CALFED
BAY-DELTA
PROGRAM

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Memorandum

Date: March 25, 1997

To: CALFED Policy and Management Groups and Program Coordination Team

From: Lester A. Snow

Subject: Final Purpose and Need Statement for the CALFED Bay-Delta Program Programmatic EIR/EIS

The final Purpose and Need Statement for the CALFED Bay-Delta Program Programmatic EIR/EIS is attached. It includes the adjustments requested at the CALFED Policy Group meeting on February 19, 1997. The Purpose and Need Statement will be incorporated, as written, into the first chapter of the Programmatic EIR/EIS. We do expect that there will be adjustments made to the "Introduction" section which currently provides some context for the Purpose and Need Statement.

The Purpose and Need Statement was generally approved by the CALFED Management Group on January 31, 1997. However, the Management Group provided the CALFED agencies an additional opportunity to submit comments. The Purpose and Need Statement and the additional agency comments were presented and discussed with the CALFED Policy Group in the February meeting. The following items requiring adjustments to the Purpose and Need Statement were raised during the discussion: the third bullet on page 2 needed to be revised to address a Fish and Wildlife Service comment that interrelated and interdependent effects are not only applicable to ESA; and the third sentence in the Water Quality section on page 7 needed to be revised to address the Environmental Protection Agency comment related to drinking water. The Purpose and Need Statement was unanimously approved by the Policy Group with the understanding that the two adjustments would be made.

If you have any questions, please contact Rick Breitenbach at (916) 657-2666.

Attachment

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Purpose and Need

INTRODUCTION

Background

The San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) estuary is the largest estuary on the west coast of North and South America. A dynamic and complex environment supporting a diverse and productive ecosystem, the Bay-Delta estuary is a significant state, national, and international resource.

Within the Bay-Delta estuary, approximately 40% of the freshwater runoff from California mixes with water from the Pacific Ocean. The bulk of the freshwater supply comes from the watersheds of the Sacramento and San Joaquin Rivers. The estuary contains approximately 70,000 acres of wetlands, including the largest remaining brackish marsh in the United States, and supports 120 species of fish. As the major juncture for salt and freshwater habitats along California's coast, the area is vital to the life cycles of a large proportion of the state's anadromous fish. It is also an important link along the Pacific Flyway for wintering and nesting migratory waterfowl and shorebirds.

In addition to its ecological importance, the Bay-Delta estuary serves as the primary hub of California's water supply system, providing water for both agricultural and urban uses. The estuary provides domestic and industrial water supplies for approximately 21 million people or two-thirds of the state's population and agricultual irrigation water for about 200 different crops in the Delta and San Joaquin Valley.

The Bay-Delta estuary has for decades been the focus of competing interests -- economic, ecologic, urban and agricultural. And it has suffered from this. Habitats are declining, and several native species are threatened with extinction. The system no longer serves as a reliable source of high quality water and the levees face an unacceptably high risk of breaching. Though many efforts have been made to address these problems, the issues are complex and interrelated and many remain unsolved.

Organizational History and Structure of the CALFED Bay-Delta Program

The CALFED Bay-Delta Program (Program) was established in May 1995 and is one element of CALFED, a consortium of five state and five federal agencies with management and regulatory responsibilities in the Bay-Delta estuary.

The participating state agencies include the California Resources Agency, Department of Water Resources, Department of Fish and Game, California Environmental Protection Agency and State Water Resources Control Board. The participating federal agencies include the U.S. Department of Interior, Bureau of Reclamation, Fish and Wildlife Service, Environmental Protection Agency and the National Marine Fisheries Service. The U.S. Army Corps of Engineers also participates as a cooperating agency in the preparation of the Program's Programmatic Environmental Impact Report/Statement (EIR/S).

CALFED was formed as part of the Framework Agreement which was signed in June 1994. As part of this Framework Agreement, the state and federal governments pledged to: (1) coordinate their implementation of water quality standards to protect the Bay-Delta estuary; (2) coordinate the operation of the State Water Project (SWP) and Central Valley Project (CVP) which both involve transporting freshwater through the Delta to points south; and (3) develop a process to establish a long-term Bay-Delta solution that will address four categories of problems: ecosystem quality, water quality, water supply reliability and system integrity.

Impetus to forge this joint effort came at the state level in December 1992 with formation of the Water Policy Council and the Bay Delta Oversight Council, an advisory group to the Water Policy Council. The following year, in September 1993, the Federal Ecosystem Directorate was created at the federal level to coordinate federal resource protection and management decisions for the Bay-Delta.

In December 1994, an agreement -- the Bay-Delta Accord -- was signed by state and federal agencies as well as diverse interest groups. This accord recommended water quality standards, and provided further definition to the state/federal coordination group, established by the Framework Agreement, to better integrate the SWP and CVP.

The Program is charged with responsibility for the third issue identified in the Framework Agreement: develop and implement a process which will lead to a long-term solution. The Program will address four categories of problems: ecosystem quality, water quality, water supply reliability and system integrity.

CALFED Bay-Delta Program Planning Process

The Program is conducting a three-phase cooperative planning effort that will lead to a determination of the most appropriate strategy and actions necessary to improve water quality, restore health to the Bay-Delta's ecosystem, provide water for a variety of beneficial uses, and minimize the vulnerability of the Delta's levees and channels.

- The first phase identifies solution alternatives to be analyzed in Phase II.
- The second phase includes: refinement of the Phase I alternative components; development of strategies for implementing the components; and preparation of a Programmatic EIR/S including identification of a preferred alternative.
- The third phase of the Program includes project specific environmental review of individual components of the recommended alternative. Because implementation of individual project components may cause changes throughout the system, project specific environmental review will include a detailed analysis of the interrelated and interdependent[1] effects. Implementation of these components would follow in a staged fashion over a period of years.

The Program developed, in consultation with CALFED agencies, stakeholders and interested public members, a set of six "solution principles." The solution principles are used to measure the overall acceptability of alternatives and are intended to be used collectively. These

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[1]Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

solution principles are the fundamental standards which were used to guide development of the Phase I alternatives and will continue to guide the refinement of alternatives during Phase II as well as their evaluation in the Programmatic EIR/S. The six solution principles are:

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

Further, the Program uses a two-tiered geographic scope to identify problems and solutions. The first tier identifies the geographic problem scope as the legally defined Delta (generally extending north to the City of Sacramento, east to Interstate 5, south to Tracy and west to Chipps Island), Suisun Bay (extending to the Carquinez Strait), and Suisun Marsh. For the remainder of this chapter, this geographic problem area will be called the "Bay-Delta system."

Because the Bay-Delta system is part of a larger water and biological resource system, solutions to addressing the problems in the system will not be limited to the geographic problem area. The geographic scope for developing possible solutions includes a much broader area that extends both upstream and downstream of the Bay-Delta system. This solution scope includes the Central Valley watershed, the Southern California water system service area, San Pablo Bay, San Francisco Bay and portions of the Pacific Ocean out to the Farallon Islands.

PURPOSE AND NEED

The purpose of the CALFED Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. To practicably achieve this program purpose, CALFED will concurrently address problems of the Bay-Delta system within four critical resource categories: ecosystem quality, water quality, water supply reliability, and system integrity. Important physical, ecological, and socioeconomic linkages exist between the problems and possible solutions in each of these categories. Accordingly, a solution to problems in one resource category cannot be pursued without addressing problems in the other resource categories.

In achieving the purpose, the program will address the following goals:[2]

Ecosystem Quality

The goal for ecosystem quality is to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta system to support sustainable populations of diverse and valuable plant and animal species. This can be accomplished by addressing the objectives which collectively improve and increase aquatic and wetland habitats so that they can support the sustainable production and survival of estuarine and anadromous fish and wildlife species and increase population health and population size to levels that assure sustained survival. The objectives in summary form are:

1. Increase the amount of shallow riverine, shaded riverine, tidal slough and estuary entrapment/null zone habitats for aquatic species;
2. Improve the in-Delta, upstream and downstream movement of larval, juvenile and adult life stages of aquatic species;
3. Reduce water quality degradation;
4. Increase the amount of brackish tidal marsh, freshwater marsh, riparian woodland, breeding waterfowl, wintering wildlife, managed permanent pasture and flood plains and associated riparian habitats for wildlife species; and
5. Contribute to the recovery of threatened or endangered species and species of special concern.

Water Supply Reliability

The goal for water supply reliability is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. This can be

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[2] Phase I of the CALFED Program included a six step process leading to the development of a short list of alternatives. In Step 1, problems were identified and in Step 2 objectives were defined. These problems and objectives were presented in a CALFED document entitled "Problem/Objective Definition" dated March 1996. The goals listed in this Purpose and Need statement are the objectives presented in the March 1996 document. The objectives in this Purpose and Need Statement are the subobjectives presented in the March 1996 report; the objectives are listed in summary form.

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accomplished by addressing the objectives, which collectively reduce the conflict among beneficial water users, improve the ability to transport water through the Bay-Delta system and reduce the uncertainty of supplies from the Bay-Delta system. These objectives in summary form are:

1. Maintain an adequate water supply to meet expected in-Delta beneficial use needs;
2. Improve export water supplies to help meet beneficial use needs;
3. Improve the adequacy of Bay-Delta water to meet Delta outflow needs;
4. Reduce the vulnerability of Bay-Delta levees; and
5. Improve the predictability of the water supply available from the Bay-Delta system for beneficial use needs.

Water Quality

The goal for water quality is to provide good water quality for all beneficial uses, including drinking water, agricultural uses (both in-Delta and exported), industrial uses, recreational in-Delta uses, and Delta aquatic habitats. This can be accomplished by addressing the objectives which collectively provide for the improvement of water quality for all beneficial uses. The objectives in summary form are:

1. Improve the reliability and quality of raw water for drinking water needs;
2. Reduce constituents in agricultural water which affect operations and crop productivity;
3. Improve the reliability and quality of water for industrial needs;
4. Improve the quality of raw water for recreational uses including consumption of aquatic resources; and
5. Improve the quality of water for environmental needs.

System Integrity

The goal for system integrity is to reduce the risk to land uses and associated economic activities, water supply, infrastructure, and the Bay-Delta ecosystem from catastrophic breaching of Delta levees. This can be accomplished by addressing the objectives which collectively provide for management of the risk resulting from gradual deterioration of Delta conveyance and catastrophic breaching of the Delta levees. The objectives in summary form are:

1. Reduce the risk to land use from seepage and overtopping of the levees, subsidence of peat soils and catastrophic inundation of Delta islands.
2. Reduce the risk to in-Delta and export water supply from sudden catastrophic island inundation and the resultant salinity intrusion;
3. Reduce the risk to in-Delta and export water supply facilities from sudden catastrophic island inundation; and
4. Reduce the risk to the existing Delta ecosystem from seepage, erosion, and overtopping of levees, peat soils and catastrophic inundation and the resultant salinity intrusion.

The **Purpose statement** responds to the following **Needs.**

Ecosystem Quality

The health of the Bay-Delta system has declined as a result of a number of factors including degradation and the loss of habitats that support various life stages of aquatic and terrestrial biota. Further, the decline in health has resulted from activities within, upstream and downstream of the Bay-Delta system. One early human-induced event was hydraulic mining in the river drainages along the eastern edge of the Central Valley. The mining degraded habitat in Central Valley streams as channel beds and shallow areas filled with sediment. In addition, the reduced capacity of the sediment-filled channels increased the frequency and extent of periodic flooding accelerating the need for flood control measures to protect adjacent agricultural, industrial and urban lands. Levee constructed to protect these lands eliminated fish access to shallow overflow areas, and dredging to construct levees eliminated the tule bed habitat along the river channels.

Since the 1850s, 700,000 acres of overflow and seasonally inundated lands in the Bay-Delta system have been converted to agriculture, industrial and urban uses. Many of the remaining stream sections have been dredged or channelized to improve navigation and to increase stream conveyance capacity to accommodate flood flows and facilitate water export.

Upstream water development and use, depletion of natural flows by local diverters, and the export of water from the Bay-Delta system, have changed seasonal patterns of the inflow, reduced outflow, and diminished the natural variability of flows into and through the Bay-Delta system. Facilities constructed to support water diversions (upstream, in-Delta and export) cause straying or direct losses of fish (e.g., through unscreened diversions) and can increase exposure of juvenile fish to predation. Entrainment and removal of substantial quantities of food-web organisms, eggs, larvae, and young fish further exacerbate the impacts of overall habitat decline.

Habitat alteration and water diversions are not the only factors that have affected ecosystem health. Water quality degradation caused by pollutants and increased concentrations of substances may also have contributed to the overall decline in the health and productivity of the Bay-Delta system. In addition, undesirable introduced species may compete for available space and food supplies, sometimes to the detriment of native species or economically important introduced species.

Water Supply Reliability

The Bay-Delta system provides the water supply for a wide range of instream, riparian and other beneficial uses such as drinking water for millions of Californians and irrigation water for agricultural land. While some beneficial water uses depend on the Bay-Delta system for a portion of their water needs, others are, or have become, highly or totally dependent on Bay-Delta water supplies. As water use and competition among uses has increased during the past several decades, conflicts have increased among users of Bay-Delta water. Heightened competition for the water during certain seasons or during water-short years has magnified the conflicts.

Water flow and timing requirements have been established for certain fish and wildlife species with critical life stages dependent on freshwater flows. These requirements have reduced

water supplies and flexibility to meet the quantity and timing of water delivered from the Bay-Delta system. Water suppliers and users are concerned that additional restrictions, if needed, to protect species, would increase the uncertainty and further reduce the availability of Bay-Delta system water for agricultural, industrial and urban purposes.

Delta levees and channels may fail. Water users are concerned that such failures could result in an interruption of water supply for both urban and agricultural purposes and degradation of water quality and aquatic habitats.

Water Quality

Good quality water is required to sustain the high-quality habitat needed in the Bay-Delta system to support a diversity of fish and wildlife populations. In addition, the Bay-Delta system is a source of drinking water for millions of Californians and is critical to the state's agricultural sector. The potential for increasingly stringent drinking water requirements to require new treatment technologies is spurring water providers to seek higher quality source waters and to address pollution in source waters. Pollutants enter the Bay-Delta system through a variety of sources including sewage treatment plants, industrial facilities, forests, farm fields, mines, residential landscaping, urban streets, ships, and natural sources. The pollutants, pathogens, natural organics, and salts in the Bay-Delta system affect, in varying degrees, existing fish and wildlife, as well as human and agricultural use of these waters. The salts entering the Bay-Delta system from the ocean and from return flows upstream and within the Delta decrease the utility of Bay-Delta system waters for many purposes including the ecosystem, agriculture, and drinking water. The level of natural organics in the water (resulting primarily from the natural process of plant decay on many of the Delta peat soil islands) is of concern because of the way natural organics react with disinfection chemicals commonly used to meet public health requirements in water treatment.

System Integrity

Levees were first constructed in the Sacramento-San Joaquin Delta during the late 1800s when settlers began to turn tidal marshes into agricultural land. Over time, both natural settling of levees and subsidence of Delta island soils resulted in a need to increase levee heights to maintain protection. There is a concern that this increased height, coupled with continued subsidence, poor levee construction and inadequate maintenance, makes Delta levees vulnerable to failure, especially during earthquakes or floods. Failure of Delta levees can result in flooding of delta farmland and wildlife habitat. If a flooded island is not repaired and drained, the resulting large body of open water can expose adjacent islands to increased wave action and possible levee erosion. Levee failure on specific islands can have impacts on water supply distribution systems such as the Mokelumne Aqueduct. Similarly, levee failure on key Delta islands can draw salty water up into the Delta, as water from downstream rushes to fill the breached island. This would be of particular concern in low-water years when less fresh water would be available to repel the incoming salt water. Such a failure could interrupt the water supply for urban, agricultural and environmental uses and degrade water quality and aquatic habitats.