



# CALFED BAY-DELTA PROGRAM

## Alternatives at a Glance

### What's an "Alternative?"

An alternative is a collection of activities (e.g., habitat restoration, new storage, policy changes, etc.) that together form a plausible environmental and water management solution to problems associated with the Bay-Delta system. During Phase I of the CALFED Bay-Delta Program, three conceptual alternatives were developed, all including program components to comprehensively address ecosystem restoration, water quality improvements, enhanced Delta levee system integrity, and increased water use efficiency. While these programs are common to the three conceptual alternatives, the key variable distinguishing the alternatives from one another is how each would move and store water within the Bay-Delta system. Of the original 17 variations of these alternatives, five were eliminated during initial evaluation, leaving the following 12 to undergo more detailed evaluation. The CALFED solution, or preferred alternative, will comprise the four common programs and (or a mixture of) the storage and conveyance options below. (See Program Overview for common program descriptions.)

### Alternative 1: Existing Conveyance System

Alternative 1 relies upon the common programs to achieve program goals with only minimal changes to the present Delta Configuration. New fish screens, some additional infrastructure, various storage possibilities and potential operational improvements differentiate the three configurations of Alternative 1.

- 1A
  - Essentially overlays implementation of the four common programs on the current system.
  - No new storage or conveyance facilities are proposed.
- 1B
  - Proposes new fish screens at the Banks and Tracy pumping plants of the State and Federal water projects.
  - Proposes an intertie between the Tracy Pumping Plant and Clifton Court Forebay.
- 1C
  - Builds upon 1A and 1B, adding new surface and groundwater storage facilities throughout the watershed.
  - Significant operational changes.
  - Some channel improvements in the Delta to better utilize the new storage and to allow an increase of South Delta exports to the full existing capacity at Banks Pumping Plant.

### Alternative 2: Modified Through Delta Conveyance

This alternative combines the common programs with significant modifications of through Delta channels to improve water conveyance across the Delta. Combinations of four potential conveyance configurations and three new storage configurations differentiate the four variations of this alternative.

- 2A
  - Provides more efficient water movement across the Delta by significantly improving conveyance from the Sacramento River through a new screened intake at Hood to modified Delta channels.
  - Includes improvements adjacent to Snodgrass Slough, the North Fork Mokelumme River, and Old River near Clifton Court Forebay.

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- New fish screens at the Tracy and Banks pumping plants, an intertie between the pumping plants, and an operable barrier or equivalent at the head of Old River on the San Joaquin.
- Provides no additional water storage.

**2B**

- Same as 2A except adds new surface and groundwater storage facilities throughout the watershed.

**2D**

- Provides more efficient water movement across the Delta by significantly improving conveyance from the Sacramento River through a new screened intake at Hood to modified Delta channels.
- Includes improvements adjacent to Snodgrass Slough, the North Fork Mokelumme River, and Old River near Clifton Court Forebay.
- Adds new fish screens at Tracy and Banks pumping plants, an intertie between the pumping plants and an operable barrier or equivalent in the south Delta at the head of the Old River.
- Adds new storage adjacent to the aqueduct south and downstream of the Delta.

**2E**

Similar to 2D, except it replaces the intake at Hood to convey Sacramento River water into the central Delta with a weir structure leading to a wide conveyance system with associated habitat areas at Tyler Island.

### **Alternative 3: Dual Delta Conveyance**

This alternative adds an isolated facility to the through Delta modifications of Alternative 2, which together combine with the common programs to move water through and *around* the Delta. Combinations of potential conveyance configurations and new storage configurations differentiate the variations of this alternative.

**3A**

- North and South Delta channel modifications designed to improve water conveyance and a small (5,000 cfs) open channel isolated facility or a pipeline.
- Includes new fish screens at the Tracy and Banks pumping plants, an intertie between the pumping plants and operable barriers or equivalent in the south Delta.
- No new water storage.

**3B**

- Same as 3A except it provides additional water storage facilities.

**3E**

- Similar to 3B except for the size of the isolated facility.
- Old River will not be enlarged, nor will an operable barrier be constructed at the head of the Old River.

**3H**

- Modified conveyance in the North and South Delta designed for water conveyance and significant habitat restoration.
- Adds a small (5,000 cfs) isolated facility constructed as an open channel and surface and groundwater storage.

**3I**

- Three new diversion locations for Tracy and Banks pumping plants and surface and groundwater storage.
- Similar to 2C with one diversion extended to Hood and new surface groundwater storage.
- New diversions could be used separately or in combination to provide increased operational flexibility.
- One new in-Delta water storage would receive water from one of these new diversions.
- Includes new fish screens at the Tracy and Banks pumping plants and an intertie between the pumping plants.

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## The Common Programs

During Phase I it was determined that all alternatives to solve Bay-Delta system problems needed to include four "common programs" to address fundamental issues. These common programs are:

- **Ecosystem Quality** -- restore the ecosystem to levels needed to support Bay-Delta species at naturally sustainable levels, including the habitats necessary for survival of species that use the ecosystem.
- **Levee System Integrity** -- reduce the risk of levee failure due to floods, earthquakes and general deterioration by developing a long-term maintenance plan and an emergency levee management plan.
- **Water Quality** -- focus on controlling pollution at its source. Reducing the amount of pollutants entering the Delta benefits all water users by reducing salts for agricultural diversions, improving drinking water quality, and increasing water quality for the ecosystem.
- **Water Use Efficiency** -- programs that increase the efficiency with which water is used and increase water reuse, including conservation, recycling and reclamation. Water use efficiency can also be viewed as reaping the greatest benefit from each unit of water.

## Developing a Solution

Finding a solution to the problems facing California's Bay-Delta system, at the heart of California's water management system, is no small task. For the past two decades, competing demands on the Bay-Delta system from the environment, agriculture and growing urban areas have led to concerns about water quality, unreliable water supplies, damage to the ecosystem and weak levees. These problems threaten this tremendous ecological and economic resource.

Phase I of the CALFED Bay-Delta Program resulted in three conceptual alternative solutions to undergo assessment in Phase II of the Program (see insert). These alternatives were developed with input from CALFED agencies, the federally chartered Bay-Delta Advisory Council and interested members of the public.

The CALFED Bay-Delta Program also worked with stakeholders to create a narrowing process to identify a preferred alternative for addressing problems facing the Bay-Delta. Seventeen configurations of the three conceptual alternatives were first evaluated to identify those that best satisfy the Program's solution principles. The solution principles call for a plan that will reduce conflicts in the system, be equitable, affordable, durable, implementable, and have no significant redirected impacts.

Alternative variations are now being ranked according to their ability to meet the Program's objectives. To determine this information, CALFED staff is conducting modeling studies, prefeasibility studies and impact analyses. In September 1997, five configurations were eliminated from further consideration, leaving 12 to undergo further consideration.

## Reaching Consensus

The final step in the narrowing process is to choose a draft preferred alternative. This choice will be based on technical analysis and public input regarding necessary trade-offs. This solution -- or preferred alternative -- will represent the best overall balance in achieving Program objectives and consistency with the solution principles.

## How Is it Funded?

One of the unique aspects of the CALFED Bay-Delta Program is that a strategy for funding the long term solution is being developed as an integral part of the overall program. This concept relates to the solution principle concerning implementability. Neither one sector of society nor one revenue source will shoulder complete responsibility for paying to implement the ultimate solution alternative. Rather, the cost will be shared by many entities, possibly including user fees, federal appropriations, private-public partnerships and general obligation bonds.

The people of California are committed to improving the Delta. This is evidenced by the passage of Proposition 204 in 1996, which provided more than \$450 million for the CALFED Bay-Delta Program's environmental enhancement efforts. Federal authorization for an additional \$430 million over the next three-year period has also been secured. On October 3 President Bill Clinton received an energy and water development appropriations bill containing \$85 million for the Bay-Delta, which currently awaits his signature. This funding for early implementation of the Program's environmental actions reflects the fundamental need to restore the ecosystem as an essential component of a comprehensive solution to Bay-Delta problems.

## Assurances

Assurances will be an important component of any solution developed by the CALFED Bay-Delta Program. Each alternative, a set of actions to address problems facing the Bay-Delta system, developed by CALFED includes a package of assurances. Assurances are policy-level actions and institutional guarantees that each alternative will be implemented tomorrow as designed and agreed to today.

For further information on how you can participate in the restoration of the California Bay-Delta, contact the CALFED Bay-Delta Program, (916) 657-2666.

## CALFED Agencies

### California

The Resources Agency  
Department of Fish and Game  
Department of Water Resources  
California Environmental Protection Agency  
State Water Resources Control Board

### Federal

Environmental Protection Agency  
Department of the Interior  
Fish and Wildlife Service  
Bureau of Reclamation  
U.S. Army Corps of Engineers  
Department of Agriculture  
Natural Resources Conservation Service  
Department of Commerce  
National Marine Fisheries Service

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