitate water quality exchanges and similar programs to make high quality Sierra water in the eastern San Joaquin Valley available to urban Southern California interests. The Metropolitan Water District of Southern California and the Friant Water Users Authority and its member agencies have commenced preliminary discussions to accomplish these objectives, as well as improving water supply reliability for the agricultural districts. CALFED will work to assure that these efforts are consistent with overall programs to restore the upper San Joaquin River.

- Initiate evaluations and studies of potential infrastructure improvements by December 2000.

- Complete feasibility studies and implement selected demonstration projects by the end of 2001.

- Complete environmental review and begin implementation of a long-term program, including necessary infrastructure, by the end of 2004.

(6) Invest in Treatment Technology Demonstration. Recent private sector efforts have generated

substantial advances in treatment technologies. CALFED will encourage these technologies by funding a demonstration project to design and operate an ultra-violet disinfection plant, as well as other demonstration projects to design and operate desalination facilities for agricultural drainage using membrane treatment technology and focusing on management of brines and on-site waste stream management, and other promising treatment technologies that arise during the Program.

- Initiate UV disinfection plant demonstration project by the end of 2002.

- Initiate regional desalination demonstration project by the end of 2002.

- Evaluate practicability of and determine timelines for full-scale implementation by the beginning of 2007.

(7) Control runoff into the California Aqueduct and other similar conveyances. Much of the land surrounding the southern portions of the California Aqueduct is used for agriculture and grazing. A number of agricultural drains directly impact the Aqueduct, and large stretches of the Aqueduct are not adequately protected from stormwater runoff that is impaired by soil erosion or agricultural and livestock runoff. Other major drinking water conveyance channels have similar runoff problems. CALFED agencies will implement appropriate physical modifications and watershed management programs to correct this problem.

- Initiate comprehensive evaluation of necessary physical modifications by (e.g., modifications to berms, bypasses, and stormdrains to divert stormwater away from and prevent its discharge into the Aqueduct and other similar conveyance channels) by the end of 2001.

- Develop and implement watershed management programs adjacent to appropriate conveyance channels by the beginning of 2004.

- Identify and begin implementation of necessary physical improvements by the end of 2005.

(8) Address water quality problems at the North Bay Aqueduct. The North Bay Aqueduct suffers from high TOC and turbidity from local watershed runoff. Ongoing studies are investigating land-use “best management practices” (BMPs)

- Provide funding to implement BMPs to improve watershed runoff water quality.

- Study feasibility of relocating North Bay Aqueduct intake.

(9) Improve dissolved oxygen conditions in the San Joaquin River near Stockton. The dissolved oxygen in the San Joaquin River, in the vicinity of Stockton, dips below state

environmental criteria, causing a migratory block for salmon and threatening other fish. CALFED proposes simultaneous investigation of specific causes as well as investigation of innovative methods to reduce problem pollutants in the river. Proposition 13 includes $40 million to construct facilities as part of this effort. Actions include:

- Finalize investigation of methods to reduce constituents that cause low dissolved oxygen by the end of 2001 to be included in the Total Maximum Daily Load recommendation to the CVRWQCB.

- Finalize State Basin Plan Amendment and Total Maximum Daily Load for constituents that cause low dissolved oxygen in the San Joaquin River by the end of June 2002.

- Begin implementation appropriate source controls and other controls as recommended in the Total Maximum Daily Load by the end of 2002.

(10) Study recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River. Exporting water from the Delta through the CVP and SWP at volumes greater than what is needed can establish additional flows in the San Joaquin River that could be used for salinity reduction and improving dissolved oxygen in the river.

- Implement the feasibility study of recirculation of water exported from the Delta through state and federal water projects by the end of 2000.

- Provide a recommendation to the CALFED governing body on the use of recirculation to meet CALFED objectives by the end of 2002. The recommendation will include analysis of impacts and benefits, and recommendations on infrastructure improvements necessary to implement recirculation should it be appropriate.

Water Transfers

The transfer of water between willing sellers and buyers represents an economically and environmentally sound part of the State's water strategy. Voluntary water transfers provide an important water resource management tool by fostering efficient allocation of water resources throughout the state. The successful implementation of CALFED is dependent upon access to California's major water transportation systems and removing other barriers to transfers: physical, institutional and legal. Therefore, the goal of the CALFED Water Transfers Program is to encourage the development of a more effective water transfer market that facilitates water transfers and streamlines the approval process while protecting water rights, environmental conditions, and local economic interests.

CALFED will require the adoption of a comprehensive and progressive water wheeling policy that will require the enactment of legislation to establish clear and concise laws governing access to and the cost of conveyance facilities as well as providing clear definitions of applicable rules and regulations.

In order to facilitate an efficient water market, CALFED's Water Transfer Program will focus on the following elements:

(1) Increase the availability of existing facilities for water transfers. It is necessary to encourage and promote water transfers by facilitating "wheeling" transactions. Such transactions are paramount to the ultimate success of CALFED. Therefore, if legislation is not enacted during the 2000 legislative year to clarify the State's wheeling laws, the State administration will sponsor legislation in 2001.

(2) Lower transaction costs through permit streamlining. CALFED proposes to develop streamlined transfer approval procedures for certain kinds of transactions (intra-regional transfers, short-term transfers, dry-year transfers). This streamlining would include "pre-certification" of certain classes of transfers and expedited environmental review procedures and may necessitate legislation to implement. Actions include:

- Convene a panel of stakeholders to draft recommendations for a streamlined transfer approval process by December 2000.

- Introduce legislative changes by April 2001.

A more active water transfers market heightens concern about the clarity of policies and procedures and the potential for third-party impacts. To respond to this and other concerns regarding better access to market information, CALFED is developing the "On-Tap" on-line water transfer information source, which will clarify application of policies and procedures and provide up-to-date information about ongoing transfer activity. This increased market information will reduce applicant and regulatory confusion and will allow third parties to track water transfers that may affect them and identify related outcomes from those transfers. Milestones include:

- Provide operational On-Tap website by the end of 2000

- Establish California Water Transfers Information Clearinghouse to disseminate information on groundwater impacts, cumulative impacts and local socioeconomic impacts of transfers by the end of 2001

Finally, as noted above, CALFED believes that in order to promote water use efficiency measures in the agricultural sector, end users need to be able to beneficially participate in an active water transfer

market. CALFED recognizes that one barrier to an effective water transfer market is the lack of incentive for individual landowners to utilize available water conservation technologies because any water savings frequently accrue not to the landowner but to the irrigation district or water supply agency. CALFED will develop and support proposals to remove this disincentive to voluntary deployment of water use efficiency improvements.

Levees

The goal of the CALFED Levee Program is to provide long-term protection for multiple Delta resources by maintaining and improving the integrity of the extensive Delta levees system. CALFED proposes investing a total of approximately $450 million in Stage 1.

The Delta covers 738,000 acres of productive farmland and wildlife habitat interlaced with hundreds of miles of waterways. Much of this land is below sea level, so 1,100 miles of levees are needed to protect Delta land uses including 520,000 acres of farmland, the Mokelumne Aqueduct that crosses the Delta to serve water to the East Bay, three state highways, a railroad, natural gas and electric transmission facilities, and thousands of acres of habitat. Levees also protect water quality for Delta and export users. If a levee fails, salty water from the bay can rush in to cover land that is below sea level. This draws salt into the Delta, which can make Delta water supplies unusable for months.

CALFED is proposing substantial efforts during Stage 1 to rebuild certain levees in ways that encourage habitat for aquatic and terrestrial species. These efforts are being undertaken pursuant to the Ecosystem Restoration Program and are discussed under that heading.

The Levee Program consists of these elements:

- **Base Level Protection.** The Program will provide base level funding to help local reclamation districts reconstruct all Delta levees to a base level of protection (the “PL 84-99 standard). Currently, about 520 out of 1,100 miles of Delta levees do not meet this standard. During Stage 1, about 200 additional miles of levee will be brought up to a base level of protection.

- **Special Improvement Projects.** This Program will enhance levee stability on levees that have particular importance in the system. Priorities include life and personal property (more than 400,000 people live in Delta towns and cities) water quality (preventing salinity intrusion), protecting agricultural production, and protecting ecosystems.

- **Levee Subsidence Control Plan.** Draining and cultivation of Delta marsh lands causes the peat soil to break down and compact. Over time, land has subsided from sea level so that today two-thirds of the Delta is below sea level and subject to flooding. Some points are now 21 feet below

sea level. CALFED will develop "best management practices" to control and reverse subsidence and work with local districts and landowners to implement cost-effective measures.

- **Levee Emergency Response Plan.** This will enhance the ability of local, state, and federal agencies to rapidly respond to levee emergencies.

Stage 1 actions include:

- Initiate actions to refine the Delta Emergency Management Plan by 2000
- Develop a Delta Risk Management Strategy that identifies risks to Delta levees, evaluates consequences, and recommends actions by 2001.
- Develop Best Management Practices for the reuse of dredged materials by 2001.
- Institute a program for using bay and delta dredge material to repair Delta levees and restore Delta habitat, targeting 2 million cubic yards of dredge material applied in Stage 1. This program must be coordinated with Central Valley Regional Water Quality Control Board and other interested agencies to assure that the dredge material reuse program adequately addresses concerns over salinity and the quality of dredge material. An aggressive protective dredge material reuse program will be critical to the success of both the base level program and special improvement projects.

Science

The CALFED Science Program will bring world-class science to all elements of the program – ecosystem restoration, water supply reliability, water use efficiency and conservation, water quality, and flood management (levees). Performance measures and indicators for each program element will track progress.

Much of the CALFED program is based on an **Adaptive Management** approach. There are many complex interrelated problems, which must be addressed with imperfect knowledge. As such, actions are taken based on the best available information; results monitored and research performed in order to refine future actions or investments. This approach is dependent on credible and objective scientific review and evaluation to ensure that decisions are based on the best available, objective information. In order to better integrate objective scientific review into the CALFED program, the Governor and the Secretary of the Interior will appoint an Independent Science Board to provide oversight and peer review for the overall program. A science panel will be convened for review of the EWA, and as needed for other program elements and activities. Additionally, CALFED will hire a lead scientist to guide the Comprehensive Monitoring, Assessment and Research Program (CMARP) and its integration with agency science programs.

While much of the need for science review is often focused on habitat restoration efforts, the CALFED Science Program will cover all of the program components. The levee improvement, water quality,

water use efficiency, groundwater storage, and other programs can benefit from the periodic review of a science panel to help ensure the best investments are being made and results are being achieved. Clearly, in early Stage 1 the emphasis for the CALFED Science Program will be on ecosystem restoration activities including design of effective monitoring, targeted research and development of priorities. These efforts will focus on the 12 uncertainties identified in the ERP Strategic Plan, which are described in Appendix J. The CALFED Science Program will be conducted in an open and collaborative manner to allow and encourage involvement of stakeholder and academic science communities. The CALFED Science Program can serve as a science clearinghouse for the CALFED agencies and as means of resolving scientific disputes.

The CALFED Science Program will accomplish the following in Stage 1:

- Hire an interim lead scientist by October 2000.

- Appoint an Independent Science Board and an independent science panel for the EWA by the middle of 2001.

- Coordinate existing monitoring and scientific research programs.

- Refine the set of ecological, operational and other predictive models which will be used in the evaluative process by the end of 2001.

- Establish performance measures and indicators for each of the program areas.

- Develop an annual science report, format and content, which includes:
  - < Status of the fisheries and effectiveness of efforts to improve conditions, including EWA, ERP and water management strategies, and provide recommendations to maximize fishery benefits while minimizing impacts to water supply.
  - < Assessment of progress of program element effectiveness;
  - < Effectiveness of performance measures and indicators;
  - < Recommended research and/or program adjustments; and

- Prepare first annual report by the end of 2001.

CALFED intends to invest approximately $300 million in the science program during Stage 1.

Governance

As many as 15 state and federal agencies have statutory responsibility for implementing some aspect of the CALFED program. The current voluntary association of agencies is not durable. It lacks the structure and accountability necessary to assure success of this multi-faceted, 30-year program to improve Bay-Delta water management. Stakeholders, whose active support is necessary to maintain funding and programs, as well as the CALFED agencies, strongly believe that a new public agency must be created to oversee the long-term implementation of the CALFED preferred alternative.

In the near term, the CALFED agencies will develop an interim governance structure similar to the current voluntary structure to bridge the gap before appropriate legislation can be completed establishing a permanent structure. The interim governance structure, including identification of how decisions will be made, will be set forth in a new "Framework Agreement," which the agencies will develop and execute by September 2000.

After nearly a decade of slow but tangible progress toward shared decision-making and funding, the agencies believe that legislation should be enacted creating a joint federal-state commission with shared power to appoint commission members. This approach will require resolution of federal Constitutional concerns. The legislative charge to this new Commission should be to provide direction and oversight to the program as described in the final EIS/R. Adequate full-time staff and funds must be allocated for this purpose. A joint Commission made up of high-level appointees would maintain visibility inside and outside the government, assure agency coordination, help secure funding, and provide policy leadership.

Major responsibilities of the Commission include: reviewing and approving program priorities and budget proposals; assessing and reporting on progress toward attainment of program goals; coordinating within CALFED and with related programs to maximize resources and reduce conflicts; resolving disputes between CALFED agencies; and maintaining contact with and receiving communications from the public and the media, as well as Congress and the California legislature. The overarching mandate of the Commission will be to assure effective, balanced and coordinated implementation in all program areas.

Regulatory responsibilities will remain with the existing agencies. In general, program management and direct implementation of CALFED actions, including grant management, preparation of environmental documents and permitting, construction, assessment and monitoring of individual projects will be carried out by CALFED agencies. In some cases, the Commission will need to take a more active role in managing certain programs in order to minimize fragmentation of CALFED efforts. Grants for ecosystem restoration, watershed management and other program components, not budgeted to an individual agency, will be managed directly by the Commission.

The Commission would be composed of equal numbers of high level officials of the federal and state agencies responsible for implementing CALFED programs and a similar number of stakeholder and tribal representatives. This structure is generally consistent with the recommendation of the Bay-Delta Advisory Council. Under this proposal, the Commission would have 12 members, as follows: four federal members - from among EPA, COE, NMFS/NOAA, BOR, FWS; four state members - DFG, DWR, CalEPA, Resources Agency; and four other members, representing agricultural water users, urban water users, environmentalists and Indian tribes. This structure would ensure a close relationship between the Commission and the CALFED agencies.

The Commission would be assisted by an advisory committee whose members would include qualified representatives of Indian tribes and stakeholder groups, including environmental justice representatives. The advisory committee members would be selected based on their experience and expertise in relevant fields, such as ecosystem restoration, agriculture, hydrology, urban water management, fishery biology, water quality, flood management, water conservation and recycling, and economics. Appointments would be made to assure that the advisory committee as a whole is both balanced and diverse. Representatives of CALFED agencies would be charged with attending advisory committee meetings and providing the information and reports as the committee may request.

The Commission would have a strong and effective executive officer, who would serve at the pleasure of the Governor and the Secretary of the Interior and hire and direct additional staff as needed to assist the Commission in carrying out its responsibilities. The Executive Officer would be responsible for providing information, reports and recommendations to the Commission and carrying out and monitoring compliance with direction from the Commission.

Regional Approach to Ecosystem/Water Management

The CALFED Program and the CALFED agencies have approached many ecosystem and water management issues from a regional perspective: what makes the most sense for the affected region. The Regions, which include their respective watersheds, are the Sacramento Valley, the San Francisco Bay Area, the Delta, Westside San Joaquin Valley, San Joaquin River/South San Joaquin Valley, and Southern California. Although each region raises unique ecosystem and water management issues, each region's issues affect the health and function of the Bay-Delta system as a whole. Those regional issues nevertheless need regional solutions that contribute to overcoming the challenges facing the Bay-Delta system. In crafting those regional solutions, the CALFED Program has also identified and considered the other, independent actions taken by federal, state and local agencies operating outside the CALFED umbrella. In addition, CALFED has taken into account its obligations to comply with ongoing commitments, such as the commitments included in the State’s area of origin laws.

APPENDICES

APPENDIX A - Stage 1 Projected Expenditures

APPENDIX B - Tier 1: The Regulatory Baseline

APPENDIX C - Environmental Water Account

APPENDIX D - State/Federal Endangered Species Act Commitments

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APPENDIX K - Bay-Delta Advisory Council General Recommendation

APPENDIX A

CALFED Bay-Delta Program Stage 1 Projected Expenditures[1] ($ in millions)											
	Program Year(s) [2]							Total	Cost Sharing ($) [3]		
Program Element	**1**	**2**	**3**	**4**	**5**	**6**	**7**		**Fed**	**State**	**Other**
Ecosystem Restoration [4]	$270	$215	$175	$170	$170	$170	$170	**$1,340**	$520	$520	$300
Water Use Efficiency [5]	$31	$62	$299	$641	$641	$641	$641	**$2,956**	$759	$759	$1,438
Water Transfers [6]	$3	$3	$3	$2	$2	$1	$1	**$15**	$7.5	$7.5	-
Watershed Management [7]	$40	$45	$45	$45	$45	$40	$40	**$300**	$138	$138	$24
Environmental Water Quality [8]	$15	$33	$38	$48	$50	$48	$48	**$280**	$90	$90	$100
Drinking Water Quality [8]	$41	$78	$82	$110	$116	$120	$128	**$675**	$200	$200	$275
Levees [9]	$33	$76	$78	$82	$45	$65	$65	**$444**	$142	$88	$34
Storage [10]	$50	$75	$138	$208	$266	$349	$339	**$1,425**	$237	$237	$200
Conveyance [11]	$29	$66	$150	$198	$220	$160	$98	**$921**	$188	$381	$193
CALFED Science Program [6, 12]	$25	$30	$45	$50	$50	$50	$50	**$300**	$150	$150	-
Total	**$537**	**$683**	**$1,053**	**$1,554**	**$1,605**	**$1,644**	**$1,580**	**$8,656**	$2,432	$2,571	$2,564

[1] Preliminary; current year dollars based on staff estimates. Total costs assume contributions from State, Federal, and User/Private funding. This table provides estimates of outlays by year. It does not represent requested budgets for each budget year. Budget year information will be provided in future tables.

[2] Stage 1 will begin with the Record of Decision, scheduled for September 2000. Some funds will be expended in the latter part of federal fiscal year 2000 (for example, Prop 204 funds on ERP projects). The bulk of expenditures will occur in FY 2001. Because most of the federal fiscal year 2000 is not considered part of Stage 1, FFY 2000 and FFY 2001 have been combined in this table, and funds projected to be spent after the ROD in FFY 2000 are included.

[3] Cost sharing represents a work in progress. More precise cost sharing allocations will be made as specific projects are developed and receive authorization. Cost share arrangements will be developed through agreements and will be consistent with applicable federal and state requirements. Exact share of costs will depend on the specific projects that are implemented, and will vary year to year. Initial years will be heavily funded by federal and state dollars. In most cases these are proposed cost shares--they are based not on available sources of funds but on a 50/50 split between federal and state sources or a 33/33/33 split between fed/state/users.

[4] Proposed cost sharing for the ERP is a split between users (~$35 million per year from a new broad-based fee & $15 million per year in CVPIA Restoration Funds), and public dollars (assumed split equally between federal and state sources of funding). The main source of State funds would be Prop 204. The proposed source of federal funds could include Bay-Delta Act and/or other sources. This Table assumes revenues from new broad based fees would become available beginning in 2003. This includes $50 million per year for the first four years for the Environmental Water Account.

[5] Proposed expenditures in Federal Fiscal Years 2005 - 2007 are tentative. Actual expenditures will be determined after ongoing evaluation of effectiveness of program investments during the first four years of Stage 1 (federal fiscal years 2000/2001 - 2004). Availability of State and Federal funds is dependent on the availability of local funds.

[6] Cost sharing for the water transfers program and Science Program assume equal federal/state shares.

[7] Cost shares include a 10% contribution from locals for community based watershed activities, with the rest funded equally between federal & state sources.

[8] In general cost sharing is assumed to be 50/50 fed/state or 33/33/33 fed/state/user, depending on the action. Some water quality actions assume federal and state funding in the initial 2 years, with 100% of the funding in latter years from users.

[9] Total cost includes the Suisun Marsh Levee Program, which provides substantial ecosystem, water quality, and flood control benefits. Cost shares do not include this Program.

[10] Initial funding will be largely state and federal sources. This does not include cost-sharing for surface storage construction. Final cost shares (including reimbursements by beneficiaries) will depend on allocation of costs and identification of beneficiaries for individual projects. This assumes a 50% local match for full-scale groundwater storage projects.

[11] Total includes rough estimate for construction of the San Luis Reservoir Low Point Project, but cost sharing is not included because cost shares have not been determined.

[12] Science Program will provide for implementation of adaptive management and more cost-effective decision-making throughout the rest of the Program.

APPENDIX B

Tier 1 Assets: The Regulatory Baseline

The regulatory baseline, which provides the assets in Tier 1, consists of:

- 1993 Winter-run Biological Opinion (NMFS)
- 1995 Delta Water Quality Control Plan (SWRCB)
  - To address the potential, which may arise in rare circumstances, that the CVP obligation under the WQCP exceeds the 450 TAF annual cap for use of (b)(2) water, CALFED agencies will develop a strategy, using their available resources, to create an insurance policy that will seek to eliminate impacts to water users, while not adversely affecting other uses. See drought contingency plan in Water Supply Reliability section.
- 1995 Delta Smelt Biological Opinion (FWS)
  - The 2-to-1 export/inflow ratio will be met by the CVP and EWA.
- Full Use of 800 TAF Supply of Water Pursuant to Section 3406(b)(2) of the CVPIA in accordance with Interior's October 5, 1999 Decision, clarified as follows:
  - Water Resulting from Refill of Reservoirs ("Reset"): Water which is available under the (b)(2) Policy as a result of refill of reservoirs following upstream releases ("reset") will not be used in a manner which results in increased export reductions. Upstream releases of (b)(2) water pumped by the SWP and made available to the EWA will not be subject to the "reset" provision.
  - Export Curtailments which Result in Increased Storage ("Offset"): Where a prescribed (b)(2) export curtailment results in a reduction in releases from upstream reservoirs and hence increased storage, the charge to the (b)(2) account will be offset to the extent that the increased storage will result in increased delivery (beyond forecast delivery at the time of the export curtailment) to export users in the remainder of the water year. Where the delivery to export users in the remainder of the water year will not be increased and end-of-year storage will be increased, there will be no offset to the charge to the (b)(2) account.

In addition, Tier 1 and Tier 2 assets will be supplemented by flexible operations that do not reduce deliveries to project water users.

The Secretary of the Interior is expected to make a decision later this year on Trinity River flows, pursuant to the original Trinity authorization, the Trinity Restoration Act of 1984, and the CVPIA. The substance of the decision is unknown and therefore cannot be addressed at this time. It is separate and will not be affected by this decision. However, it is intended that the targets for allocations to CVP south-of-Delta agricultural water service contractors, which are set out in the section regarding Water Supply Reliability, will not be affected by the decision on Trinity River flows.

APPENDIX C

Environmental Water Account

Initial Assets

Action Description	Water Available Annually (Average)
SWP Pumping of (b)(2)/ERP Upstream Releases [1]	40,000 acre-feet[2]
EWA Use of Joint Point[3]	75,000 acre-feet
Export/Inflow Ratio Flexibility	30,000 acre-feet
500 cfs SWP Pumping Increase	50,000 acre-feet
Purchases - South of Delta	150,000 acre-feet
Purchases - North of Delta[4]	35,000 acre-feet
TOTAL	380,000 acre-feet

Immediate development of assets for the first year is critical to EWA success. Initial water purchases and lease of groundwater storage will be secured from willing sellers by the end of 2000. In addition to assets to be acquired annually, as shown in the table above, an initial one-time deposit of water equivalent to 200 TAF of south-of-Delta storage will be acquired from a variety of sources to assure the effectiveness of the EWA and provide assurances for SWP and CVP water supply/deliveries.

Borrowing agreements will allow the EWA to borrow water from the Projects for necessary actions during a water year as long as the water can be repaid without affecting the following year's allocations. To the extent practicable, borrowing from the SWP and CVP will be equitably shared. The limitations on borrowing will be developed as part of the agreement.

Source shifting agreements with south-of-Delta water providers for 100 TAF will be used to enhance the effectiveness of the EWA, and to help provide assurance that SWP and CVP water deliveries and operations will not be affected by EWA operations.

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[1] The EWA and the SWP will share equally the (b)(2) and ERP upstream releases pumped by the SWP after they have served their (b)(2) and ERP purposes.

[2] The amount of water derived from the first four actions will vary based on hydrologic conditions.

[3] The EWA will share access to joint point, with the CVP receiving 50% of the benefits.

[4] This is the amount of water targeted for the first year; higher amounts are anticipated in subsequent years.

APPENDIX D

State/Federal Endangered Species Act Commitments

Federal Regulatory Commitment

For the first four years of Stage 1, there will be no reductions in CVP or SWP Delta exports, beyond the baseline, resulting from measures to protect fish under the federal Endangered Species Act. In addition to the measures in the baseline and operational measures that do not reduce deliveries to users (Tier 1), the Services (FWS and NMFS) will use the EWA assets, in concert with the ERP (Tier 2), to provide for the protection and contribute to the recovery of fish. In the event the Services determine, based on consideration of available information and the views of an independent science panel, that additional assets are required to prevent take exceeding the take limits in the biological opinion that would likely result in jeopardy or any other cause that would likely result in jeopardy, the CALFED agencies will commit to provide the required assets (Tier 3), without reducing deliveries to Project water users. Tier 3 assets may include purchases from willing sellers or consensual "borrowing" of water (beyond assets borrowed in the implementation of the EWA).

The commitment will be included in the proposed action analyzed in the Services' biological opinions regarding listed and proposed fish species and will support a no-jeopardy finding for those species. The no-jeopardy finding in turn will rest upon the Services' determination that the combination of assets in the baseline, the EWA and ERP, and if needed the third tier of additional assets are of sufficient magnitude and certainty to support the no-jeopardy finding for the four-year period. The same commitment will apply to any fish species subsequently listed during the first four years of Stage 1, which will be the subject of reinitiated consultation required by regulation. The commitment will remain in effect conditioned upon assured funding and the availability of the assets upon which the commitment is based.

As required by law, the only exception to this commitment would arise in the extremely unlikely event that, despite the utilization of all the measures available in the three tiers, a determination is made that a situation of jeopardy to a listed species nevertheless is likely. In that case, the Projects would be obligated to reinitiate consultation (as required by the reinitiation regulations). Only if the Service concludes in its biological opinion that jeopardy is likely despite the utilization of all the measures available in the three tiers and of all additional measures available through the use of the resources of the CALFED agencies that would not reduce deliveries to project water users, would the Projects potentially be required to reduce deliveries. In that event, the reductions would be the minimum required to avoid jeopardy. In issuing its opinion, the Service would consider all available information, including the views of the independent science panel, and would specifically address the views of the panel.

The initial regulatory commitment (for four years) would be extended in a revision to the biological opinion containing the initial commitment. The Services would evaluate the adequacy of the assets that have been and will be available to provide for the protection and recovery of fish for the remaining three years of Stage 1. Upon a determination (which will be set forth in the revised opinion) that the assets are sufficient, the commitment will be extended. The Services will conduct the evaluation and complete the revisions to the biological opinions no later than 90 days prior to the end of the initial four-year commitment period. It is anticipated that satisfactory progress in carrying out the CALFED program, and in particular the aspects of the Program which will result in assets to be shared for environmental and water delivery purposes, will provide an adequate basis for extension of the commitment.

State Regulatory Commitment

The Resources Agency will provide commitment that for the first four years of Stage 1, there will be no reductions, beyond existing regulatory levels, in deliveries to state and federal project water users resulting from measures to protect fish under the California Endangered Species Act. This commitment will be based on the fishery benefits of existing federal regulation, the assets in the Environmental Water Account, the benefits of the Ecosystem Restoration Program, and the commitment and ability of the CALFED agencies to make additional water available should it be needed. The commitment is intended, subject to legal requirements, to provide certainty and stability to water users in the initial period of Stage 1. It will be in effect for four years based on the assets available in that period. It is anticipated that sufficient assets, either from existing sources or from supply augmentation, will be available for the protection of fish beyond the first four years, and that the commitment will be extended.

APPENDIX E

Proposition 13, Chapter, Article 4:
Interim Water Reliable Supply and Water Quality Infrastructure and Management Program
Proposed Expenditures

APPLICANT	TITLE	AMOUNT
Santa Clara Valley Water District	San Luis Reservoir Low Point Project - Feasibility Studies	$ 14.8 million over three years
Friant Water Users and NRDC	San Joaquin River Restoration Program	$ 15.7 million
San Luis and Delta-Mendota Water Authority/Grassland Basin	San Joaquin River Water Quality Improvement Project, Phase 1	$ 17.5 million
Westlands Water District	Conjunctive Use and Groundwater Recharge Project	$ 12.5 million
Westlands Water District	Irrigation Systems Improvement Project	$ 5.0 million
San Luis Water District	Water Conservation/Canal Lining	$ 1.0 million
Del Puerto Water District	Irrigation Systems Improvement	$ .5 million
Dudley Ridge Water District	Sandridge Off-Stream Reservoir Site	$ 7.5 million
Kern County Water Agency	Kern River Restoration Project	$ 23.0 million
Metropolitan Water District Water District of So. California	Desalination Research and Innovation Partnership (DRIP)	$ 4.0 million
Metropolitan Water District of So. California	Water Supply Reliability Projects	$ 45.0 million
Metropolitan Water District of So. California	Water Quality Exchange Partnership	$ 20.0 million
Stockton East Water District	Farmington Groundwater Recharge and Wetlands	$ 5 million
Victor Valley Water District/Mojave Water Agency	Groundwater Recharge/Conjunctive Use	$ 5.0 million

TOTAL: $ 176.5 million

APPENDIX F

Water Supplies for Wildlife Refuges

The Central Valley Project Improvement Act (CVPIA) increased water supply allocations to wildlife refuges in the Central Valley over historic levels. Since the CVP is limited by conveyance capacity in the Delta-Mendota Canal, increased deliveries to managed wetlands displaced an equal amount of water that would otherwise go to agricultural service contractors.

CVPIA Section 3406(d) authorizes Reclamation to seek alternative supplies and access to non-federal conveyance facilities for deliveries to managed wetlands in order to reduce impacts to CVP contractors. Such actions do not change the quantities to be delivered to the refuges. While initial discussions with the SWP took place in 1994 and 1996, a formal arrangement to utilize excess SWP pumping capacity was not reached. In order to integrate this consideration into implementation of Stage 1, the following actions are included in early Stage 1.

<u>Stage 1 Actions</u>

(1) As part of the initial implementation of the EWA, joint point of diversion (JPOD) benefits will be shared equally between EWA and refuge supplies.

(2) Reclamation with the participation of state and federal refuge managers and the Grasslands Water District will prepare a refuge water supply and conveyance plan consistent with CVPIA Section 3406(d) by June 2001 through a public process. The plan will consider the expansion of Delta pumping capacity (part of the South Delta improvements) for the expanded JPOD potential.

(3) Implementation of the plan will begin not later than June 2002.

APPENDIX G

Potential Storage Retained for Additional CALFED Consideration			
Project	**Location**	**Type**	**Gross Storage Capacity**
Storage Projects To Be Pursued			
Shasta Lake Enlargement (6 to 8 foot raise of existing dam) (Site 43)	Shasta County Sacramento River	Existing On-Stream Storage Expansion	Approximately 300 TAF
Los Vaqueros Enlargement (Site 30)	Contra Costa County Kellogg Creek	Off-Stream Storage	300-400 TAF Additional (up to 965 TAF potential)
In-Delta Storage (Site 14)	Sacramento/San Joaquin Delta	Island Storage in the Delta	Approximately 250 TAF
Groundwater Conjunctive Use	Sacramento Valley, San Joaquin Valley & So. CA	Long-Term Funding Locally Supported	500 TAF - 1 MAF
Millerton Lake Enlargement or Equivalent (Site 32)	Fresno County San Joaquin River	On-Stream Storage	Additional 720 TAF
Sites Reservoir (Site 44)	Colusa and Glenn Counties Funks & Stone Corral Cks	Off-Stream Storage	1,200 to 1,900 TAF
Storage Projects To Be Deferred			
Ingram Canyon Reservoir [Complete ongoing estimates of cost, benefits and impacts, then no further action] (Site 25)	Stanislaus County Ingram Creek	Off-Stream Storage	333 to 1,201 TAF
Montgomery Reservoir (Site 34)	Merced County Dry Creek	Off-Stream Storage	240 TAF
Panoche Reservoir (Site 37)	Fresno County Silver Creek	Off-Stream Storage	160 to 3,100 TAF
Quinto Creek Reservoir (Site 39)	Merced/Stanislaus County Quinto Creek	Off-Stream Storage	332 to 381 TAF
Colusa Reservoir Complex (Site 9)	Colusa/Glenn Counties Funks Creek	Off-Stream Storage	3,300 TAF
Schoenfield Reservoir portion of the Red Bank Project (Site 40)	Tehama County S.F. Cottonwood Creek	Off-Stream Storage	Schoenfield-250 TAF
Thomes-Newville Reservoir (Site 48)	Glenn County Thomes & Stoney Creek	Off-Stream Storage	1,840 - 3,080 TAF

APPENDIX H

Groundwater Legislation

Long-term effective groundwater management throughout California will be essential to the success of a number of CALFED programs, including groundwater banking, conjunctive use and water transfers. At this time, however, California does not have an effective, comprehensive program to manage its groundwater resources. Instead, groundwater is managed at the local level by various water districts and agencies, entities whose boundaries were set without regard to groundwater resources. CALFED believes that groundwater would be better managed at the basin level. Such a management system would avoid multiple, potentially conflicting sub-basin groundwater management plans.

CALFED will work with the Legislature to help move California toward basin-wide groundwater management. New legislation should call for management plans that promote the objective of increasing overall water supply reliability while protecting against localized loss of access to water supply, degradation of water quality, and subsidence. This legislation should address the following issues:

1) AB 3030

AB 3030 allows local agencies to develop and implement local groundwater management plans. AB 3030 should be strengthened to ensure specific groundwater management plans are completed. Additionally, agencies and districts sharing the same basin should develop basin-wide management plans that address both groundwater and surface water. A realistic time frame for agencies to complete groundwater management plans would be two to three years from the date legislation is passed. The legislation should provide that agencies without timely plans would lose their access to state water program funding.

2) California Water Code

Many sections of the Water Code contain language that is either ambiguous or restrictive with regard to facilitating conjunctive use, groundwater banking and groundwater transfers. For example, Water Code Section 1220 precludes the pumping of groundwater for export from the Delta-Sierra Basin, as defined in DWR's Bulletin 160-74, unless the pumping is in compliance with certain conditions. Currently, there are differences in opinion as to what these conditions mean and how they are applied. The new legislation should provide remedy for these uncertainties.

3) County Ordinances

The Water Code should be amended to require that county groundwater management ordinances must be consistent with groundwater management plans adopted by water agencies under AB 3030 or other statutory authority. The combination of local government ordinance and local agency management plan should complement each other in establishing basin management objectives to increase water supply reliability.

4) State-level Oversight

CALFED, The Resources Agency, or the Department of Water Resources should provide guidance for basin-wide management of surface water and groundwater resources. Annual reports that discuss basin water quality, a water budget and coordination activities among agencies and local government would be appropriate. The legislation should contain provisions to clarify the scope of local agencies' authority to manage groundwater, and should provide default rules and definitions to resolve conflicts and ambiguities in local groundwater management schemes.

5) Development of Management Plans

Development of effective groundwater management plans will require improvement in our current scientific understanding of groundwater resources. Few regions have good data on how groundwater moves underground, how fast it recharges, how much can be withdrawn before subsidence occurs, or vegetation is adversely affected. The Department of Water Resources is currently updating DWR Bulletin 118 by collating existing data to establish a water budget for each groundwater basin. At present, this effort is funded for a period of 3 years. This program should be funded as a continuous program to collect information on groundwater conditions in each basin to better understand how to manage the resource effectively.

AB 303, introduced in 1999, would continue the work undertaken during the current Bulletin 118 update but would provide for collection of additional data. AB 303 would establish a grant program to be administered by the Department to assist local public agencies with groundwater monitoring and management activities; provide funding for the Department to update, digitize, evaluate and expand groundwater databases and to update DWR Bulletin 118; and would require that all data generated by such funding would be available to the public. CALFED believes that the provisions of AB 303 should be supported.

APPENDIX I

February 23, 2000

PROPOSED DECISION-MAKING PROCESS WHEN CONFLICTS ARISE

After proceeding through a December 1999 water management conflict with a less-than optimal decision process, the CALFED agencies involved in operations - USBR, FWS, NMFS, DWR, and DFG - have developed a new and improved process for deciding how best to proceed in the face of conflict among competing objectives. The new process is intended to:

1. Ensure full consideration of all appropriate factors required for a decision based on the then-available best scientific data and evaluation, particularly including water supply, water quality, and endangered species as well as tradeoffs.
2. Expedite the elevation of conflicts among these sometimes competing objectives.
3. Provide an "early warning," to senior policymakers in the state and federal governments.
4. Draw on stakeholder knowledge and creativity in resolving issues.

Most operational conflicts will be resolved at the operator or director level, but senior levels of government need to remain informed as conflicts develop. In those few instances where conflicts cannot be resolved, senior policymakers participate in resolving those issues consistent with applicable statutory provisions.

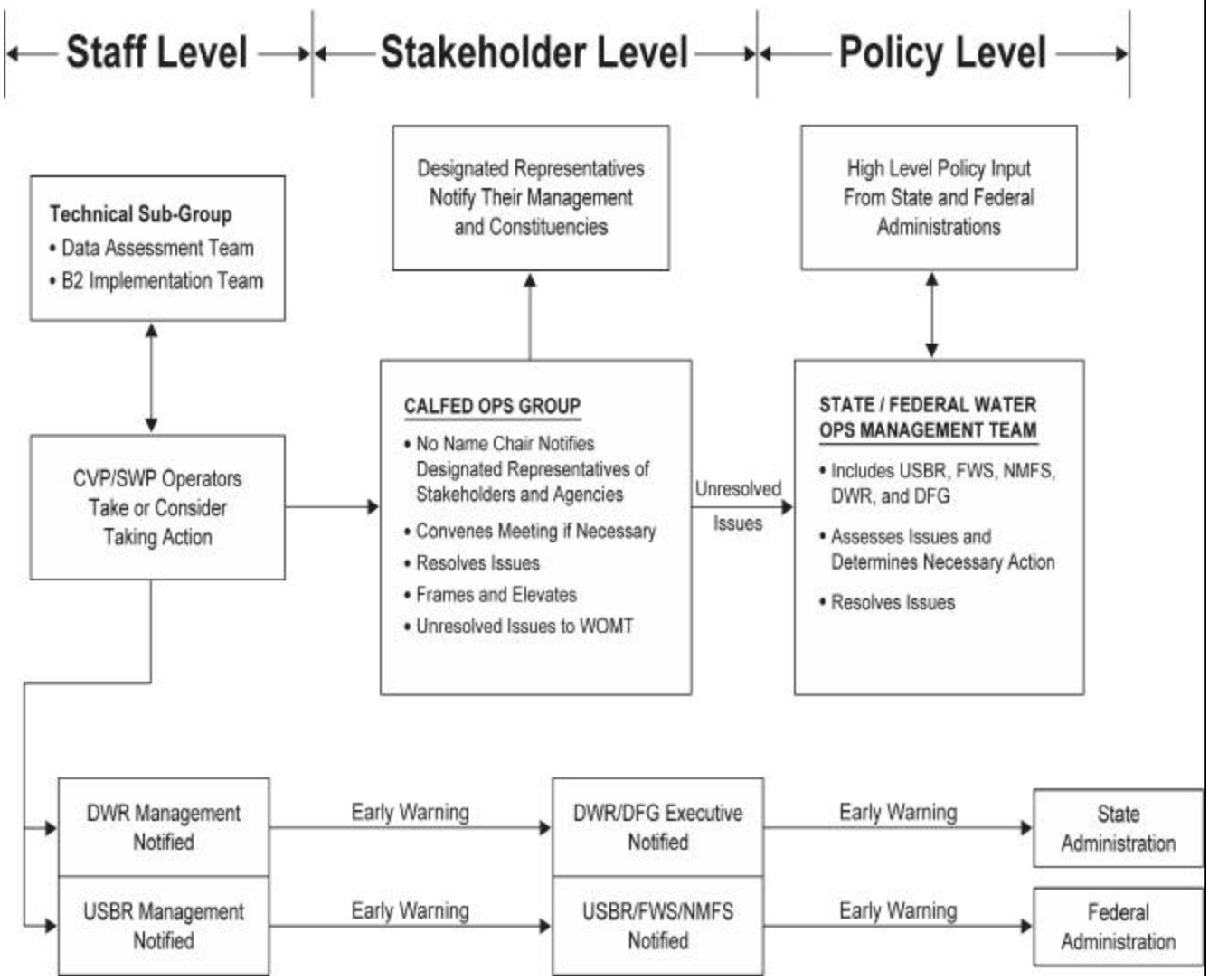
Water Operations Management Team. The most important change is the creation of the Water Operations Management Team, which includes the directors of DWR and DFG, the regional directors of USBR, FWS, NMFS and EPA as well as a representative of the State Board. This Team will meet weekly, or as. the need arises, to resolve conflicts among competing resource demands. The CALFED Operations Group, which includes agency operations personnel, will present the issues to the Team, who will be responsible

for informing more senior levels of government regarding developing conflicts. As the Water Operations Management Team resolves issues, it will consider explicitly water supply, water quality and endangered species in its decisions.

CALFED Operations Group (Ops Group). Ideally, operational issues will be resolved at the lowest level possible, with the Ops Group orchestrating that conflict resolution. The Ops Group will draw on the discussions and advice within the stakeholder-driven No-Name Group and the agency-driven, biological Data Assessment Team. As decisions are made, the Ops Group is responsible for informing their agencies' members of the Water Operations Management Team.

The "flow chart" illustrates two ways to trigger high level policy engagement: One elevates an "early warning" independently within the State or federal organization; another, involves State, federal and stakeholder coordination in identifying and framing an issue involving a significant resource conflict.

Operations Decision-Making Process



APPENDIX J

Key Science Questions/Issues

Introduced Species. Introduced species have had a significant impact throughout the Bay-Delta ecosystem, but it is unclear exactly how they have affected Bay-Delta ecology, such as foodweb productivity, hydrological processes, and populations of native species. It is also unclear to what extent introduced species can be eradicated or controlled effectively.

Natural Flow Regimes. Most Central Valley tributaries are regulated by dams, and there is some question about how to restore ecological processes in balance with a regulated flow regime.

Channel Dynamics, Sediment Transport, and Riparian Vegetation. There is growing recognition that dynamic river channels, free to overflow onto flood plains and migrate within a meander zone, provide the best riverine habitats. It is unclear to what extent fluvial processes can be restored in light irreversible changes to the ecosystem and continued human uses.

Flood Management as an Ecosystem Tool. More comprehensive approaches to flood management have the potential to simultaneously provide ecological benefits. It is unclear, however, to what extent ecosystem restoration and flood management are compatible.

Flood Bypasses as Habitat. There is a growing realization that bypasses can be important habitat for waterfowl, for fish spawning and rearing, and possibly as sources of food and nutrients for estuarine foodwebs. There is some question about whether flooded bypasses are unique habitats, or to what extent they can serve as templates for flood plain restoration in other parts of the Bay-Delta ecosystem.

Shallow Water Habitat. Restoration of shallow-water tidal and freshwater marsh habitat has received substantial support as a method to achieve species restoration goals. The underlying assumption is that physical habitat of the kind and at the locations proposed is limiting to the populations of interest and therefore that additional like habitat will increase these populations. This assumption is fundamental to many ecosystem restoration projects, but it has not been tested for many species in this estuary.

Contaminants in the Central Valley. Researchers frequently discover in bioassays that waters and sediments in various parts of the Bay-Delta ecosystem are toxic to fish and invertebrates. There is limited evidence connecting these conditions to reductions in species abundance.

Fish-X2 Relationships. Current management of the Bay-Delta system is based largely on a salinity standard (the “X2” standard). This standard is based on empirical relationships between various species of fish and invertebrates and X2 (or freshwater flow in the estuary). There is a need to determine the underlying mechanisms of the fish-X2 relationships.

Decline in Productivity. Productivity at the base of the foodweb has declined throughout the Delta and northern San Francisco Bay. There is some uncertainty about the sources of this decline in productivity, the

ecological effects of this decline, and feasible management options for restoring productivity.

Diversion Effects of Pumps. It is not clear to what extent the entrainment of fish and other biota in the CVP and SWP pumps and agricultural water diversions in the Delta affect the population size and dynamics of any one species.

The Importance of the Delta for Salmon. Scientific opinion varies on the suitability and use of the Delta for rearing by juvenile salmon and steelhead.

Beyond the Riparian Corridor. It is important that progress is made toward improving and quantifying the understanding of how areas adjacent to riparian zones and in particular agricultural lands influence ecological health. It is currently unknown how most species respond individually to disturbances common in landscape areas adjacent to riverine systems

APPENDIX K

Bay-Delta Advisory Council

General Recommendation

The Bay-Delta Advisory Council recognizes that in some important respects the federal Record of Decision (ROD)/state Certification of the CALFED Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) can only be regarded as the selection of a preferred approach to management of the Delta and its watershed. Potential conflicts among objectives have yet to be fully analyzed and reconciled within the availability of limited resources. Uncertainties in science and technology will require flexibility, and substantial commitments should not be based on highly speculative judgements. The PPA commits to a "through-Delta" conveyance of water for export, and to the pursuit of measures to improve water quality, protection of fish, and to closing the gap between water supply and demand. The purpose of this recommendation is to suggest that CALFED commit to making the analyses that are needed (a) to develop and better refine the CALFED Solution early in the implementation process, (b) to assure that there is a carefully considered balance and integration among goals that compete for limited water and land resources, and (c) to establish the ground rules and boundaries that will govern implementation of the CALFED Solution.

Recommended ground rules include, but may not be limited to:

a) CALFED commits to compliance with the CALFED Solution Principles.

- Reduce Conflicts in the System - Solutions will reduce major conflicts among beneficial uses of water.
- Be Equitable - Solutions will focus on solving problems in all problem areas. Improvements for some problems will not be made without corresponding improvements for other problems.
- Be Affordable - Solutions will be implementable and maintainable within the foreseeable resources of the Program and stakeholders.
- Be Durable - Solutions will have political and economic staying power and will sustain the resources they were designed to protect and enhance.
- Be Implementable - Solutions will have broad public acceptance and legal feasibility, and will be timely and relatively simple to implement compared with other alternatives.
- Have No Significant Redirected Impacts - Solutions will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in their entirety, within the Bay-Delta or to other regions of California.

b) Acknowledgment that as California's population continues to increase, it is expected that water deliveries and associated impacts will reach into new geographic areas and will result in new problems. Potential new problems will occur in terrestrial and aquatic habitat, both export and area of origin (including the Delta), with providing water supply and quality; and with providing land and other resource needs for each of urban, rural, social, environmental, and agricultural purposes.

c) CALFED commits that every broad or site-specific measure for achieving CALFED goals will be analyzed technically and impartially before adoption and implementation in order to assure compliance

with CALFED's principles, compatibility with other goals, avoidance of significant third party and unmitigable cumulative impacts within a given geographic area and among economic sectors, addressing related environmental justice concerns, and an integrated use of limited natural and financial resources. CALFED will create clear criteria for determining significant third party, environmental justice, and unmitigable cumulative impacts. This will be done and revisions of the plan made by a process described in the ROD/Certification.

d) CALFED will strive to eliminate dependence on unsustainable groundwater overdraft in any region of the Central Valley and will also strive to eliminate the destructive accumulation of imported salt in soils and groundwater of the Central Valley basins south of the Delta.

e) CALFED will identify which decisions will be made in Stage I and future stages of implementation.

f) CALFED will continue to seek and achieve environmental justice. The CALFED Bay-Delta Program and its participating agencies are committed to seeking fair treatment of people of all races, cultures, and incomes, such that no segment of the population bears a disproportionately high or adverse health, environmental or economic impact resulting from CALFED's Programs, policies or actions. In continuing to seek environmental justice, CALFED will develop programs, policies and actions to:

- identify and evaluate the environmental, health, social , and economic effects of CALFED activities,
- propose and commit to measures to avoid and mitigate disproportionate effects,
- seek participation from potentially impacted communities in finding alternatives or solutions to mitigate impacts,
- improve research and data collection related to the health and environment of minority and low-income populations impacted by CALFED Bay-Delta Programs,
- support outreach and education activities to improve the public's ability to participate in CALFED decision-making and Program implementation, including transparent and facile public access to data taken from all programs.