

Draft Preferred Alternative Update

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Developing a Draft Preferred Program Alternative

(NOTE: This draft paper provides an overview of how "staged implementation" and predefined conditions and linkages for progressing between stages can be used to develop a draft preferred program alternative. The paper will be updated frequently with input from CALFED agencies and stakeholders. It is currently the primary discussion tool for developing a preferred alternative but will ultimately be incorporated in a broader long-term implementation plan for the preferred program alternative including the six common program elements, storage and conveyance improvements, financing, monitoring, and an assurances package. From agency and stakeholder comments, three time periods are evident between now and completion of Program in several decades:

- Between now and the Record of Decision and Findings on the Programmatic EIS/EIR [decisions required during this period will be covered a separate report]*
- During Stage 1 covering approximately the first 7± years of implementation [primary focus of this report and attachments]*
- Long-term implementation following Stage 1 [contained in the long-term implementation plan mentioned above])*

CALFED is exploring three basic alternatives (approaches) to solving the problems in the Bay-Delta system. As part of each alternative, there are six common program elements (water quality, water use efficiency, ecosystem restoration, levee system integrity, water transfer framework, and watershed coordination) and related assurances, financing, and monitoring that will make up a preferred program alternative. The alternatives also include water storage and different Delta conveyance configurations.

The preferred program alternative will be a comprehensive package of the six common program elements and water storage and conveyance improvements that, together, must reduce conflicts in the Bay-Delta system. Each of these eight program elements will move forward together to solve problems in four areas of the Bay-Delta system:

- Ecosystem
- Water Supply Reliability
- Water Quality
- Levees

Considering the complexity and large number of items to be completed as part of the CALFED

Program, implementation will be conducted in several stages over 30 or more years. The first stage (approximately 7+ years) will consist of actions which begin to make progress towards meeting CALFED goals to simultaneously solve problems in these four areas. Many of the actions included in subsequent stages will depend on additional scientific information and evidence of need collected during this first stage of implementation.

The following sections outline the components of a draft preferred program alternative, with primary emphasis on the concept of "staged implementation", conditions and linkages which guide initial and future implementation stages, and a list of example Stage 1 actions. These components form the basis of a preferred program alternative.

Components of a Draft Preferred Program Alternative

For CALFED to succeed, it must develop a program which both fulfills its mission and has broad support from government agencies and stakeholders. It is likely that stakeholder support will be contingent upon progressing on a number of issues, including the items listed below, **prior** to finalizing the draft preferred program alternative (see Attachment A for further description of components). Therefore the "decision" for a draft preferred program alternative must include:

- Finance Package
- Environmental Documentation
- Water Project Operating Rules
- Governance and Assurances
- Stage 1 Actions
- Conditions/Linkages
- Program Element Status

Staged Implementation

The complexity of the CALFED Program contributes to the need for staged implementation. Each alternative is composed of hundreds of individual actions, and will require decades to fully implement. The challenge in implementing the Program in stages is to allow actions that are ready to be taken immediately to go forward, while assuring that each interest group has a stake in the successful completion of each stage.

Staged implementation for the CALFED preferred

Staged Implementation

- Identify certain actions at the outset (for all stages).
- Identify possible actions for future stages with associated conditions to guide the decisions. This will allow some decisions when more scientific information will be available and the effects of previous actions will be better known.

program alternative involves identifying certain actions for implementation for which there is general agreement and justification, and also identifying actions where uncertainty exists and developing conditions for moving beyond Stage 1. For the Program actions where uncertainty exists, certain predefined conditions would need to be met before actions could proceed. For example, certain conditions would be linked to the decision to construct major facilities. "Conditional decisions" on several Program elements may be required at each stage of implementation.

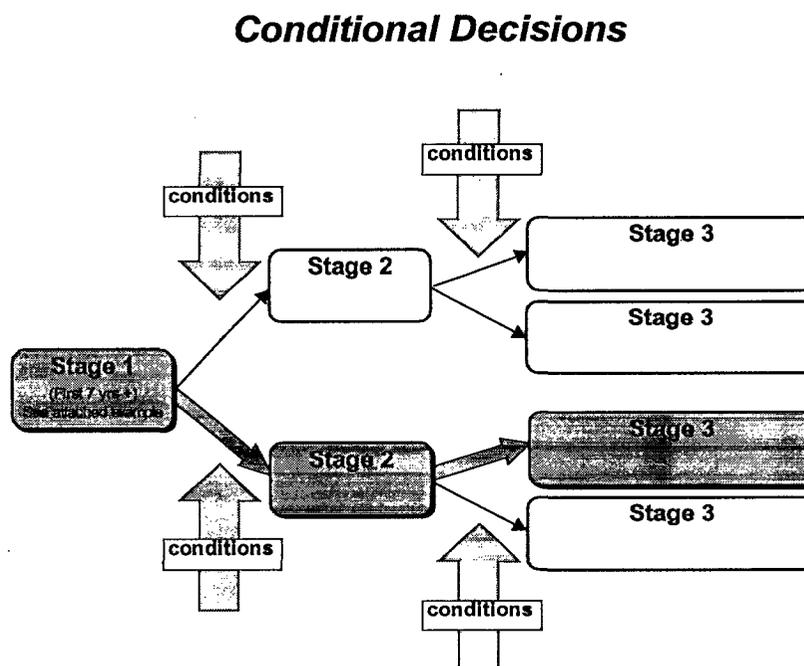
Conditional Decision

For those areas of the program where uncertainty or important linkages exist, the decision to proceed will be guided by a carefully crafted set of predefined conditions. Conditional decisions determine how the Program moves from stage to stage.

Decisions on what actions should be part of the draft preferred program alternative fall into three categories:

1. Yes - Proceed with an action based on general agreement that it is part of CALFED solution. Actions are linked to progress in all areas of the Program.
2. No - Reject the action due to failure to meet CALFED objectives and solution principles.
3. Maybe - For the actions where uncertainty or important linkages exist, the decision can be structured in two basic ways:
 - An action does not proceed unless the other selected actions fail to produce necessary results and specific conditions are met.
 - An action proceeds as long as certain linkages are maintained and conditions met.

The adjacent diagram is a simplified schematic showing how implementation could progress from one stage to the next with conditional decisions at each stage. Implementation would begin with Stage 1 including a set of actions that move the Program towards CALFED goals. Stage 1 would also include a set of conditions to guide how the Program would move into subsequent stages.



For example, currently there is uncertainty on the need for major facilities (isolated facility and surface storage) to meet CALFED goals. The most controversial example involves the possible construction of an isolated facility as part of a dual conveyance system. Because of significant uncertainties about (1) the performance of the alternatives and (2) future drinking water standards and diversion effects on fisheries, CALFED may not be able to rule out the need for a dual conveyance facility to achieve its mission. But neither can it conclude, based upon current information, that the facility is absolutely necessary for fulfilling that mission.

In addition, because of the uncertainty, major facilities (isolated facility and surface storage) would be included in the preferred program alternative if there is any conditional possibility of implementing them to achieve Program benefits. However, this is not a commitment to build these facilities. Strict conditions, including site specific environmental documentation and permitting, would need to be satisfied prior to any construction.

Stage 1 Implementation

Stage 1 is defined as the period extending from certification of the programmatic EIS/EIR to just prior to making a decision whether or not to issue permits for the major storage and conveyance facilities.

This first stage begins a series of actions that will ultimately form the CALFED solution. The first stage does not set a direct path to any specific predefined solution but begins a process where the solution can change depending on the outcome on predefined conditions. The first stage can lead to an Alternative 1, 2, or 3 or an alternative that includes a combination of parts

from each of these to form a preferred alternative depending on how the predefined conditions are met. The Stage 1 actions must be carefully selected so they do not predetermine the final alternative or adversely affect the ability to make future decisions. At the same time, CALFED recognizes the need for adaptive management and that some Stage 1 actions may need to be refined as better information becomes available in the future.

In order to succeed:

- Stage 1 must begin the commitment for improvement in all Program areas for the Bay-Delta system.
- Stage 1 must provide stability in the water resources management framework until actions in subsequent stages substantively reduce conflicts in the system. This can initially be achieved by an extension and/or expansion of conditions in the 1994 Bay-Delta Accord.

The *DRAFT Example Stage 1 Implementation* (Attachment B) provides potential actions for each CALFED Program element. It includes studies, site specific environmental documentation, and permitting work for conveyance and storage facilities but does not include commitments to build them.

Potential Conditions/Linkages for Future Decisions

Discussion is beginning on some potential conditions and linkages for a draft preferred program alternative. There are many potential linkages between the various actions in the common program elements, storage, and conveyance.

Based on extensive stakeholder input over the last three years we are developing a proposed approach to crafting the draft preferred program alternative. There is broad agreement on proceeding with the common program elements, but only if implementation is linked to reasonable progress in all Program areas. However, for the storage and conveyance elements of the Program, there is uncertainty on the need for major facilities to achieve CALFED goals. Therefore, we have proposed, in general terms, a series of predefined conditions which need to be met in order to proceed with storage and conveyance actions. As described earlier, for those actions where sufficient uncertainty exists, a decision can be structure in two ways; (1) an action does not proceed unless certain conditions occur, or (2) an action proceeds if certain conditions occur.

The following linkages and conditions are proposed to facilitate discussion among agencies and stakeholders:

1. **Program Element Linkages.** Meeting the CALFED mission statement and goals is dependent on significant progress on the common program elements of:

- Water transfer framework
- Water use efficiency
- Levee system integrity
- Ecosystem restoration
- Water quality
- Watershed coordination
- Storage
- Conveyance

All program elements need to progress together. Progress in each element needs to be linked to progress in all other elements of the preferred program alternative. The Actions in Stage 2 proceed if there is reasonable progress for all program elements in Stage 1.

2. **Conveyance.** Our primary strategy is to develop an optimized Delta conveyance alternative based on the existing Delta configuration or modifications of Delta channels. Our contingent strategy is to consider a dual Delta conveyance with an isolated facility only if the primary strategy does not meet CALFED goals. Dual Delta conveyance with an isolated facility will only be considered if there is:
 - a. **Public health** mandate (e.g., bromide levels) that cannot be addressed more economically by source water improvements/improved water treatment, **---or---** there is inability to achieve **fishery recovery** due to water exports
 - b. Limit on the amount of water that can be exported (linked to water year type)
 - c. Commitment (legislative or contractual) to use excess excavated material from facility construction for levee and habitat improvements
 - d. Commitment (Delta standards or contractual) to preserve in-Delta water quality sufficient to protect existing beneficial uses
 - e. Commitment to address potential seepage from the isolated conveyance facility
 - f. Commitment to address potential flood impacts along the facility alignment
 - g. Long-term funding for Delta levees (perhaps tied to quantity of water moved in the isolated facility)
 - h. Commitment (legislative) that construction of isolated facility cannot proceed ahead of progress towards new regional surface storage
 - i. Site-specific environmental documentation, determination of consistency or compliance with state and federal regulations, and necessary permits, authorizations, or waivers are completed
 - j. Demonstrated willingness to finance by beneficiaries
 - k. Agreement on operating authority and initial operating criteria

3. **Water Export Regulations.** Water export regulations are revised if:
 - a. Significant changes in the Delta conveyance configuration and condition of the ecosystem occur

4. **Surface Storage.** Surface storage is included as long as:
 - a. Defined progress for the water use efficiency program is achieved or other non-structural demand management strategies have been implemented to the extent practicable. Users of new water supplies must meet specific, measurable efficiency criteria and demonstrate that water available through marketing is appropriately incorporated into the source mix prior to receiving new water supplies
 - b. Demonstrated progress on groundwater and conjunctive use on a Program-wide basis
 - c. Demonstrated willingness to finance by beneficiaries
 - d. Site-specific environmental documentation, determination of consistency or compliance with state and federal regulations, and necessary permits, authorizations, or waivers are completed

5. **Groundwater/conjunctive use programs.** North of Delta groundwater/conjunctive use programs are not implemented unless:
 - a. Progress is being made on north of Delta surface storage
 - b. Baseline groundwater monitoring, and groundwater modeling are established
 - c. Site-specific environmental documentation, determination of consistency or compliance with state and federal regulations, and necessary permits, authorizations, or waivers are completed
 - d. Demonstrated willingness to finance by beneficiaries

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Components of a Preferred Program Alternative In the ROD and Findings

Certification of the *Final Programmatic EIS/EIR* will occur on the federal side of CALFED with the Record of Decision (ROD) and on the state side of CALFED with the Secretary of Resources' adoption of Findings, statement of overriding considerations, and certification of the document. Among other things, these "decision" documents will include information on the preferred program alternative. The following provides initial thoughts on what may be included in the in the description of the preferred program alternative at the time of the ROD and Findings.

Finance Package - The finance package will include the financing principles and general cost allocation strategy that outlines how Program implementation will be funded (the specific agreements will be finalized in Stage 1). The following information will be available at the time of the ROD & Findings:

- **Estimate of total Program costs** for improvements and ongoing annual operating and maintenance costs (estimates will also be included in the long-term implementation plan)
- **Agreement on the financial principles** (final signed cost share agreements will be prepared in Stage 1)
 - Benefits-based approach (beneficiaries pay)
 - Public/User cost split
 - Crediting for other parallel efforts or contributions to Category III
 - Cost allocation methodology or strategy

Environmental Documentation - This will provide a summary to document compliance with applicable environmental documentation requirements at the programmatic level. The following information will be available at the time of the ROD & Findings:

- **Conservation Strategy** will be final for ESA including consideration of "safe harbor" protections for property owners where appropriate (refinement will continue in Stage 1 as new actions are implemented)
- **Clean Water Act** compliance [404(b)(1) Guidelines]
- **Other Acts, Executive Orders, and state/regional/ local plan consistency**

Water Project Operating Rules - Water project operating rules need modification with changing conditions as the Program is implemented. An extension of the Accord will cover operating rules until the ROD and Findings. At that time, interim Stage 1 water project operating

rules for environmental flows and the water users will be revised to include conditions existing at that time (joint point of diversion, b(2) and to set rules for those actions proposed for Stage 1 implementation (final rules will be determined in Stage 1).

Governance and Assurances - An assurances package is a set of actions and mechanisms to assure that the Program will be implemented and operated as agreed. The assurances package will include mechanisms to be adopted immediately as well as a contingency process to address situations where a key element of the plan cannot be implemented as agreed. While the assurances package will be substantially complete before beginning Stage 1, some details remain to be finalized early in Stage 1 after the federal ROD and the state Findings. The following information will be available at the time of the ROD & Findings:

- **Conservation strategy will be final** (refinement of the strategy will continue in Stage 1 where incidental take will be provided, where necessary, for those actions identified in the ROD to be completed during Stage 1)
- **Description of new institution/entity** and how agencies will coordinate
- **Description of forum for stakeholder involvement**
- **Financial strategy and principles** (see above Finance Package)
- **Conditions and linkages** (see Conditions/Linkages for Future Decisions)
- **Final contingency response process** for unforeseen circumstances
- **Framework for the many other assurances** in the package

Stage 1 Actions - The preferred program alternative will consist of many actions which will be implemented in stages over several decades. Three or more stages are anticipated. Stage 1 includes the actions for implementation in approximately the first 7 ± years (see Attachment B for Stage 1 actions). Due to the time delay in implementation, actions in subsequent stages will be less detailed and subject to refinement and further definition as more information becomes available.

Conditions/Linkages - Agreement on the conditions and linkages to guide progress from one stage of implementation to the next is necessary for a complete preferred program alternative (see Conditions/Linkages for Future Decisions).

Program Element Status - Work is continuing on refining each program element. The ROD and Findings will contain agreement on the level of programmatic detail contained in each of the eight program elements. The Programmatic EIS/EIR appendices contain detailed descriptions of each program element. The Long-Term Implementation Plan includes detailed implementation plans for each program element. The following is a summary of the expected status for each program element at the time of the ROD and Findings:

- **Water Transfer Framework** - The water transfer framework is designed to improve the efficiency of the water transfer process. This will facilitate development of a statewide water transfer market while providing protection from

third party impacts and local groundwater or environmental impacts. This element will propose a policy framework for water transfer rules, baseline data collection, public disclosure, and analysis and monitoring of water transfers, both short- and long-term. The following information will be available at the time of the ROD & Findings:

- **Description of the clearinghouse function**
 - **Description of streamlined technical, operational, and administrative rules** that govern water transfers
 - **Description of principles for access to state and federal facilities** and for allocating available transfer capacity
 - Description of \$20 million water purchase fund for environmental flows (see Attachment B for Stage 1 actions for ecosystem)
 - **Stage 1 actions** (see Attachment B for Stage 1 actions)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)
- **Water Use Efficiency Program** - The water use efficiency element focuses on formulation of policies which support implementation of efficiency measures at the local and regional level. The policy is a reflection of the State of California legal requirements for reasonable and beneficial use of water. The role of CALFED agencies in water use efficiency will be twofold. First, they will offer support and incentives through expanded programs to provide planning, technical, and financial assistance. Second, the CALFED agencies will provide assurances that cost-effective efficiency measures are implemented. The following information will be available at the time of the ROD & Findings:
 - **A summary of the analysis of potential benefits and savings** from water use efficiency measures
 - **Description of requirements for agricultural conservation plans** that meet both AB3616 and CVPIA (for volumetric measurement)
 - **Description of urban MOU process** and need for implementing legislation
 - **Description of available planning, technical, and financial assistance**
 - **Stage 1 actions** (see Attachment B)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)
 - **Levee System Integrity Program** - The focus of the long-term levee protection element of the Program is to reduce the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic breaching of Delta levees. The following information will be available at the time of the ROD & Findings (see Attachment B for Stage 1 actions):

- **Plan for base level funding** to provide distributed funding to participating local agencies
 - **Plan for funding of special improvement projects** for habitat and levee stabilization to augment the base-level funding
 - **Plan for grant projects to develop best management practices for subsidence control**
 - **An advanced measures plan and emergency management plan** to more effectively plan for and deal with potential levee disasters
 - **A seismic risk assessment** to evaluate performance of the existing levee system during seismic events
 - **Stage 1 actions** (see Attachment B)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)
- **Ecosystem Restoration Plan** - will provide a comprehensive strategic plan for improving and increasing aquatic and terrestrial habitats and improving ecological functions throughout the Bay-Delta system. The following information will be available at the time of the ROD & Findings:
 - **Targets for implementation**; e.g. acres of various types of habitat, \$ for water purchase
 - **Package of ecological indicators** to help measure future success
 - **Description of the high priority actions** for Stage 1 implementation (see Attachment B for Stage 1 action list)
 - **Scientific evaluation needs** (see Attachment B for Stage 1 Monitoring, Research, and Adaptive Management)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)
- **Water Quality Program** - The water quality program will consist of a wide variety of actions to provide good water quality for environmental, agricultural, drinking water, industrial, and recreational beneficial uses of water. The majority of current water quality actions rely on comprehensive monitoring and research to improve understanding of effective water quality management and on the ultimate control of water quality problems at their sources. The following information will be available at the time of the ROD & Findings:
 - **Targets for implementation**
 - **Description of proposed studies/testing/pilot evaluations**
 - **Description of high priority water quality improvement actions**
 - **Stage 1 actions** (see Attachment B)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)

development)

- **Watershed Coordination** - Watershed management is a broad term used to describe diverse actions that maintain or improve environmental conditions and resource management throughout a watershed. This program element is primarily a coordination effort with local watershed groups. The watershed coordination element also provides a focus for public participation for other Program elements. The following information will be available at the time of the ROD & Findings:
 - **Description of the coordination framework** to define roles and communication
 - **Description of plan to foster local watershed groups**
 - **Description** of clearinghouse
 - **Stage 1 actions** (see Attachment B)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)

- **South of Delta Groundwater Banking and Conjunctive Use** - This is primarily a coordination effort with local implementing entities but could include some public projects. This first stage includes construction of several projects. Additional projects, if feasible, could be constructed in later stages. The following information will be available at the time of the ROD & Findings:
 - **Description of linkages and conditions** for development (see Conditions/Linkages for Future Decisions)
 - **Description of most promising sites** for development
 - **Process for site specific evaluation and permitting** (see Attachment B for Stage 1 storage evaluations)
 - **Stage 1 actions** (see Attachment B)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)

- **North of Delta Groundwater Banking and Conjunctive Use** - This is primarily a coordination effort with local implementing entities but could include some public projects. This first stage includes investigations for coordination with new regional surface storage. Projects, if feasible, could be constructed in later stages. The following information will be available at the time of the ROD & Findings:
 - **Description of linkages and conditions** for development (see Conditions/Linkages for Future Decisions)
 - **Process for site specific evaluation and permitting** (see Attachment B for Stage 1 storage evaluations)
 - **Stage 1 actions** (see Attachment B)

- **Implementation Plan** (see Long-Term Implementation Plan, under development)
- **Surface Storage** - Surface storage can be built upstream of the Delta, in- or near-Delta, and south of Delta off-aqueduct if certain predefined conditions are met during Stage 1 implementation. Depending on the need, new offstream storage and/or expansion of existing onstream reservoirs could add up to several million acre-feet of new storage. Since surface storage normally takes many years to study, design, and build, Stage 1 focuses on efforts necessary for permitting of specific projects. The following information will be available at the time of the ROD & Findings:
 - **Description of linkages and conditions** for development (see Conditions/Linkages for Future Decisions)
 - **Cost share/financial principles** (see above Finance Package)
 - **Short list description of 3 to 5 most promising sites** for potential storage development (data available from site screening, programmatic NEPA/CEQA, 404 analysis including least cost evaluation)
 - **Process for site specific evaluation and permitting** (see Attachment B for Stage 1 storage evaluations)
 - **Stage 1 actions** (see Attachment B)
 - **Implementation Plan** (see Long-Term Implementation Plan, under development)
- **Conveyance** - The primary strategy for Delta conveyance is to develop through Delta channels necessary to meet Program goals. However, the contingent strategy is to use dual Delta conveyance with an isolated facility only if through Delta conveyance does not meet Program goals. Since these major conveyance improvements could take many years to study, design, and build, Stage 1 focuses on efforts leading up to permitting of specific projects. South Delta conveyance improvements are included in Stage 1 would function with either strategy. The following information will be available at the time of the ROD & Findings:
 - **Description of linkages and conditions** for development (see Conditions/Linkages for Future Decisions)
 - **Cost share/financial principles** (see above Finance Package)
 - **Stage 1 actions to implement south Delta improvements** (see Attachment B for Stage 1 actions)
 - **Operating rules** consistent with timing and configuration of actions planned for Stage 1
 - **Process for site specific evaluation and permitting** of north Delta improvements and the contingent strategy including an isolated facility (see Attachment B for Stage 1 storage evaluations)

- **Implementation Plan** (see Long-Term Implementation Plan, under development)

These will be more fully developed as parts of the preferred Program alternative for the *Revised Draft Programmatic EIS/EIR* in late 1998, the *Final Programmatic EIS/EIR* in late 1999 and the ROD and Findings on the final document. Prior to implementing site specific actions, additional environmental review will take place, tiering off the Programmatic EIS/EIR.

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Example Stage 1 Implementation
(Approximately First 7+ Years of Implementation)

Stage 1 is defined as the period extending from certification of the programmatic EIS/EIR to just prior to making a decision whether or not to issue permits for the major storage and conveyance facilities. Agreement on Stage 1 actions is only one part of the decision for a preferred program alternative.

The following pages provide more detail on potential actions for Stage 1. The list of actions is intended as a starting point for discussions on potential Stage 1 implementation and will be frequently refined and updated with input from CALFED agencies and stakeholders. These actions will be more fully developed as parts of the preferred program alternative for the *Revised Draft Programmatic EIS/EIR* in late 1998 and for the *Final Programmatic EIS/EIR* in late 1999. Consistent with the concept of adaptive management, some actions may need to be refined within the time frame of Stage 1 to reflect changing conditions or new information.

The outcome of and specific sites for Stage 1 decisions will not be known until additional information is available, and until the options to carry out these Stage 1 proposals have undergone environmental review. Consequently, the outcome could be altered as a result of that second tier environmental review and mitigation measures imposed as a part of those actions. However, as long as the impacts from the actions in Stage 1 have been included in the Programmatic EIS/EIR, the subsequent environmental documents can tier off the Programmatic document for cumulative and long-range impacts of the Programmatic decision.

Each potential action in the following Stage 1 list includes an estimate (in parenthesis) of when the action may occur within Stage 1. For example, "(yr 1)" indicates the action will occur in the first year following certification of the EIS/EIR.

Assurances

An assurances package is a set of actions and mechanisms to assure that the Program will be implemented and operated as agreed. The assurances package will include mechanisms to be adopted immediately as well as a contingency process to address situations where a key element of the plan cannot be implemented as agreed. While the assurances package will be substantially complete before beginning Stage 1, some details remain to be finalized early in Stage 1 after the federal ROD and the state Findings.

1. Complete programmatic implementation plan (yr 1)
2. Finalize coordination between agencies or new agency (yr 1-3); e.g., provide for

- ecosystem restoration authority within the individual CALFED agencies or in a new organization with responsibility for ecosystem restoration
3. Refine conservation strategy (yr 1-3); e.g., incidental take will be provided, where necessary, for those actions identified in the ROD to be completed during Stage 1
 4. Negotiate final details of the assurances package and operational rules (yr 1-3)
 5. Recommend state and/or federal legislation if necessary for new institutional arrangements or Program implementation (yr 2-3); e.g., legislation to modify water transfer law and statutes to facilitate an appropriately protective water transfer framework recognizing law that may exist at that time
 6. Incorporate the final State Board's decision in water transfer and operational rules
 7. Implement a CALFED environmental documentation and permit coordination process (yr 1-7)
 8. Implement and revise contingency response as needed (yr 1-7)

Finance

The financial package will seek to finance the preferred program alternative through a combination of federal, state, and user funds. This financing will continue over several decades as the various parts of the preferred program alternative are implemented, operated, and maintained. Stage 1 establishes the financial package for use in all stages.

1. Establish reliable short-term and long-term funding for each Program element (1-7)
 - Finalize cost share agreements (yr 1)
 - Finalize user fees (yr 1)
 - Seek federal authorization/appropriation and seek authority to sell state bonds (yr 1-7)

Monitoring, Research, and Adaptive Management

Establish monitoring for all program elements that focuses on obtaining data on a timely basis, providing interpretation of data, and maintaining data in an accessible and useful form. The monitoring, assessment of data, and resultant need for adaptive management are required throughout the CALFED Bay-Delta Program. The first stage refines the monitoring system and procedures which will continue in subsequent stages.

1. Refine monitoring plan (CMARP) including all elements of the Program (yr 1)
2. Define adaptive management process for making adjustments as better information becomes available, including who makes future decisions, for all elements of the Program (yr 1); e.g., define triggers and time periods necessary for deciding need for change in management direction

3. Implement monitoring plan under direction of a single umbrella entity as defined in CMARP with linkage to adaptive management process (yr 1-7)
4. Annual reports on status/progress and need for adjustments (yr 1-7)
5. Analysis of status and need for adjustments of actions for stage 2 (yr 5-7)
6. Provide input to assist adaptive management in Program elements (yr 1-7); e.g., adaptive management for ecosystem restoration and water quality
7. Complete monitoring studies identified by diversion effects on fisheries team to provide feedback on actual diversion effects of south Delta pumps (yr 2-7)
8. Feedback available on need to reduce bromides (yr 5)
9. Feedback available on water quality in south Delta and lower San Joaquin (yr 1-7)

Water Transfer Framework

The water transfer framework is designed to improve the efficiency of the water transfer process. This will facilitate development of a statewide water transfer market while providing protection from third party impacts and local groundwater or environmental impacts. This element will propose a policy framework for water transfer rules, baseline data collection, public disclosure, and analysis and monitoring of water transfers, both short- and long-term. The first stage implements the processes which will continue in subsequent stages.

1. Establish clearinghouse to ensure public participation and disclose information, perform analyses of transfer impacts, and evaluate and monitor actual transfer impacts (yr 1)
2. Continue clearinghouse functions to provide information on environmental, economic and water resource protections (yr 2-7); e.g., third party impacts, groundwater resource protection, instream flow [1707] transfers, and environmental protection in source areas
3. Refine technical, operational, and administrative rules that govern water transfer transactions (yr 1-4); e.g., area of origin/watershed priorities, rules/guidelines for environmental water transfers, transferable water and the "no injury rule", operations criteria and/or carriage water requirements, reservoir refill criteria, and streamlined permitting process
4. Refine disclosure process that provides information regarding potential access to state and federal water facilities for movement of water transfers (yr 2); e.g. priority of transferred water in existing project facilities, priority of transferred water in new facilities, wheeling and power costs
5. Resolve allocation of available transfer capacity (yr 1)
6. Develop rules for allocation of wheeling and power costs in compliance with CALFED "user pays" principle (yr 1)

Water Use Efficiency

The CALFED water use efficiency element focuses on formulation of policies which support implementation of efficiency measures at the local and regional level. The policy is a reflection of the State of California legal requirements for reasonable and beneficial use of water. The role of CALFED agencies in water use efficiency will be twofold. First, they will offer support and incentives through expanded programs to provide planning, technical, and financial assistance. Second, the CALFED agencies will provide assurances that cost-effective efficiency measures are implemented. The first stage implements the processes which will continue in subsequent stages.

1. Expand DWR and USBR programs to provide technical and planning assistance to local agencies and explore new ways of developing assistance and involving other CALFED agencies (yr 1-7)
2. Introduce state legislation (amend the water code) to give DWR approval authority for urban water management plans (yr 1-3); e.g., approved plans would be a condition for urban areas receiving CALFED benefits
3. Review and approve urban water management plans (yr 1-7); assumes DWR has overall authority but that approval of plans for best management practices (under urban MOU) would be deferred to Urban Council as shown in the following two bullets
4. Introduce state legislation to give Urban Council authority to certify water agency implementation plans (under urban MOU) for best management practices (yr 1-3)
5. Implement urban MOU process fully with certification of agency implementation plans throughout the Delta service area(yr 3-7)
6. Implement the Agricultural Water Management Council (AB 3616) process fully with endorsement of agency plans (yr 1-7); e.g., rely on Council to endorse plans of signatory member agencies as condition for receiving CALFED benefits, explore additional ways to build consensus on the process
7. Seek resolution to legal, institutional, and funding limitations for agricultural and urban water recycling (yr 1-3)
8. Participate in conservation and water recycling demonstration projects (yr 3-7); e.g., funding assistance for projects providing multiple CALFED benefits such as agricultural tail water recycling which could benefit fish by reducing diversions, reduce pollutant loading, etc.
9. Identify practices to improve water management for environmental uses (yr 1-7)

Levees

The focus of the long-term levee protection element of the Program is to reduce the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic breaching of Delta levees. Levee protection is an ongoing effort which consists of:

- *Base level funding to provide distributed funding to participating local agencies*
- *Funding of special improvement projects for habitat and levee stabilization to augment the base-level funding*
- *Grant projects to develop best management practices for subsidence control*
- *An advanced measures plan and emergency management plan to more effectively plan for and deal with potential levee disasters*
- *A seismic risk assessment to evaluate performance of the existing levee system during seismic events*

The first stage begins the decades-long process to improve reliability of Delta levees.

1. Obtain short-term federal and state funding authority as a bridge between the existing Delta Flood Protection authority (AB360) and long-term levee funding (yr 1-5)
2. Obtain long-term federal and state funding authority (yr 1-7); e.g., the Corps of Engineers' current Delta Special Study would develop into a long-term Delta levee reconstruction program and the state would be the local cost sharing partner
3. Maintain current federal cost-sharing of 65% and establish state and local cost sharing percentages (yr 1)
4. Conduct project level environmental documentation and obtain appropriate permits (yr 1-7)
5. Implement demonstration projects for levee designs that minimize the need for continuous disruption of habitat from levee maintenance and minimize the need for ongoing mitigation from disrupted habitat (yr 1-7)
6. Coordinate Delta levee improvements with ecosystem improvements (yr 1-7); e.g., coordinate improvements, modify maintenance manuals as appropriate to accommodate ERP actions near levees, separately track levee mitigation costs and ERP costs
7. Fund levee improvements up to PL84-99, approx. \$114 million [\$74 million during years 1 through 5 and \$40 million during years 6 through 7] in first stage (yr 1-7); e.g., proportionally distribute available funds to entities making application for cost sharing of Delta levee improvements
8. Further improve levees which have significant statewide benefits approx. \$82 million [\$58 million during years 1 through 5 and \$24 million during years 6 through 7] in first stage (yr 1-7); e.g., statewide benefits to water quality, highways, etc.
9. Coordinate Delta levee improvements with Stage 1 water conveyance improvements and with potential conveyance improvements in subsequent stages (yr 1-7)
10. Institute Advanced Measures Plan and Emergency Management Plan (yr 1-7); e.g., establish \$10 million revolving fund, refine command and control protocol, stockpile flood fighting supplies, establish standardized contracts for flood fighting and recovery operations, outline environmental considerations during an

- emergency
11. Initiate a subsidence control program to develop and implement BMP's for lands adjacent to levees, approx. \$11 million for Stage 1(yr 1-7)

Ecosystem Restoration

The CALFED ecosystem restoration plan (ERP) is designed to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species. A foundation of this program element is the restoration of ecological process associated with streamflow, stream channels, watersheds, and floodplains. Adaptive management, scientific oversight, and program review will guide implementation of the ERP over the 20 to 30 year implementation period. These restoration efforts provide the CALFED Bay-Delta contribution to the recovery of listed plants, fish, and wildlife, and in restoring other non-listed species. The Stage 1 restoration efforts are a continuation of existing CALFED ecosystem efforts and focus on diversion effects on fisheries and other actions that provide early benefit to the ecosystem. The priorities for restoration activities will be first on existing public lands as appropriate, second on acquisition of easements, and third on acquisition of fee title as necessary to achieve program objectives. Acquisition will be on a willing seller basis and with emphasis on local coordination and partnerships.

1. Project level environmental documentation and permitting as needed (yr 1-7)
2. Establish a partnership with a university and fund focused research (yr 1-7)
3. Full coordination with other ongoing activities which address ecosystem restoration in the Bay-Delta system (yr 1-7); e.g., CVPIA, Four Pumps Agreement, etc.
4. Continue high priority actions that reduce stressors of direct mortality (yr 1-7):
 - Aggressively screen existing unscreened or poorly screened diversion on the Sacramento River, San Joaquin River, and tributary streams
 - Remove select physical barriers to fish passage
5. Implement restoration projects for habitat improvement on 25,000 to 30,000 acres
 - Projects for habitat restoration (riparian, tidal wetlands, seasonal wetlands, wildlife friendly agricultural practices, etc. for fish and wildlife) along the South Fork Mokelumne River corridor; e.g., potential areas could include Canal Ranch, Brack Tract, McCormack Williamson Tract, easements on Staten Island (if willing local participants)
 - Projects for habitat restoration (riparian, tidal wetlands, regrading to reduce fish stranding, etc. for fish and wildlife) in Yolo Bypass corridor; e.g., potential areas could include easements along Tule Canal, some acquisitions along Cache Slough, acquire Little Holland, management direction for Liberty and Prospect Islands

- Projects for habitat restoration (riparian, attached berms and shallows, etc. to provide more shading, refuge, and residence time) along the mainstem San Joaquin River corridor within the legal Delta
 - Coordinate ecosystem improvements with Delta levee improvements for the South Fork Mokelumne River corridor, the Yolo Bypass corridor, the San Joaquin River corridor, and with other levee improvements that provide habitat connectivity and value to overall ecosystem restoration plan; avoid habitat improvements along corridors that could become water conveyance corridors in subsequent stages
6. Incorporate ecosystem improvements with subsidence reversal plans (yr 1-7)
 7. Develop an ecosystem water market (potentially \$20 million per year), after an appropriately protective water transfer framework has been established (yr 1-7); e.g., acquire 100,000 acre-feet on long-term basis and plan for other short-term purchases
 8. Acquire and restore select Sacramento River meander corridor easements [primarily easements with some acquisitions and habitat restoration] (yr 3-7)
 9. Continue flood plain easements along San Joaquin River (yr 4-7); e.g., there may be more opportunities for easements if Corps of Engineers proceeds with flood plan
 10. Continue gravel management (yr 5-7); e.g., isolate gravel pits on San Joaquin River tributaries and relocate gravel operations on Sacramento River tributaries (most gravel work would be implemented in subsequent stages with designs and plans for ecosystem reclamation of gravel mining sites)
 11. Improve monitoring, detection, and control of exotic species (yr 1-7); e.g., border inspections, balanced management, water hyacinth control, funded early response
 12. Continue scientific evaluations (yr 1-7); e.g., evaluation of instream flow needs
 13. Explore ways to provide incremental improvements in ecosystem values throughout the Bay-Delta system in addition to habitat corridors described above (yr 1-7); e.g., provide incremental improvements on private land through incentives, develop partnerships with farmers on "environmentally friendly" agricultural practices, etc.

Water Quality

The water quality program will consist of a wide variety of actions to provide good water quality for environmental, agricultural, drinking water, industrial, and recreational beneficial uses of water. The majority of current water quality actions rely on comprehensive monitoring and research to improve understanding of effective water quality management and on the ultimate control of water quality problems at their sources. The Stage 1 water quality effort focuses on reducing constituents contributing toxicity to the ecosystem and affecting water users.

1. Project level environmental documentation and permitting as needed (yr 1-7)

2. Support ongoing and develop new educational programs relating to urban and agricultural runoff (yr 2-7); e.g., point-of-sale literature packaged with pesticide and herbicide materials, educate applicators on proper use of pesticides and herbicides, etc.
3. Initiate high priority water quality improvement actions (yr 1-7); e.g. for mercury, copper, selenium, pesticides, and organic carbon
4. Studies/testing/pilot evaluations (yr 1-7); e.g., research Cache Creek mercury issues including habitat restoration potential for contributions to methyl mercury formation, research ecological effects of toxicants, research impacts of ecosystem restoration on organic carbon, research on reducing impacts of agricultural and urban discharges, conduct field level selenium exposure response studies
5. Implementation (and continued refinement) of needed actions based on results of the studies/testing/pilot evaluations (yr 3-7)
6. Continue to clarify use of and fine-tune water quality performance targets and goals (yr 1-7)
7. Participate in toxic site remediation if federal "Good Samaritan" protections are obtained (yr 3-7)
8. Coordinate with other programs (e.g., CVPIA) for retirement of 35,000 to 40,000 acres of lands with drainage problems

Watershed Management

Watershed management is a broad term used to describe diverse actions that maintain or improve environmental conditions and resource management throughout a watershed. This program element is primarily a coordination effort with local watershed groups. The watershed coordination element also provides a focus for public participation for other Program elements. CALFED will participate where proposed watershed actions provide a strong link to critical Delta problems; expect \$10 million to \$15 million annually. The implementation ownership of the watershed work is with the local groups.

1. Develop a coordination framework to define roles and ensure effective communication among state, federal, local government, and stakeholder groups (yr 1); e.g., \$ and coordination to help local resource conservation districts develop consistent standards
2. Develop a plan to foster local watershed groups (yr 1-2); e.g., formal MOU or other agreement with functional groups in each ecological zone of ERPP (such as Yolo Basin Foundation, Deer Creek Conservancy, etc.)
3. Provide stewardship funds to foster local watershed groups (yr 1-7)
4. Select a university to manage technical input to a clearinghouse function (yr 1)
5. Establish clearinghouse to assist watershed groups with information about funding opportunities, technical assistance, and project implementation (yr 1); e.g. continuous review and input to existing watershed inventories, databases

6. Develop performance measures which show the level of success or failure for use in adjusting future watershed participation (yr 1-2)
7. Identify priority watersheds in terms of solutions to problems affecting the Bay-Delta estuary and develop implementation schedule tied with other Program elements (yr 2-7); e.g., priorities for fire control, meadow restoration vegetation management, protecting source water quality, reduce erosion, control exotic species, etc.
8. Identify funding opportunities (pool agency money, grants, cost share, etc.) to provide incentives to local level for select upper watershed projects (yr 2-7); e.g., Plumas County, Placer County, El Dorado County, etc.

Storage

New storage will be included in the preferred program alternative. Storage of water in surface reservoirs or groundwater basins can provide opportunities to improve the timing and availability of water for all uses. The following storage actions will depend on selections in the preferred alternative and how the predefined conditions are met as time progresses. However, the first stage for storage is relatively independent of the storage in the preferred alternative.

South of Delta Groundwater Banking and Conjunctive Use - *This is primarily a coordination effort with local implementing entities but could include some public projects. This first stage includes construction of several projects. Additional projects, if feasible, could be constructed in later stages.*

1. Develop and implement a framework for conjunctive use (yr 1)
2. Provide funding assistance for groundwater plan development (yr 1-7)
3. Identify local cooperating entities and CALFED role (yr 1-3)
4. Initiate baseline monitoring and modeling (yr 1-5)
5. Initiate demonstration project (yr 1); e.g., potential options could include Madera Ranch, American Basin
6. Initiate field and pilot studies (yr 2-7)
7. Project environmental documentation and permitting (yr 3-7)
8. Designs (yr 4-7)
9. Construct 2 to 3 facilities with target volume of ____ acre-feet storage (yr 5-7); e.g. potential option could include expanded Kern water bank
10. Study additional potential project sites (yr 2-7)

North of Delta Groundwater Banking and Conjunctive Use - *This is primarily a coordination effort with local implementing entities but could include some public projects. This first stage includes investigations for coordination with new regional surface storage. Projects, if feasible, could be constructed in later stages.*

1. Develop and implement a framework for conjunctive use (yr 1)
2. Provide funding assistance for groundwater plan development (yr 1-7)
3. Identify local cooperating entities and CALFED role (yr 1-3)
4. Initiate baseline monitoring and modeling (yr 1-7)
5. Initiate field and pilot studies (yr 2-7)
6. Project environmental documentation and permitting (yr 3-7)
7. Designs (yr 4-7)

Surface Storage - *Surface storage could be constructed upstream of the Delta, in or near the Delta, and/or storage filled by diversions through the Delta Mendota Canal or the California Aqueduct. Depending on the need, new offstream storage and/or expansion of existing onstream reservoirs could add up to several million acre-feet of new storage. This first stage will primarily consist of studies and evaluations necessary for final permitting. This will allow surface storage projects to be ready for construction should the projects be selected for implementation.*

1. Identify local cooperating entities and CALFED role (yr 1-3)
2. Environmental documentation (yr 1-5)
3. Feasibility studies (yr 1-5)
4. Field and pilot studies (yr 1-5)
5. 404(b)(1) analyses; project site screening, least cost evaluations, and equivalency analyses (yr 1-5)
6. Site selection (yr 4-5)
7. Permits and operating agreements (yr 5-7)
8. Evaluate improvements to potential conveyance to storage (yr 1-5); e.g., Tehama Colusa Canal and others

Conveyance

The conveyance element describes the configurations of Delta channels and related facilities for moving water through the Delta and to the major export facilities in the southern Delta:

- *The Delta channels could be maintained essentially in their current configuration with some improvements in the southern Delta.*
- *Significant improvements to northern Delta channels would accompany the southern delta improvements contemplated under the existing system conveyance above.*
- *The dual Delta conveyance is formed around a combination of modified Delta channels and a new canal or pipeline connecting the Sacramento River in the northern Delta to the SWP and CVP export facilities in the southern Delta.*

The following draft conveyance actions will depend on selections in the preferred alternative and

how the predefined conditions are met as time progresses. However, the first stage for conveyance is relatively independent of the conveyance in the preferred alternative. Much of this first stage will consist of studies and evaluations necessary prior to final permitting the major conveyance features. This will allow conveyance projects to be ready for permitting and construction in later stages should the projects be selected for implementation. Some construction on the South and North Delta improvements could occur within the first stage to improve conditions for ecosystem and water management reliability.

South Delta Improvements - *South Delta improvements consist of methods to control south Delta stage and circulation issues, improved fish screen and salvage facilities, and SWP/CVP interties upstream and downstream of the export pumps. Stage 1 will complete methods to control stage and circulation issues and will provide fish screening demonstration projects for use in designing the permanent south Delta fish screening facility.*

1. Complete environmental documentation and permitting (yr 1-2)
2. Design south Delta improvements (yr 1); among others, such improvements could include:
 - Operable Old River fish barrier
 - Four south Delta waterway control structures
 - Clifton Court Forebay intake structure
 - Channel enlargement along Old River
 - Modified operation rules
3. Implement south Delta improvements [balanced to improve water supply and environmental conditions] (yr 2-4)
4. Implement an intertie between the Delta Mendota Canal (at approximately mile 8) and California Aqueduct downstream of export pumps (yr 2-4)
5. Construct fish screen demonstration project [full module of approximately 2500 cfs] for Tracy Pumping Plant (yr 1)
6. Convert fish screen demonstration project at Tracy Pumping Plant to production facility and expand capacity if appropriate (yr 4-6)
7. Implement first increment of new south Delta screening [full module at north end of Clifton Court Forebay] (yr 2-6)
8. Evaluate (and/or pilot test) benefits/impacts of recirculation of a portion Delta Mendota Canal flows through the Newman Wasteway to the San Joaquin River for water quality and ecosystem enhancement
9. Project environmental documentation and permitting for SWP/CVP intertie (yr 2-4)
10. Design SWP/CVP intertie upstream of export pumps [tie Tracy Pumping Plant to Clifton Court Forebay] (yr 5-6)

North Delta Improvements - *North Delta improvements consist of a new screened diversion and significant channel modifications including setback levees. The screened diversion and associated channels may be implemented in modular stages in order to resolve technical screening and fish passage issues at the appropriate scale. Stage 1 will focus on studies and design prior to construction. Select channel improvements may be constructed but the majority of the improvements, if any are selected, will be constructed in Stage 2. These through Delta improvements are the primary conveyance strategy of the preferred program alternative. However, a contingent strategy with dual Delta conveyance [through Delta with some isolated conveyance capacity] is maintained in case through Delta conveyance does not meet Program goals.*

1. Project environmental documentation (yr 1-5)
2. Feasibility studies for screened diversion and fish passage facilities, channel modifications, and habitat improvements (yr 1-5)
3. Field and pilot studies (yr 1-5)
4. Environmental documentation for land acquisition (yr 2-3)
5. Land acquisition (yr 4-6)
6. 404(b)(1) analyses; project site screening (yr 1-6)
7. Permits and operating agreements (yr 4-6)
8. Design of selected improvements (yr 4-6)
9. Construct selected improvements (yr 7)
10. Pilot studies for dredge material reuse (yr 1-7)

Isolated Facility - *The isolated facility consists of a new canal or pipeline connecting the Sacramento River in the northern Delta to the SWP and CVP export facilities in the southern Delta. CALFED cannot totally preclude the potential of an isolated facility at this time. However, as mentioned above, dual Delta conveyance with an isolated facility is a contingent strategy that will only be implemented if through Delta improvements do not meet Program goals. The following Stage 1 actions provide progress on initial studies and permitting in case the isolated facility is found necessary to meet CALFED objectives.*

1. Project environmental documentation (1-7)
2. Feasibility studies (yr 1-6)
3. Field and pilot studies (yr 1-6)
4. 404(b)(1) analyses; project site screening (yr 1-6)
5. Permits and operating agreements for isolated facility (yr 7+)
6. Assess right-of-way issues that could impact CALFED's ability to maintain a viable contingency for a potential future habitat corridor and facility right-of-way (yr 2-7)