

## 4. DRAFT PREFERRED PROGRAM ALTERNATIVE

The CALFED Preferred Program Alternative consists of a set of broadly described programmatic actions that set the long-term, overall direction of the CALFED Program. Implementation of these actions will fulfill the CALFED mission to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. Implementation will also meet the Program's objectives for ecosystem quality, water quality, levee and channel system integrity, and water supply reliability.

The description of the alternative is programmatic in nature, intended to help agencies and the public make decisions on the broad methods to meet Program purposes. The alternative is not intended to define the site specific actions that will ultimately be implemented. See Section 4.8 for more specific Stage 1 actions.

### 4.1 Overview of the Draft Preferred Program Alternative

The most significant aspect of the draft CALFED Preferred Program Alternative is its comprehensive nature. The Program is more than a collection of diverse actions to carry out four objectives. The preferred alternative begins with strategies for solving each of the four Bay-Delta problem areas in an integrated manner. These strategies are interwoven and each must be viewed in the context of the other strategies. For example, to fully implement the Ecosystem Restoration Program (ERP), CALFED must also have a successful strategy to provide the improved water quality that is needed by the ecosystem. The levee strategy provides new opportunities for improving levee-associated habitat for Delta species. Also, water for environmental uses will benefit from improved water supply reliability.

#### Key Strategies for the Four Problem Areas

**Ecosystem Restoration** CALFED's ecosystem restoration program (ERP) is the largest, most comprehensive, and most inclusive environmental restoration program in the United States. It provides a new perspective to restoration science by focusing on the rehabilitation, protection or restoration of ecological processes that create and maintain habitats needed by fish, wildlife and plant species dependent on the Delta and its tributary systems. This strategy emphasizes solid science, adaptive management and local participation: an innovative approach that is becoming a model for similar efforts throughout the nation. By restoring the natural processes that create and maintain diverse and vital habitats, CALFED aims to meet the needs of multiple plant and animal species while reducing the amount of human intervention required to maintain habitats.

Adaptive management is an essential program concept, part of each of these strategies. It is necessary to constantly monitor the system and adapt actions that are taken to restore ecological health and improve water management.

**Water Quality** CALFED's strategy is to provide good water quality for all beneficial uses, and includes reducing or eliminating elements that degrade water quality at its source. In addition, CALFED is committed to continuously improving source water quality that allows municipal water suppliers to deliver safe and affordable drinking water that reliably meets and, where feasible, exceeds applicable drinking water standards. CALFED program actions will be aimed at reducing the levels of problem pollutants such as bromide, organic carbon and pathogens in Delta drinking water sources. CALFED will consider additional water management options as necessary to achieve its goals and objectives, including, but not limited to, provision of alternative sources, use of storage facilities to improve drinking water quality, and an isolated facility to provide source water of better quality.

**Levees** Delta levees are critical to the physical integrity of the Delta, and the integrity of the state's water system. CALFED will perform risk assessment of all factors that can contribute to levee failure and the consequences of failure to Delta land uses, the ecosystem, water quality and water supply reliability, and implement appropriate risk management considering all available options. Levee improvements will incorporate successful techniques for restoring, enhancing or protecting ecosystem values.

**Water Supply Reliability** The CALFED Program has proposed a water management strategy to ensure water supply reliability that recognizes the variability of water supply and demand in California. CALFED's water supply reliability goals are to reduce water diversion conflicts between users, decrease drought impacts, increase water supply availability, increase operational flexibility, and increase the utility of water used for all beneficial uses by improving water quality.

Seven general categories of tools are included in the management strategy, all of which are being used in California to some degree: water conservation; water recycling; water transfers, both short-term and long-term; storage, both groundwater and surface water; watershed management; water quality control; and monitoring and real-time diversion management.

A creative new component of this strategy could be an environmental water account. Through the environmental water account, environmental managers could control a package of assets including water and money that provides greater flexibility in helping fish species recover. With an environmental water account, decision-makers could react quickly to the real-time actions of fish, which do not always act according to models and scientific analyses. CALFED is continuing to refine the environmental water account concept and its role in the final plan.

**Delta Conveyance** In addition to these four strategies, CALFED must consider how various Delta conveyance configurations -- how water is moved through the Delta -- would help

implement the strategies. The Delta conveyance strategy must consider fisheries and water quality for in-Delta uses and drinking water. The existing Delta channels will be an integral part of any CALFED decision for Delta conveyance. The reliance on these channels provides a shared interest in restoring, maintaining, and protecting Delta resources, including water supplies, water quality, levees, channel capacities, natural habitat and the Common Delta Pool.

CALFED's Delta conveyance strategy is to develop a through-Delta conveyance alternative based on the existing Delta configuration with some modifications, evaluate its effectiveness and add additional conveyance and /or other water management actions if necessary to achieve CALFED goals and objectives.

## **Program Elements**

CALFED developed eight program elements to carry out the strategies described above. The draft preferred program alternative is comprised of these program elements, to be implemented in stages over the next 30 years. Each of the elements contributes to improvements in the four problem areas. The program elements include:

- **Long-Term Levee Protection Plan** - Provides significant improvements in the reliability of the Delta levees to benefit all users of Delta water and land.
- **Water Quality Program** - Makes significant reductions in point and non-point pollution for the benefit of all water uses and the Bay-Delta ecosystem.
- **Ecosystem Restoration Program** - Provides significant improvements in habitat, restoration of critical flows, and reduces conflict with other Bay-Delta system resources.
- **Water Use Efficiency Program** - Provides support and incentives at the local level through expanded planning, technical, and financial assistance for efficient use of water for agricultural, urban, and environmental purposes.
- **Water Transfer Program** - Provides a framework of actions, policies and processes to facilitate, encourage, and streamline an active yet protective water market which will allow water to move between users, including environmental uses, on a voluntary and compensated basis.
- **Watershed Program** - Promotes locally-led watershed management activities and protections relevant to achieving the CALFED purpose through financial and technical assistance.
- **Storage** - New storage will be developed and constructed, together with aggressive implementation of water conservation, recycling, and a protective water transfer market, as appropriate to meet CALFED Program goals. During Stage 1, CALFED will evaluate

and determine the appropriate mix of surface water and groundwater storage, identify acceptable projects, and initiate permitting and construction if program linkages and conditions are satisfied.

- **Delta Conveyance** - CALFED will develop a through-Delta conveyance alternative based on the existing Delta configuration with some modifications, evaluate its effectiveness, and add additional conveyance and/or other water management actions if necessary to achieve CALFED goals and objectives. For example, inability to meet CALFED program goals for drinking water quality or fishery recovery using this strategy could lead to a decision to move forward with modifications to this strategy including an isolated facility to carry a portion of export water around the Delta and/or other water management options.

All of these program elements will employ an adaptive management approach with careful monitoring of performance to help modify (adapt) future actions as more is learned about the system and how it responds. The implementation of the preferred program alternative is supported by: an Implementation Plan that describes Stage 1 actions, governance, and financing; and a Comprehensive Monitoring, Assessment and Research Program.

## 4.2 Staged Implementation and Staged Decision Making

The selection of a programmatic alternative provides the broad resource framework and strategy for implementing a comprehensive program over a period of thirty years or more. The programmatic decision sets in motion the implementation of some actions, as well as additional planning and investigation to refine other actions. Throughout the implementation period, monitoring will provide information about conditions in the Bay-Delta and results of our actions.

The complexity of the Bay-Delta system and the inability to predict future events and how the system will respond to management actions requires that an adaptive management philosophy and process be employed for every program element.

### Staged Implementation

- Identify certain actions at the outset (for all stages).
- Identify possible actions for future stages with associated conditions and linkages 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.
- Stage assurances that include specific agreements among agencies and stakeholders

CALFED has decided to implement the Program through stages. The preferred program alternative is composed of hundreds of individual actions that will be implemented and refined over the 20 to 30 year implementation period. Therefore, it is logical to implement the Program in stages according to major program milestones. 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 everyone has a stake in the successful completion of each stage.

The individual actions proposed by CALFED cover a spectrum from those that are small, simple, and well understood to those that would involve major modifications to the Bay-Delta system and need additional refinement before implementation can occur. Actions carried out during Stage 1 of implementation -- the first seven years after the Record of Decision -- will generally be smaller or more straightforward actions, including restoration actions for which we have strong scientific understanding and justification. These actions can and should be implemented quickly to achieve early Program benefits. Results will be monitored to determine if the expected results occur. If not, subsequent actions can be modified accordingly.

Larger actions that will be very expensive, will involve some degree of uncertainty, or will make significant or irreversible modification to the system will be implemented later during Stage 1, or in subsequent stages of the implementation period. These actions will need to be carefully planned and structured because they will be less easily modified through adaptive management.

Staged implementation for the CALFED preferred program alternative involves identifying certain actions for implementation for which there is general agreement and justification, and also developing conditions for future decisions and for moving beyond Stage 1. For some actions, 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. These linked decisions on several program elements may be required at each stage of implementation. These require assurances that certain linkages, such as performance measures for each program element, are satisfied before making a decision to proceed.

[actions/studies graphic here]

Like implementation, the decision process will be staged to allow better decisions in adaptive management at the appropriate time. The programmatic nature of the EIS/EIR provides the general direction for long-term implementation but not the specific information necessary for every decision required during the 20-30 year implementation period. Not all decisions need to, or can, be made at the outset of implementation. Therefore, stages will be identified where there are logical implementation milestones and decision making points. In this way, adaptive management can be applied equally well to a series of incremental actions such as ecosystem restoration or for major single decision projects such as surface storage or conveyance.

Discussion is continuing on conditions and linkages for a draft preferred program alternative. There are many potential linkages (many are assurance issues) among the various actions in the

draft preferred alternative, which includes common program elements, storage, and conveyance. Future decisions can be made depending on how the conditions and linkages are satisfied.

There is generally broad agreement on proceeding with the program elements for water quality, water use efficiency, ecosystem restoration, levee system integrity, water transfer framework and the watershed program, but only if implementation is linked to reasonable progress in all program elements. However, there is not agreement on the need for surface storage and dual Delta conveyance (with and isolated facility) to achieve the CALFED goals and objectives.

Meeting the CALFED mission statement and goals is dependent on improvement in all problem areas (ecosystem, water quality, levee system integrity, and water supply reliability). Linkages between improvement in the problem areas are key to consistent and continuous progress towards meeting the CALFED purposes. The eight program elements and linkages between the elements are the mechanisms to achieve improvement in the four problem areas.

### **4.3 An Integrated Resource Management Strategy**

The most significant aspect of the CALFED Preferred Program Alternative is its comprehensive nature. The Program is more than a collection of diverse actions to carry out four objectives. It is founded upon strategies for solving each of the four Bay-Delta problem areas in an integrated manner. These strategies are interwoven and each must be viewed in the context of the other strategies. This integration is also reflected in proposed Program actions. Nearly every action proposed will provide benefits in two or more resource areas at the same time, thus increasing program benefits and minimizing costs. In addition, there is synergy among actions that are geographically or functionally related. This comprehensive and integrated Program is like a braided rope: the intact rope is much stronger than the strands from which it is made.

[rope illustration here]

If the Program as a whole is like a rope, then the four strands in the rope are the resource management strategies that CALFED has developed. These four strategies are the ways that CALFED will restore ecosystem health, provide good water quality, maintain the integrity of the levee and channel system, and improve water supply reliability. These strategies, summarized earlier in this chapter, are described in detail in Section 2.1 of this report, under *Bay-Delta Problems and Objectives*.

These four strategies reflect additional program integration. Each strategy will meet program objectives through implementation of many actions over a period of years. To simplify the discussion of the CALFED programmatic alternative, the actions are grouped under eight program elements: a Long-Term Levee Protection Plan, a Water Quality Program, an Ecosystem Restoration Program, a Water Use Efficiency Program, a Water Transfers Program, a Watershed Program, Storage, and Delta conveyance.

To complete the rope analogy, these eight program elements are like fibers used to make up the four rope strands, which in turn are braided into a complete rope. None of the fibers or strands by themselves are very strong; the strength comes from the way all the pieces are braided together.

The relationship of the four CALFED resource management strategies and the eight program elements is shown in the figure below. Each row represents a resource management strategy, and each column represents one of the eight program elements. The size of the dots represents the relative contribution of actions in a program element toward meeting the objectives of each resource management strategy. This graphic shows the way that as many as eight different kinds of actions may be integrated to make improvements in a single resource area.

[dot graphic goes here]

### **Program Elements and Resource Management Strategies**

Among the eight program elements, there are comprehensive program plans for six. These include ecosystem restoration, water quality, levee and channel integrity, water transfers, water use efficiency, and watershed management. These program plans are included as separate appendices to the *Revised Draft Programmatic Environmental Impact Statement and Report* (EIS/EIR). Among the eight program elements, only storage and conveyance are not described in separate program plans.

Three of these program elements -- ecosystem restoration, water quality, and levees -- correspond to broader resource management strategies. Among the strategies only the CALFED strategy for achieving water supply reliability is not articulated in a program plan.

In order to compensate for limited information on storage and other aspects of water management elsewhere in the CALFED documents, a more complete description of these topics is included here.

## **4.4 Water Management Strategy**

## **4.5 Integrated Storage Investigation**

## **4.6 Environmental Water Account**

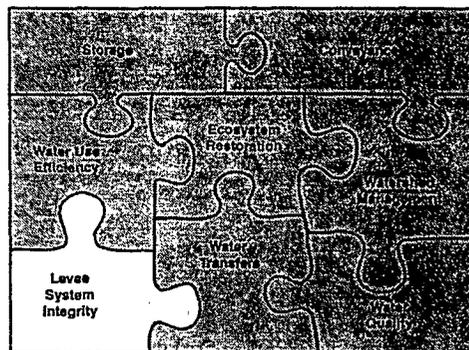
## **4.7 Program Elements**

Meeting the CALFED purpose is dependent on improvement in all four resource areas (ecosystem, water quality, levee system integrity, and water supply reliability). The eight

program elements and linkages between the elements are the mechanisms to achieve improvement in the resource areas.

## Long-Term Levee Protection Plan

The Sacramento-San Joaquin Delta is an area of great regional and national importance, which provides a broad array of benefits including agriculture, water supply, transportation, navigation, recreation and fish and wildlife habitat. Delta levees and islands are the most visible man-made features of this system. Levees are an integral part of the Delta landscape and are key to preserving the Delta's physical characteristics and processes including definition of the Delta waterways and islands.



Given the numerous public benefits protected by Delta levees, the focus of the Long-Term Levee Protection Plan is to improve levee integrity. The levee plan will build on the successes of existing programs in achieving its goals. The state has participated in existing levee programs for the past 25 years. However, the federal government has no such authority for non-project levees in the Delta. The Corps' Sacramento-San Joaquin Delta Special Study may be used to establish a federal authority. There are five main parts to the levee plan:

- **Base-Level Protection Plan** - Base-level funding provides equitably distributed funding to participating local agencies in the Delta. One of the primary goals of the CALFED Program is to reconstruct all Delta levees to a particular standard. CALFED has tentatively selected the U.S. Army Corps of Engineers PL 84-99 standard. Base level funding will provide for reconstruction and maintenance of Delta levees to the PL84-99 standard. Required levee work may include removal of vegetation and debris, maintenance of water control devices, repair or replacement of existing bank protection, addition of material to achieve required cross section, removal of flood deposits, extermination of burrowing rodents and crustaceans (mitten crab), repairing and shaping access roads, repairing slipouts and erosion damage, dredging as required for minor repairs, controlling vegetation on the waterside of the levee, and other actions necessary to maintain levee integrity and appurtenances. This component will seek continuity with and build on the successes of the Delta Levee Subventions Program which is currently administered by DWR.