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CALFED Bay-Delta Program

LETTER OF AGREEMENT FOR CONSISTENCY DETERMINATION NO. CN 10-00

August 28, 2000

CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, California 95814

ATTENTION: Steven R. Ritchie,
Acting Executive Director

Ladies and Gentlemen:

On August 17, 2000, the San Francisco Bay Conservation and Development Commission, by a vote of 15 affirmative, 3 negative, and 1 abstention, adopted the resolution pursuant to which this consistency determination was issued.

I. Agreement

A. The San Francisco Bay Conservation and Development Commission (Commission) agrees with the determination of the CALFED agencies through the CALFED Bay-Delta Program, which is a cooperative, interagency effort of 18 State and Federal agencies with management or regulatory responsibilities for the San Francisco Bay-Delta Estuary including the Resources Agency, the Department of Fish and Game, the Department of Water Resources, the California Environmental Protection Agency, the State Water Resources Control Board, the federal Environmental Protection Agency, the Department of the Interior, the U.S. Fish and Wildlife Service, the Bureau of Reclamation, the U.S. Geological Survey, the Bureau of Land Management, the U.S. Army Corps of Engineers, the Department of Agriculture, the Natural Resources Conservation Service, the U.S. Forest Service, the Department of Commerce, the National Marine Fisheries Service and the Western Area Power Administration, that the following project is generally consistent with the Commission's amended coastal zone management program for San Francisco Bay:

Location: The proposed project includes actions that may affect San Francisco Bay, San Pablo Bay, and Suisun Bay and Marsh.

Project: The proposed project is the development of a long-term, comprehensive plan to restore the ecological health of and improve water management for beneficial uses of the Bay-Delta system.

B. This agreement is given on the basis of information submitted by the CALFED agencies, in the consistency determination dated July 13, 2000, and in any additional submittals and subsequent correspondence.

II. Findings and Declarations

A. **Project Description.** The proposed project is the development of a long-term, comprehensive plan to restore the ecological health and improve water management for beneficial uses of the Bay-Delta system. CALFED identified four categories of problems: ecosystem quality; water quality; water supply reliability; and levee system vulnerability. CALFED also adopted solution principles that required that the solution reduce conflicts in the system, be equitable, affordable, durable, implementable, and have no significant redirected impacts.

CALFED is conducting its work in three phases:

Phase I. In Phase I, completed in September 1996, CALFED identified the problems confronting the Bay-Delta, developed a mission statement and guiding principles, and devised three preliminary categories of solutions for Delta water conveyance.

Phase II. In Phase II, CALFED completed the Final Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and the ROD. A programmatic EIS/EIR, also referred to as a first-tier document, is typically prepared for a series of actions that can be characterized as one large project and is required for actions proposed by or approved by state and federal agencies. In Phase II, CALFED developed a preferred program alternative, conducted comprehensive programmatic environmental review, and developed an implementation plan focusing on the first seven years (Stage 1) following the Record of Decision (ROD) on the EIS/EIR.

Phase III. In Phase III, following the Final Programmatic EIS/EIR and the ROD, implementation will begin. This period will include site-specific environmental review and permitting, as necessary. Because of the size and complexity of any of the alternatives, implementation is likely to take place over a period of decades. Part of the challenge for Phase III is designing an implementation strategy that acknowledges this long implementation period and keeps all participants committed to the successful completion of all phases of implementation.

CALFED evaluated three alternative solutions, which were presented in the Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR). Each alternative included common elements related to ecosystem restoration, water quality, water use efficiency, watershed, water transfers, and levee system integrity. Programmatic actions related to water storage and Delta conveyance varied between the alternatives. From this analysis, CALFED selected a Preferred Program Alternative which includes programmatic actions that would most likely involve depositing fill; extracting materials; or changing the use of water, land, or structures in or around San Francisco or Suisun Bays and therefore would require subsequent compliance with the Federal Coastal Zone Management Act. The CALFED Bay-Delta Program has provided a consistency determination that is based on a general evaluation of the proposed CALFED action at the programmatic level. CALFED implementing agencies will return to the Commission for individual permits/consistency determinations at the time site-specific projects are proposed.

CALFED's Preferred Program Alternative includes program elements for ecosystem restoration, water quality, water use efficiency, water transfers, levee system integrity, watersheds, storage and conveyance.

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Ecosystem Restoration Program. CALFED's proposed Ecosystem Restoration Program (ERP) focuses at a programmatic level primarily on the Bay-Delta, the Sacramento River, the San Joaquin River, and their tributary watersheds directly connected to the Bay-Delta system below major dams and reservoirs. Secondarily, the ERP solution scope addresses San Francisco Bay, San Pablo Bay, Suisun Bay and the upper watersheds above the major dams.

The ERP focuses on restoring ecological processes associated with stream flow, stream channels, watersheds, and floodplains. The ERP implementation strategy relies heavily on adaptive management, a technique that involves identifying indicators of ecosystem health, comprehensively monitoring these indicators, improving understanding of the system through focused research, and implementing actions in phases to incorporate new knowledge. The ERP includes the following broad ranges of programmatic restoration actions:

- Protecting, restoring, and managing diverse habitat types representative of the Bay-Delta and its watershed.
- Acquiring water from sources throughout the Bay-Delta's watershed to provide flows and habitat conditions for fishery protection and recovery.
- Restoring critical in-stream and channel-forming flows in Bay-Delta tributaries.
- Improving Delta outflow during key periods.
- Maintaining brackish tidal wetlands in Suisun Marsh.
- Reconnecting Bay-Delta tributaries with their floodplains through constructing setback levees, acquiring flood easements, and constructing and expanding flood bypasses.
- Developing assessment, prevention, and control programs for invasive species.
- Restoring aspects of the sediment regime by relocating in-stream and floodplain gravel mining, and by artificially introducing gravels to compensate for sediment trapped by dams.
- Modifying or eliminating fish passage barriers, including removing dams, constructing fish ladders, and constructing fish screens that use the best available technology.

In addition to this range of actions, the Environmental Water Account (EWA), part of CALFED's Water Management Strategy, is designed to improve fisheries protection and recovery while providing improvements in water quality and water supply reliability. The EWA will rely on more flexible management of water based on real-time needs of the fishery resources. The EWA functions primarily by changing the timing of some flow releases from storage and the timing of water exports from the south Delta pumping plants to coincide with periods of greater or lesser vulnerability of various fish to Delta conditions. The EWA can also increase Delta outflow in the late winter and spring months when fisheries stand to benefit the most. The EWA will be established to provide water for protection and recovery of fish beyond water available through existing regulatory actions related to project operations.

Water Quality Program. The Program is committed to achieving continuous improvement in the quality of the waters of the Bay-Delta system–with the goals of minimizing ecological, drinking water, and other water quality problems and of maintaining this quality once achieved. Reductions in mercury and copper levels may be of particular benefit to the Bay. Improvements in water quality would result in improved ecosystem health, with indirect improvements in water supply reliability. Improvements in water quality also will increase the utility of water, making it suitable for more uses. The Water Quality Program includes the following actions:

- **Drinking water parameters.** Reducing the loads and impacts of bromide, total organic carbon (TOC), pathogens, nutrients, salinity, and turbidity through a combination of measures - including source reduction, alternative sources of water, treatment, storage, and, if necessary, conveyance improvements such as a screened diversion facility (up to 4,000 cfs) on the Sacramento River.
- **Pesticides.** Reducing the impacts of pesticides through (1) development and implementation of best management practices (BMP's) for both urban and agricultural uses; and (2) support of pesticide studies for regulatory agencies, while providing education about and assistance with implementation of control strategies for the regulated pesticide users.
- **Organochlorine pesticides.** Reducing the load of organochlorine pesticides in the system by reducing runoff and erosion from agricultural lands through BMP's.
- **Trace metals.** Reducing the impacts of trace metals, such as copper, cadmium, and zinc, in upper watershed areas near abandoned mine sites. Reducing the impacts of copper through urban stormwater programs and agricultural BMP's.
- **Mercury.** Reducing mercury levels in rivers and the estuary by source control at inactive and abandoned mine sites.
- **Selenium.** Reducing selenium impacts through reduction of loads at their sources, and appropriate land fallowing and land retirement programs.
- **Salinity.** Reducing salt sources in urban and industrial wastewater to protect drinking and agricultural water supplies; facilitating development of successful water recycling, source water blending, and groundwater storage programs. Salinity in the Delta will be controlled by limiting salt loadings from its tributaries through managing sea-water intrusion by such means as: (1) using storage capability to maintain Delta outflow and to adjust the timing of outflow; (2) managing exports; and (3) making modifications to the Delta and Bay.
- **Turbidity and sedimentation.** Reducing the turbidity and sedimentation that adversely affect several areas in the Bay-Delta and its tributaries.
- **Low dissolved oxygen.** Reducing the impairment of rivers and the estuary from substances that exert excessive demand on dissolved oxygen.
- **Toxicity of unknown origin.** Through research and monitoring, identifying parameters of concern in the water and sediment and implementing actions to reduce their impacts on aquatic resources.

The Program does not include construction of the San Luis Drain. However, the Water Quality Program includes funding for support of voluntary land retirement to address drainage problems in the San Joaquin Valley. This retirement has a target of approximately 35,000 acres in Stage 1.

Water Use Efficiency Program. The CALFED Water Use Efficiency Program reflects California's public policy that places strong emphasis on the efficient use of developed water supplies. The Water Use Efficiency Program includes policies covering five main areas: efficient use of agricultural water; urban water conservation; efficient use of environmental diversions (identification of BMPs for refuge water management and development of a planning process for managing water use at refuge and wetland areas); and water recycling. This will rely on local entities to implement water use efficiency actions to achieve objectives related to water quantity, quality, flow and timing. CALFED will develop an incentive grant program to invest in local projects that are not locally cost-effective. For most of these projects, some local benefits will accrue. When this is the case, CALFED will insist on a local cost share commensurate with the local benefits.

Water Transfer Program. The Water Transfer Program will encourage the development of a more effective water market that facilitates water transfers and streamlines the approval process while protecting water rights, environmental conditions, and local economic interests. A more effective transfer market can improve water availability for all users, including the environment. Transfers can also help to match water demand with water sources of the appropriate quality, thus increasing the utility of water supplies.

Levee System Integrity Program. Improvements to Delta levees and channels are included in the Levee System Integrity Program to reduce the risk of failure caused by floods, earthquakes, and general deterioration of Delta flood control facilities. This program provides for uniform funding and guidance to increase the level of protection throughout the Delta and focuses on five approaches to improve the integrity of the Delta levee system:

- **Delta Levee Base Level Protection Plan.** Improving and maintaining Delta levee system stability to meet the Corps' Public Law (PL) 84-99 standard.
- **Delta Levee Special Improvement Projects.** Enhancing flood protection for key islands that provide state-wide benefits to the ecosystem, water supply, water quality, economy, and infrastructure.
- **Delta Levee Subsidence Control Plan.** Implementing current best management practices (BMPs) to correct subsidence adjacent to levees and coordinating research to quantify the effects and extent of inner-island subsidence.
- **Delta Levee Emergency Management and Response Plan.** Implementing actions that will build on existing state, federal, and local agency emergency management programs.
- **Delta Levee Risk Assessment.** Performing a risk assessment to quantify the major risks to Delta resources from floods, seepage, subsidence, and earthquakes; evaluating the consequences; and developing recommendations to manage the risk.

CALFED has also added the Suisun Marsh to its Levee Program to achieve its primary objectives in Ecosystem Restoration and Water Quality. Ensuring the integrity of the exterior levees in the Suisun Marsh is critical to sustaining seasonal wetland values provided by

the Marsh's managed wetlands. Improved levees will ensure that conversion to tidal wetlands will not be due to levee failure, but instead, will be planned with consideration of landowner support, ERP targets, regional wetland goals, and endangered species recovery plans.

CALFED's modeling research clearly indicates there is significant risk of water quality impacts in the Delta if Suisun Marsh levees are not maintained.

Watershed Program. CALFED's Watershed Program is designed to restore ecological health and improve water management of the Bay-Delta system by working with local communities at a watershed level. The Program will use a comprehensive, integrated, basin-wide approach to help improve conditions in the Bay-Delta system, emphasizing local participation and government cooperation at all levels. The Watershed Program will focus on land and water management actions that would benefit water quality and improve water reliability in the Bay-Delta system. The Program will provide financial and technical assistance to local watershed groups to help assess, plan and conduct watershed management activities, including restoration projects, basin and project-scale monitoring and conservation education.

Storage. Groundwater and surface water storage can be used to improve water supply reliability, provide water for the environment at times when it is needed most, provide flows timed to maintain water quality, and protect levees through coordinated operation with existing flood control reservoirs.

CALFED initially evaluated twelve potential surface storage sites in Phase II. These potential sites have been narrowed to sites that will be evaluated in Phase III and, if found feasible, construction could begin. Potential storage projects include:

- Construction of an in-Delta storage facility of approximately 250 thousand acre-feet (TAF.)
- Expansion of Central Valley Project (CVP)) storage in Shasta Lake by approximately 300 TAF.
- Expansion of Los Vaqueros Reservoir by up to 400 TAF, with local partners as part of a Bay Area water quality and water supply initiative.
- Development of locally-managed and controlled groundwater and conjunctive use projects with a total of 500 TAF to 1 million acre-feet (MAF) additional storage capacity.

An additional two storage sites will be evaluated in Stage I, with feasibility studies undertaken and, if found feasible, environmental review completed:

- Sites Reservoir in Colusa County, with a potential storage of 1.9 MAF.
- Additional storage of 250-700 TAF in the upper San Joaquin watershed.

Aggressive implementation of water conservation, recycling, and a protective water transfer market will continue to be used as appropriate to meet Program goals. All projects will be required to complete environmental review and will be subject to all applicable permit requirements.

Conveyance. Four alternative variations for conveyance were analyzed in the Programmatic EIR/EIS. These four variations, which combine various strategies and facilities for diverting and conveying water from the Delta, are described in Chapter 2 of the EIS/EIR. This section focuses on a description of the water conveyance components of the Preferred Program Alternative, which forms the basis for the consistency determination.

While CALFED evaluated different conveyance alternatives (including an isolated facility), the Preferred Program Alternative does not include an isolated facility. The Preferred Program Alternative employs a through-Delta approach to conveyance. Modifications in conveyance will result in improved water supply reliability, protection of and improvement in Delta water quality, improvements in ecosystem health, and reduced risk of supply disruption due to catastrophic breaching of Delta levees.

South Delta Improvements. Under the Preferred Program Alternative, south Delta improvements include:

- Constructing a new screened intake at Clifton Court Forebay (CCFB) with protective screening criteria.
- Constructing either a new screened diversion at Tracy with protective screening criteria and/or expanding the new diversion at CCFB to meet the Tracy Pumping Plant export capacity.
- Implementing the Joint Point of Diversion (JPOD) for the State Water Project (SWP) and CVP, and constructing interties.
- Constructing an operable barrier at the head of Old River to improve conditions for salmon migrating up and down the San Joaquin River.
- Implementing actions to ensure the availability of water of adequate quantity and quality to agricultural diverters within the south Delta, and to contribute to restoring ecological health of aquatic resources in the lower San Joaquin River and south Delta. Actions may include channel dredging, extending and screening agricultural intakes, consolidating agricultural intakes, constructing operable barriers, and levee setbacks and levee improvements (such as reinforcing levees or controlling seepage). Actions will be staged, with appropriate monitoring and testing to guide the implementation process.
- Changing the SWP operating rules to allow export pumping up to the current physical capacity of the SWP export facilities.

North Delta Improvements. Under the Preferred Program Alternative, north Delta improvements include:

- Studying and evaluating a screened diversion facility on the Sacramento River with a range of diversion capacities up to 4,000 cfs as a measure to improve drinking water quality in the event that the Water Quality Program measures do not result in continuous improvements toward CALFED drinking water goals.

The diversion facility on the Sacramento River likely will include a fish screen, pumps, and a channel between the Sacramento and Mokelumne Rivers. The diversion facility on the Sacramento River is to be considered only after three separate assessments are satisfactorily completed: first, a thorough assessment of Delta Cross Channel (DCC) operation strategies

and confirmation of continued concern over water quality impacts from DCC operations; second, a thorough evaluation of the technical viability of a diversion facility; and third, satisfactory resolution of the fisheries concerns about a diversion facility. The assessments of the DCC and the diversion facility on the Sacramento River will be completed simultaneously. The result of all three of these evaluations will be shared with the Delta Drinking Water Council or its successor and the expert panel evaluating fish impacts of Delta conveyance. If these evaluations demonstrate that a diversion facility on the Sacramento river is necessary to address drinking water quality concerns and can be constructed without adversely affecting fish populations, the facility will be constructed as a part of the Preferred Program Alternative.

- Constructing new setback levees or dredging and/or improving existing levees along the channels of the lower Mokelumne River system from Interstate 5 downstream to the San Joaquin River.

As described in the EIS/EIR and Program Plans, the CALFED Program could be of tremendous benefit to the Bay and its ecosystem. Under CALFED, tens of thousands of acres of land will be improved for habitat or restored to their natural marsh conditions. CALFED actions are aimed at improving conditions for many Bay species, especially anadromous fish and endangered species. High-quality fresh water will be available during times of the year when dealing with saltwater intrusion is most problematic. Overall, the plan will provide for a more natural freshwater outflow pattern to the Bay in dry and normal rainfall years, restoring tidal and nontidal wetlands, restoring tidal perennial aquatic habitat, and screening unscreened and poorly screened diversions. Overall flows to the Bay will be of better quality, with fewer pollutants and contaminants. If feasible, improved levees in the Suisun Marsh will protect marsh habitats from the dangers of catastrophic levee failure, and resulting saltwater intrusion. Brackish marsh habitat will be protected and increased. By purchasing water for ecosystem needs, the Environmental Water Account will provide water for fish species when they need it most, without disrupting water needs of other users.

Against the many benefits to the Bay, the EIS/EIR acknowledges that there is a potential for adverse consequences. When outflows are at their highest, a small portion may be retained as storage. Currently, CALFED's many experts and consultants are unable to document any adverse environmental impacts that would result from this detention, but part of the CALFED Program is to study the possible impacts of this action. Also, as discussed later, X2, the accepted standard for the entrapment zone, may move less than a kilometer to the east. Again, no adverse impact has been identified for this potential move, but CALFED has committed to study the issue. Mitigation through releases from storage, as well as reduced export pumping, will be considered in the future, if significant impacts are identified. More detailed summary of the benefits and potential impacts to the Bay can be found in CALFED's July *2000 Coastal Zone Management Act Programmatic Consistency Determination for the CALFED Bay-Delta Program.*

B. **Issues regarding the program's consistency with the policies of *the San Francisco Bay Plan* and *Suisun Marsh Protection Plan*.** The Commission addressed a variety of issues in its review of the CALFED agencies' consistency determination, but it focused on water quality, Bay inflows, and ecosystem protection. Following is a brief description of each issue.

1. **Entrapment Zone.** The potential impacts of greatest concern in the Commission's jurisdiction will result from decreases in Delta outflow to the Bay that could affect the distribution of salinity within the Bay and move the location of the "entrapment zone". The entrapment zone is an area of high biological productivity that is found where the freshwater flowing through the Delta from upstream rivers meets the salt water of the Bay. The location of the entrapment zone is most beneficial when it is located in large, shallow embayments, such as the Suisun Bay, and is the least beneficial when it is confined within narrower and deeper channels, such as are found within the Delta.

   The location of the entrapment zone varies according to the tidal effects, which move its location about 10 to 20 kilometers, and also due to the magnitude of Delta outflow, which, in low flow conditions, depends mainly on the magnitude of releases from upstream storage facilities and water diversions. The SWRCB's 1995 Water Quality Control Plan requires Delta outflows to be maintained at levels intended to keep the entrapment zone from moving from within Suisun Bay up into the Delta (the location of the entrapment zone is referred to in the standards and the EIS/EIR as "X2"). However, the standards vary based on the water-year and in dry water-years the standards would allow the entrapment zone to shift towards the Delta.

   Modeling results for new storage show that differences between the Program with storage included and the No Project Alternative are within the current range of uncertainty associated with the No Project Alternative. Storage within the Preferred Program Alternative will reduce average annual Delta outflows by 340-700 TAF (2.3% to 4.7%), out of a total average outflow of 14.8 MAF. The Preferred Program Alternative will increase the average monthly X2 position to the east by about 0.6 km in September, and may increase or decrease the average monthly X2 position by about 0.3 km in March. Sufficient information does not currently exist to determine if statistically small percentage reductions in Delta outflows would have any discernible environmental effects in the Bay. However, based on professional judgement of CALFED staff and consultants, the environmental effects will not be discernible considering the amount of variability in X2 location from year to year, season to season, and within each tidal cycle. CALFED agencies have agreed with this finding.

   Mitigation through releases from storage, as well as reduced export pumping, will be considered in future, site specific, environmental documentation if significant ecological or water quality impacts are predicted as a result of induced shifts in the location of X2. Furthermore, the operation of the EWA was not accounted for in the modelling referenced above that identified the potential changes in X2, and the EWA could be operated so that, in some years, Delta outflows will be increased during times of the year when X2 location is most important for the environment. The ability to make releases at the appropriate times will be enhanced if additional new storage is built. The Integrated Storage Investigation will consider this usage of any new storage and weigh the benefits and costs compared to those of meeting other competing demands.

   In addition to evaluation of changes in outflows during future site specific environmental documentation, the CALFED Program is organized around the concept of adaptive management. This is necessary because there is incomplete knowledge of how the ecosystem functions and the effects of individual project actions on populations and processes. The CALFED Science Program is an essential part of the CALFED Program that will monitor key system functions and complete focused research to obtain a better

understanding of the system. The Comprehension Monitoring, Assessment and Research Program (CMARP) element of the Science Program will monitor outflow, X2, and Bay water quality. Future actions will be taken based on the best available information and results will be monitored and research performed in order to refine future actions or operations. The Science Program will be conducted in an open and collaborative manner to allow and encourage involvement of stakeholder and academic science communities. The Science Program can serve as a science clearinghouse for the CALFED agencies and as a means of resolving scientific disputes. Needed changes will be taken to the policy makers to act on new evidence.

The impacts are shown at a programmatic level of detail in the Programmatic EIS/EIR. However, CALFED staff did not select net Delta outflows as a hydrologic evaluation criterion since it believes that the net outflows are overwhelmed by tidal flows in the western Delta. Instead, CALFED staff selected X2 (the position of the 2,000-ppm salinity isohaline) as the net outflow-determined parameter of primary importance because of its direct bearing on estuarine hydrodynamics and ecological functions, and the fact that the SWRCB selected it as the primary basis for a Delta outflow index in its Bay-Delta standards-setting process. Checks were performed on the modeling results for all alternatives to ensure that minimum flow standards were met where and when they exist. These minimum outflows are specified in the SWRCB's Bay-Delta Water Quality Control Plan and water rights decision. Impacts on X2 are discussed and compared for each of the alternatives in the impact section of the Programmatic EIS/EIR.

Therefore, the Commission believes that the proposed program generally resolves its concerns regarding the placement of the entrapment zone in the Bay-Delta system. Thus, the Commission finds that this portion of the Program is consistent to the maximum extent practicable with the Bay Plan policies on Fresh Water Inflow, Water Quality, and Fish and Wildlife, and the Marsh Plan policies on Environment and Water Quality and Supply. However, the Commission should continue to review and provide input to CALFED as specific projects move towards implementation.

2. **Salinity.** A second potential impact to the Bay would result from changes to the average salinity patterns in the Bay. Presently, most of the tidal marshes in Suisun Bay are brackish. However, decreased Delta outflows could allow salty Bay waters to push farther upstream, resulting in the transformation of brackish wetlands into salt marsh. Although salt marshes provide valuable habitat, brackish tidal wetlands are also a scarce habitat type in the Bay. Migrating waterfowl along the Pacific Flyway use these brackish wetlands, and their value to waterfowl likely would be reduced if they became salt marshes.

   Salinity changes that are attributable to the Preferred Program Alternative were estimated in the West Delta and Suisun Bay, as well as for other alternatives considered. Both beneficial and adverse changes in salinity that are attributable to the Preferred Program Alternative were estimated to be less than 2%. Based on the professional judgement of CALFED staff and consultants, the effects would not be discernible and therefore considered less than significant by CALFED considering the amount of variability in outflow from year to year, season to season, and within each tidal cycle.

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The salinity control gates in Suisun Marsh will contribute to controlling salinity within the marsh and bays. Other water quality changes are anticipated to be beneficial. Since installation of the salinity control gates in the Suisun Marsh in 1989, salinity has dropped. The degree to which any action will affect the environment will be determined in site-specific environmental reviews in compliance with applicable environmental regulations. Changes in habitat resulting from small salinity changes likely will likely be minimal according to the EIS/EIR.

CALFED maintains that, as noted in Section 6.2.2, salinity standards set by the SWRCB will be met. These standards require Delta outflows to be maintained at levels intended to keep the entrapment zone from moving into the Delta from within Suisun Bay. During average to above-average water years, Suisun Bay brackish marshes therefore should not experience appreciable changes in salinity. These standards vary based on the water year; in dry water years, these standards may allow some shifting of the entrapment zone toward the Delta. However, CALFED believes that it is not possible to predict the frequency or duration of these shifts. It is also difficult to accurately predict the response of brackish tidal wetlands to varying periods of increased salinity. CALFED believes that it is likely, however, that species composition of brackish marsh will not change appreciably because this vegetation is already adapted to a relatively wide range of salinity. Given this uncertainty and lack of current available data, this issue has been identified as an area of controversy that cannot be resolved at a programmatic level.

Subsequent project-specific environmental analysis will be required. These project-specific analysis will include consideration of size, location, and operational criteria of the project. This information will allow more precise modeling of hydrology and more accurate prediction of salinity effects, thus permitting better evaluation of impacts on vegetative communities. As information is gathered during the implementation phase, monitoring and adaptive management also will provide information to evaluate environmental effects, and allow the Program to adjust actions to prevent or mitigate impacts on valuable environmental resources.

The CALFED Science Program in an essential part of the CALFED Program that will monitor key system functions and complete focused research to obtain a better understanding of the system. The CMARP element of the Science Program will monitor outflow, X2, and Bay water quality. Actions will be taken based on the best available information and results will be monitored and research performed in order to refine future actions or operations. The Science Program will be conducted in an open and collaborative manner to allow and encourage involvement of stakeholder and academic science communities. The Science Program can serve as a science clearinghouse for the CALFED agencies and as a means of resolving scientific disputes. According to CALFED, needed changes will be taken to the policy makers to act on new evidence.

Therefore, the Commission believes that this portion of the proposed program generally resolves its concerns regarding salinity in the Suisun Marsh. Thus, the Commission finds that the Program is consistent to the maximum extent practicable with the Bay Plan policies on Fresh Water Inflow and the Environment and Water Supply and Quality policies of the Marsh Plan. However, the Commission should continue to review and provide input to CALFED as specific projects move towards implementation.

3. **Peak Flows.** A third potential impact involves reduction of peak flows. Peak flows benefit the Bay system by improving water quality and supporting Bay ecological functions dependent on peak flows. The increased storage facilities proposed as part of the Preferred Program Alternative will be used to capture a greater percentage of the unregulated high flows in the Bay-Delta system. This will result in a reduction of the frequency, intensity and/or duration of peak flows. However, the Ecosystem Restoration Program includes increased spring flows during 10-day pulse flow periods in Central Valley Rivers and the Delta. It is unclear how these pulse flow periods will reduce the impact of the reduction of peak flows due to increased storage facilities, and what the impact, if any, will be on the biological health of the Bay.

   At the programmatic level of detail, the EIS/EIR provides for filling reservoirs and also for higher spring-time environmental flows. Final determinations have not been made for either how reservoirs would be filled or when environmental flow will be required. Coordination of these issues will be required under real-world operating conditions so they do not conflict with each other. However, based on professional judgement of CALFED staff and consultants, the effects will not be discernible and therefore considered less than significant by CALFED. CALFED agencies agree with this finding. Overall, the CALFED Program will increase outflows to the Bay during critical times and make relatively small reductions to outflows during high flows.

   Again, the CALFED Science Program in an essential part of the CALFED Program that will monitor key system functions and complete focused research to obtain a better understanding of the system. The CMARP element of the Science Program will monitor outflow, X2, and Bay water quality). Actions will be taken based on the best available information and results will be monitored and research performed in order to refine future actions or operations. Needed changes will be taken to the policy makers to act on new evidence.

   Therefore, the Commission believes that the proposed program generally resolves its concerns regarding a reduction in peak flows into the Bay. Thus, the Commission finds that this portion of the Program is consistent to the maximum extent practicable with the Bay Plan policies on Fresh Water Inflow and Water Quality. However, the Commission should continue to review and provide input to CALFED as specific projects move towards implementation.

4. **Water Use Efficiency.** The Draft EIS/EIR Preferred Program Alternative indicates that new water storage facilities will be constructed if, among other things, there is demonstrated progress in meeting the Program's water use efficiency program targets. Considering the potential for negative impacts to the Bay from additional upstream water storage facilities, new water use efficiency programs should be implemented and monitored to allow for the clear determination of the need for additional water storage prior to the development of water storage projects.

   CALFED is continuing work to better define demonstrated progress. "Need" under Section 404 of the federal Clean Water Act (CWA) is expected to be demonstrated according to the terms of an agreement now being drafted among CALFED agencies and expected to be signed at the time of the ROD. The Corps and the EPA are working with CALFED agencies to draft a memorandum of understanding (MOU) regarding the CWA Section 404 permitting process. The MOU will outline helpful information

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necessary in pursuing a Section 404 permit. The MOU will outline what the Corps considers to be key factors that the Corps will consider in its permit decision-making process. The MOU will outline factors for demonstration of need for new or expanded surface storage for water supply reliability. The factors will include such measures as water conservation and water recycling.

Based on its review of the June 1999 draft EIS/EIR, the Commission recommended increased implementation of water use efficiency and groundwater. CALFED has increased funding for water use efficiency over original estimates and has started its grant program to help fund local managed and controlled groundwater and conjunctive use projects; CALFED has identified projects in the Sacramento Valley, near the Delta, the San Joaquin Valley and Southern California that could provide 500 TAF to 1 MAF of new storage capacity by year 2007.

Consistent with its Water Management Strategy, CALFED believes that it must use all water management tools including new storage and together with aggressive implementation of water use efficiency measures, recycling, and an improve water transfer market. Since CALFED's Programmatic EIS/EIR does not authorize construction of new storage, more detailed environmental documentation will be required before new groundwater or surface storage projects can be implemented.

Therefore, the Commission believes that the proposed program generally resolves its concerns about water use efficiency. However, the Commission should continue to review and provide input to CALFED as specific projects move towards implementation.

5. **Assurances.** The protection of Bay resources depends on assurances that the Preferred Program Alternative's water storage and conveyance facilities will be operated to provide adequate peak, average and minimum flows to the Bay. However, the discussion of assurances in the EIS/EIR, while acknowledging the need for and presenting potential methods to provide assurances, still does not propose specific proposals or commitments. The Commission continues to believe that, although this is a programmatic document, the provision of adequate assurances is a critical component that must be addressed prior to choosing and implementing new facilities to store and divert water. For example, permanent enforceable standards for minimum, average, and pulse freshwater flows should be established for inflow to the Bay in order to protect and preserve Bay resources.

   CALFED maintains that, as noted in Section 6.2.2, salinity standards set by the SWRCB will be met. CALFED has indicated its agreement with the need for firm assurances that the plan will be carried out as envisioned and meets the Program objectives in a balanced, timely, and equitable manner. However, CALFED's position is that the Program is designed to be implemented in stages, with adaptive management providing the tool for modifying implementation based as the CALFED Program moves into implementation. on scientific data and what is learned at each stage. CALFED believes that it will be impractical to develop project-level approaches and an assurances package that could anticipate all of the possible combinations of actions and their effects, and guarantee that all these outcomes will meet the stated criteria.

   Instead, CALFED proposes that implementation be governed by a combination of tools that defines the broad conceptual framework for the Program and discloses its potential range of impacts and benefits, then develop the requisite level of detail on specific

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actions on an appropriate priority basis. This step-wise implementation and assurances approach is discussed in the Implementation Plan, and can be summarized as follows:

- First, CALFED proposes to include substantial, detailed agreements on action priorities and linkages before implementation. Prior to implementation, CALFED will also develop explicit assurances with respect to Delta operations.
- Second, CALFED proposes that implementation of specific actions be governed by CALFED's solution principles and adaptive management.
- Third, CALFED proposes that actions be prioritized with broad public input.
- Fourth, individual actions will be accompanied by the appropriate environmental review, in compliance with all applicable laws and regulations, prior to permitting and implementation.

The Commission believes that the proposed program generally resolves its concerns regarding the need for assurances. However, the Commission should continue to encourage development of sound assurances

6. **Ecosystem Restoration.** CALFED funding for ecosystem restoration projects has so far been largely limited to the Delta and upstream areas, with relatively few projects funded in the San Francisco Bay or Suisun Marsh, although funding for Bay projects (such as Hamilton wetlands restoration planning) has increased in recent funding rounds. The Commission expressed its belief that CALFED should expand its "solution area" for ecosystem restoration funding to encompass the entire Bay and adequate funding should be provided for deserving projects throughout the entire Bay-Delta region. The six goals, nearly 100 restoration objectives, and restoration targets presented in the CALFED Ecosystem Restoration Program illustrate the need for funding Bay Area projects.

   CALFED has not included San Francisco Bay as part of its defined problem area (which includes the legally defined Delta, Suisun Bay extending to Carquinez Strait, and Suisun Marsh). Nevertheless, because the Bay-Delta system is part of a larger water and biological resource system, solutions to address the problems in the system will include a broader geographic scope, extending both upstream and downstream. This solution scope includes San Pablo Bay, San Francisco Bay, and portions of the Pacific Ocean out to the Farallon Islands. In particular, the Program will address interactions between the Delta and San Francisco Bay, such as flow or sediment, by examining the inputs and outputs from the defined problem area. In keeping with CALFED's solution principle that solutions should pose no significant redirected impacts, consideration will be given to how Program activities affect the San Francisco Bay region.

   CALFED identified the geographic scope of analysis and actions for the Program through technical, public, and agency forum discussions during the first couple of months of the Program. As a result of those efforts, CALFED decided that the problem definition area will focus on the Suisun Bay, Suisun Marsh, and the Delta, while solution generation will come from a much broader area.

CALFED's Bay Region includes Suisun Bay and Marsh, San Pablo Bay, and the San Francisco Bay watershed. In addition, an off-shore band, approximately 25 miles wide that runs from Point Conception to the Oregon border, has been included to cover anadromous fish along the California coast. The upper watershed areas of the Bay Region include the unregulated watersheds that drain directly into San Francisco Bay, and the watershed areas upstream of existing reservoirs and fish migration barriers in the San Francisco Bay Area. These areas include the east-sloping drainages of San Mateo, San Francisco, and Marin Counties; north- and west-sloping drainages of Contra Costa and Alameda Counties; and the east- and north-sloping drainages of Santa Clara County. The major creeks in the Bay Region include Miller, Corte Madera, San Rafael, Novato, San Ramon, Walnut, Pacheco, Wildcat, Alameda, Berryessa, Coyote, Guadalupe, Stevens, and San Francisquito.

The Ecosystem Restoration Program is the Program component that will most directly affect the ecological health of the Bay-Delta. CALFED states that the goals and objectives included in the Strategic Plan go well beyond consideration of just fish. The San Francisco Bay will be considered in the context of its contribution to the ecological health of the Delta. However, the objective of the ERP is to deal with ecological problems manifest in the Delta. CALFED scientists have found no biological or physical link that will lead to the belief that resolution of problems in South or Central Bay will result in improvements in the Delta. In addition, many existing programs focus on the ecological restoration of San Francisco Bay. The Comprehensive Conservation and Management Plan (CCMP) is the most comprehensive. CALFED has focused its planning effort on the area upstream of the central Bay and specifically on improving the quality and quantity of ecological inputs to the Bay. CALFED believes the focus is appropriate and will complement efforts under the CCMP.

Within the Suisun Bay and Marsh Ecological Unit, ERP actions focus on restoring tidal action to selected managed wetlands and promoting natural riparian and wetland succession in the Suisun Marsh. In the Napa River Ecological Unit, restoration efforts will be focused in the Napa Marsh Wildlife Area, Cullinan Ranch, and Scaggs Island and will include habitat protection and restoration of large, contiguous areas of tidal, saline, emergent wetland, riparian, and upland habitats. In the Sonoma Creek Ecological Unit, existing habitats will be maintained and current and future restoration efforts in the Napa/Sonoma Marsh will be expanded. In the Petaluma River Ecological Unit, Petaluma Marsh and its associated tidal slough network will be expanded. In the San Pablo Bay Ecological Unit, the ecological health of San Pablo Bay and its function as an important nursery for marine, estuarine, and anadromous fish can be enhanced by increasing freshwater inflow, protecting and expanding tidal marsh/slough habitat complexes along the margins of the Bay, and reducing the input of pollutants into the Bay.

Some specific targets for ecological improvement in the Suisun Marsh/North San Francisco Bay include:

- Develop 1,600 acres of deeper (3-6 feet deep), open water areas to provide resting habitat for water birds, foraging habitat for diving ducks and other water birds that feed in deep water.

- Restore tidal action to 5,000 to 7,000 acres in the Suisun Bay and Marsh Ecological Management Ecological Unit; 1,000 to 2,000 acres in the Napa River Ecological Management Unit; 500 to 1,000 acres each in the Sonoma Creek, Petaluma River, and San Pablo Bay Ecological Unit.
- Restore full tidal action to muted marsh areas along the north shore of Contra Costa shoreline.
- Assist in protecting and enhancing 40,000 to 50,000 acres of existing degraded seasonal wetland habitat in the Suisun Bay and Marsh Ecological Management Unit.
- Acquire and convert 1,000 to 1,500 acres of existing farmed baylands in the Suisun Marsh to seasonal wetland.
- Restore 1,500 acres of tidal, perennial, aquatic, shallow-water habitat in the Suisun Marsh/North San Francisco Bay Ecological Zone.
- Restore slough habitat for fish and associated wildlife species: 10 miles in the Suisun Bay and marsh Ecological Management Unit; 20 miles in the Napa River Ecological Management Unit; 20 miles in the Sonoma Creek Ecological Management Unit; and 20 miles in the Petaluma River Ecological Management Unit.
- Reduce entrainment losses of fish at water diversions by installing positive barrier fish screens.
- Reduce or eliminate the influx of non-native aquatic species.

The CALFED documents indicate that, in addition to reestablishing habitats in the northern portion of the Bay and the Suisun Marsh, the ERP will improve the quantity and quality of ecological inputs to the Bay and Marsh. The ERP will increase outflow during critical period, and will improve nutrient quantity and primary productivity. The ERP is expected to restore the transport of clean nutrients to the Bay and reduce the loading of toxics from upstream sources.

CALFED has already funded many Ecosystem Restoration Projects in the BCDC area. These include:

- Bay Point Shoreline Restoration Plan to restore tidal salt marsh habitat and function.
- Reintroduction of endangered Soft Bird's Beak in habitat of the Suisun Marsh.
- Fish screen construction.
- IPM Partnership to reduce pesticide use and improve water quality in Suisun Bay and local creeks.
- Alhambra Creek Watershed CRMP.
- Hill Slough West Habitat Demonstration Project to restore tidal action of seasonal and permanent wetlands.

- Benicia Waterfront Marsh Restoration to restore tidal action to salt mash habitat to provide tidal saline emergent wetlands.
- Biological Restoration and Monitoring in the Suisun Marsh/North San Francisco Bay Ecological Zone to restore emergent and immersed marshland.
- Cullinan Ranch Restoration to restore tidal salt marsh habitat and function.
- Napa River Wetlands Acquisition to protect and restore native marsh wetland habitat.
- South Napa River Tidal Slough & Floodplain Restoration Project to protect and enhance the riparian and riverine habitats.
- Napa River Watershed project to protect and enhance the riparian and riverine habitats.
- South Napa River Wetlands Acquisition and Restoration Program to re-colonize native plants, perform plant surveys and survival rates.
- South Napa River Tidal Slough and Floodplain Restoration Project to re-colonize native plants, perform plant surveys and survival rates.
- Napa River Watershed Stewardship to protect and enhance the riparian and riverine habitats.
- Tolay Creek Restoration to restore tidal salt marsh habitat and function.
- Sonoma Creek Watershed to protect and enhance the riparian and riverine habitats.
- Sonoma Creek Watershed Conservancy to protect and enhance the riparian and riverine habitats.
- Petaluma River Watershed Restoration Program to evaluate and implement restoration and rehabilitation needs of the region.
- Petaluma Marsh Expansion Project to protect and restore tidal marsh.
- Hamilton Wetlands Restoration Planning to restore subsided diked area to upland seasonal and tidal wetland habitats.
- Species & Community Profiles of the San Francisco Bay Area Wetlands Ecosystem Goals Project to evaluate restoration and rehabilitation needs of the region.
- Regional Wetlands Goals Project to evaluate restoration and rehabilitation needs of the region.
- Steelhead and Chinook Salmon Fish Passage Barrier Remediation on the Guadalupe River.
- Local Watershed Stewardship: Steelhead Trout Plan.
- Cold Water Fisheries and Water Quality Element to evaluate restoration needs of the region.

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In addition, CALFED has funded numerous research projects and public education projects within BCDC's jurisdiction including issues relating to non-native species, environmental and water management, and toxicity.

Overall, CALFED believes it will improve environmental conditions above current conditions and recover many species listed in the CALFED's Multi-Species Conservation Strategy. For species designated "R," CALFED has established a goal to recover the species within the CALFED ERP ecological management zones. A goal of "recovery" was assigned to those species whose recovery is dependent on restoration of the Delta and Suisun Bay/Marsh ecosystems and for which CALFED could reasonably be expected to undertake all or most of the actions necessary to recover the species. Recovery is achieved when the decline of a species is arrested or reversed, threats to the species are neutralized, and the species' long-term survival in nature is assured.

According to CALFED, recovery is equivalent, at a minimum, to the requirements of delisting a species under FESA and CESA. Certain species, such as anadromous fish, have threats outside the geographic scope or purview of the CALFED Program (i.e., ocean harvest regulated under the Magnuson-Stevens Act). Therefore, in some instances CALFED may not be able to complete all actions potentially necessary to recover the species; however, CALFED will implement all necessary recovery actions within the ERP ecological management zones. For other species, CALFED aims to achieve more than will be required for delisting (e.g., restoration of a species and/or its habitat to a level beyond delisting requirements). The effort required to achieve the goal of "recovery" may be highly variable between species. In sum, to achieve the goal of recovery, CALFED is expected to undertake all actions within the ERP ecological management zones and program scope necessary to recover the species.

The "R" species in BCDC's jurisdiction include the Central Valley steelhead, Central Valley winter-, spring-, and fall/late fall-run chinook salmon, delta smelt, longfin smelt, Sacramento splittail, green sturgeon, valley elderberry longhorn beetle, Suisun ornate shrew, Suisun song sparrow, San Pablo song sparrow, bird's-beak, Suisun thistle, Mason's lilaeopsis, and Suisun marsh aster.

For species designated "r," CALFED would make specific contributions toward the recovery of the species. The goal "contribute to recovery" was assigned to those species for which CALFED actions will affect only a limited portion of the species' range and/or CALFED actions will have limited effects on the species.

To achieve the goal of contributing to a species' recovery, CALFED is expected to undertake some of the actions under its control and within its scope that are necessary to recover the species. When a species has a recovery plan, CALFED may implement both plan measures that are within the CALFED Problem Area, and some measures that are outside the Problem Area. For species without a recovery plan, CALFED will need to implement specific measures that would benefit the species.

The "r" species in BCDC's jurisdiction include the Sacramento perch, giant garter snake, salt marsh harvest mouse, San Pablo California vole, California clapper rail, California black rail, little willow flycatcher, bank swallow, Swainson's hawk, California yellow warbler, salt marsh common yellowthroat, Northern California black walnut, delta tule pea, and Point Reyes bird's-beak.

For species designated "m," CALFED will take actions to maintain the species. This category is less rigorous than "contribute to recovery". The goal "maintain" was assigned to species expected to be minimally affected by CALFED actions. For this category, CALFED will avoid, minimize, and compensate for any adverse effects to the species commensurate with the level of effect on the species. Actions may not actually contribute to the recovery of the species; however, at a minimum, they will be expected to not contribute to the need to list a species or degrade the status of a listed species. CALFED will also, to the extent practicable, improve habitat conditions for these species.

There are approximately 50 "m" species that may occur within BCDC's jurisdiction. These include species residing in Natural Community Conservation Plan (NCCP) habitats designated as: Valley/foothill Riparian; Managed Seasonal Wetlands; Tidal Freshwater Emergent; Tidal Perennial Aquatic; Valley Riverine Aquatic; Saline Emergent; Estuarine; and Lacustrine.

While the Commission expressed its belief CALFED should expand its solution area to include the entire Bay, CALFED maintains that its purpose is to solve problems in the Delta. However, CALFED acknowledges that certain actions in the Bay can further CALFED's goals for the Delta.

The Commission believes that the proposed program generally resolves its concerns about funding for ecosystem restoration in the Bay. In addition, as future ecosystem restoration projects will be the subject of separate consistency determinations or permits in the future, the Commission will be able to consider such projects individually to assure that they are carried out in a manner consistent with the Commission's laws and policies. Thus, the Commission finds that this portion of the Program is consistent to the maximum extent practicable with the relevant Bay Plan and Marsh Plan policies. However, the Commission should help promote specific projects/actions in the Bay region that show a direct connection to furthering CALFED's goals for the Delta.

7. **Dredged Material Reuse.** The EIS/EIR mentions the potential benefits of using dredged material to help restore wetland habitat in subsided areas. The Commission expressed its belief that this potential linkage to the Long Term Management Strategy (LTMS) program for Bay dredged material should be explored in greater detail. Although several demonstration projects involving Delta levee stabilization using Bay dredged material have been conducted in association with the LTMS, the lack of adequate resources to address salinity, water quality and funding issues associated with reusing Bay dredged material in the Delta have hampered additional similar projects. BCDC believed that the EIS/EIR should include and analyze a dredged material reuse program in the Delta using Bay and Delta material as part of the alternatives.

CALFED acknowledged that the Levee Program and Ecosystem Restoration Program could benefit from clean dredged material, and that the Storage and Conveyance Program and general flood control could benefit from dredging Delta channels to increase flow capacity. Over the past decade, however, it has become increasingly difficult to dredge in the Delta because of very short work windows to satisfy endangered species requirements and Central Valley Regional Water Quality Control Board (CVRWQCB) waste discharge concerns. CALFED approved a $500,000 Category III

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grant to DFG, the Delta Protection Commission, and the CVRWQCB to establish waste discharge requirements and obtain general order permits that would allow dredging and reuse of non-saline dredged material.

State Board approval for the reuse of saline dredged materials will be pursued following approval of non-saline materials. CALFED recognizes that the Long-Term Management Strategy (LTMS) Program has a significant upland disposal goal. Once the reuse of saline dredged materials receives Board approval and is found to be economically viable, CALFED will pursue the reuse of saline dredged materials from the Bay.

The Commission believes that the proposed program generally resolves its concerns about the use of dredged material to implement portions of the CALFED program. Thus, the Commission finds that this portion of the Program is consistent to the maximum extent practicable with the Bay Plan policies on Dredging, the proposed LTMS program, and the relevant Marsh Plan policies. However, the Commission should continue to monitor the progress in the Board's process and encourage coordination with the LTMS.

8. **Environmental Water Account.** CALFED has continued evaluation of an Environmental Water Account for more flexible system operation to improve fisheries protection and recovery, while providing improvements in water quality and water supply reliability. While the EIS/EIR is a programmatic document, the proposed Account appears to be a key measure for insuring adequate in-stream flows for fish and other species. The Commission believes the revised EIR/S should include as much information as possible regarding the proposed Environmental Water Account Program.

   Given the programmatic nature of the EIS/EIR, all details of the Environmental Water Account have not been finalized. However, the June 2000 *A Framework for Action* and CALFED's July 2000 *Phase II Report* show considerably more detail than the June 1999 Draft Programmatic EIS/EIR. The EWA will rely on more flexible management of water based on real-time needs of the fishery resources. The EWA functions primarily by changing the timing of some flow releases from storage and the timing of water exports from the south Delta pumping plants to coincide with periods of greater or lessor vulnerability of various fish to Delta conditions. The EWA will be established to provide water for protection and recovery of fish beyond water available through existing regulatory actions related to project operations.

   The EWA is based on the concept that flexible management of water will achieve fishery and ecosystem benefits more efficiently than a completely prescriptive regulatory approach. The purpose of the EWA is not to meet existing standards, but to provide for additional water management beyond the existing standards. By managing EWA assets (such as water, storage, money, and operation rights) on a real-time basis, the overall cost of environmental protection can be lower than under a purely prescriptive approach. This will help to attain water supply reliability objectives for other water users and improve fisheries conditions. In addition, by managing the EWA in close coordination with other parts of the Water Management Strategy, multiple benefits may sometimes be achieved from the use of EWA assets. For example, the EWA may at times release water to achieve both fishery enhancement and water quality benefits.

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During Stage 1, the EWA will work from a foundation of the existing regulatory regime. The EWA will not be a substitute for existing prescriptive standards, but will supplant the need for potential new standards. The EWA will be established to provide water for the protection and recovery of fish beyond water available through existing regulatory actions related to project operations. The EWA will benefit water users by providing additional water for fish without the need to reduce project deliveries. The EWA will be authorized to acquire, bank, transfer, and borrow water and to arrange for its conveyance. EWA assets will be managed by the state and federal fishery agencies (USFWS, NMFS, and DFG) in coordination with project operators and stakeholders, through the CALFED Operations Group. Initial acquisition of assets for the EWA will be made and funded by federal and state agencies (Reclamation and DWR). Subsequently, it is anticipated that acquisitions and cost allocations among beneficiaries will be made pursuant to a public process that may take advantage of other agencies or third parties to acquire assets.

To provide regulatory stability during the initial period of Stage 1, the CALFED agencies will provide a commitment, subject to legal requirements, that for the first 4 years of Stage 1, there will be no reductions, beyond existing regulatory levels, in CVP or SWP deliveries from the Delta resulting from measures to protect fish under the federal and state ESA's. This commitment will be based on the availability of three tiers of assets:

- Tier 1 is baseline water, provided by existing regulation and operational flexibility. The regulatory baseline consists of the biological opinions on winter-run chinook salmon and delta smelt, 1995 Delta Water Quality Control Plan, and 800 TAF of CVP Yield pursuant to the Central Valley Project Improvement Act (CVPIA) Section 3406(b)(2). See the EWA section in the Phase II Report for more detail on the regulatory baseline.

- Tier 2 consists of the assets in the EWA combined with the benefits of the Ecosystem Restoration Program and is an insurance mechanism that will allow water to be provided for fish when needed without reducing deliveries to water users. Tier 1 and Tier 2 are, in effect, a water budget for the environment and will be used to avoid the need for Tier 3 assets. It is unlikely that assets beyond those in Tier 1 and Tier 2 will be needed to meet ESA requirements. However, if further assets are needed in specific circumstances, a third tier will be provided.

- Tier 3 is based on the commitment and ability of the CALFED agencies to make additional water available should it be needed. In considering the need for Tier 3 assets, the fishery agencies will consider the views of an independent science panel. Tier 3 assets may include additional purchases from willing sellers or consensual borrowing of water (beyond assets borrowed in the implementation of the EWA).

The ESA commitment will be in effect for 4 years based on Ecosystem Restoration Program implementation and the assets available in that period. It is anticipated that sufficient assets, either from existing sources or from supply augmentation, will be available for the protection of fish beyond the first 4 years, and that the commitment will be extended. The only exception to this commitment would arise in the extremely

unlikely event that, despite the utilization of all measures available in the three tiers, a determination is made that a situation of jeopardy to a listed species nevertheless is likely.

The EWA will need to make use of all of the water management tools. Especially in its first few years of operation, a substantial portion of the assets needed for an EWA will come from access to existing project flexibility, new changes in project flexibility (for example, the joint point of diversion and export/inflow ratio flexibility) and through voluntary purchases (estimated at $50 million annually) on the water transfer market. Given these market-based water transfers, the EWA will affect the cost and availability of water transfer capacity. See the EWA section in the Phase II Report for more detail on EWA assets. Given the adaptive management approach for the CALFED Program, additional assets may be added in the future. For example, new water supply features may also provide additional water for the Account.

On average, the EWA will cause export timing shifts of approximately 380 TAF annually; somewhat higher amounts are anticipated after the first year. These timing shifts will not reduce the volume of exports except for water under some voluntary market transactions. CALFED's analysis of the EWA shows that the EWA performance increases as the EWA's access to surface and groundwater storage increases. Flexibility in project operations and improvements in conveyance facilities can both help deliver environmental water at the desired place and time and can help to create new EWA assets. This flexibility is essential for the EWA for it must be operated in tandem with [[Section 3406]] b(1), b(2), and b(3) water provided under the CVPIA. Finally, the EWA cannot function without the comprehensive monitoring program envisioned in CALFED's Science Program.

CALFED acknowledges that water quality concerns also must be considered in managing the EWA. Operational changes to enhance the protection of aquatic resources and maintain export supplies have the potential to affect water quality, either positively or negatively. Management of the EWA must be coordinated closely with operation of the state and federal water projects and the Water Quality Program to assure that EWA operations do not adversely affect the Program's ability to meet its water quality goals.

Overall, the Account has the potential to improve ecosystem conditions relating to the Bay. The Commission believes that the proposed program generally resolves its concerns about the EWA. However, the Commission should annually review the results of the progress of the Environmental Water Account and provide additional input as necessary.

9. **Non-native Species Abundance Increases.** Section 6.1.12 of the EIS/EIR indicates a potentially unavoidable significant impact due to increased non-native species. Considering that San Francisco is regarded by some as the most invaded estuary in the country, and considering the spread of invasive species into the Delta system, the Commission argued that the document should incorporate measures to address this issue. The revised EIS/EIR should clearly state how CALFED will address non-native species issues and impacts.

   Mitigation strategies are identified in Section 6.1.11 of the EIS/EIR to address the issue of non-native species through creation of additional habitat for desired species and controlling undesirable species. Program activities to improve understanding of non-native

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species populations and potential effects on native species are part of the Ecosystem Restoration Program and the CMARP. Chapter 9 discusses how mitigation strategies will be applied to individual CALFED programs. CALFED has already funded some research and public education relating to non-native species.

The Commission believes that the proposed program generally resolves its concerns about the potential increase in non-native species. Therefore, the Commission finds that the Program is consistent to the maximum extent practicable with the Bay Plan policies on Fish and Wildlife and Marshes and Mudflats and the marsh Plan policies on Environment an Marsh and Upland Resource Use and Management. However, the Commission should continue to review progress and provide input to CALFED on the non-native species issue.

10. **Periodic Review of CALFED Implementation.** The EIS/EIR includes information regarding the future implementation of the Program. There is periodic opportunity for public review and comment regarding implementation of the overall CALFED program. This review is particularly important since CALFED is portrayed as an adaptive management program that would learn from its mistakes. Additionally, since certain CALFED program elements could potentially be in conflict, the public should have the opportunity to provide input on the resolution of these conflicts.

    As part of the CALFED Science Program, CALFED will establish monitoring, data assessment, and research activities for all program elements that provide information for evaluating the effectiveness of program actions in reaching the program objectives. All of the monitoring, data assessment, and research activities will be done within an adaptive management framework. Consequently, most of the activities will be undergoing continual refinement through the duration of the program.

    The June 2000 *A Framework for Action* includes a commitment for an annual review of CALFED implementation. Prior to November 15th each year, beginning in 2001, the CALFED governing body, in consultation with other interested persons and agencies, will review the CALFED Program's progress in meeting the implementation schedule established in the Final Programmatic EIS/EIR and Record of Decision. The CALFED governing body will submit an annual report to the Governor, the Secretary of the Interior, the State Legislature and Congress that describes the status of implementation of all elements of the Program by December 15th of each calendar year. If at the conclusion of each annual review, or if a timely annual review has not been issued, the Governor or the Secretary of the Interior determines that the schedule or objectives established in the final Record of Decision has not been substantially adhered to, the Governor and the Secretary, after notice to, and consultation with, state and federal CALFED representatives, will prepare a revised schedule that ensures that balanced solutions in all program areas are achieved consistent with the intent of the final Record of Decision. State funds, if the determination was made by the Governor, and federal funds, if the determination was made by the Secretary of the Interior, will only be available for expenditure in the subsequent budget year if a revised schedule has been developed within six months from the date on which the determination was made that the prior schedule has not been substantially adhered to. Upon the submission of any revised schedule, funds will be expended in accordance with that revised schedule.

CALFED acknowledges the need for support at every level for the Program to succeed and the need for periodic public review and comment on the Program as implementation proceeds. The CALFED Implementation Plan explicitly reflects the commitment to periodic public review of Program implementation. Given the programmatic nature ofthe EIS/EIR, site-specific environmental documentation will be required before implementation of individual actions. This will provide for additional public review when more detailed information is developed at the project level.

The Commission believes that the proposed program generally resolves its concerns about the process for periodic review of CALFED implementation. However, the Commission should continue to review information and provide input of the annual reports and the site-specific environmental review of as implementation progresses.

11. **Suisun Marsh Levee Protection.** There appears to be two options that CALFED is considering for the Suisun Marsh levee system. One option would be to essentially maintain the levee system as is, and the other option would be to protect only a portion of the exterior marsh levees and allow certain managed wetland areas (i.e., duck clubs) to become tidal marsh.

CALFED has added the investigation of the Suisun Marsh levee system to the Levee Program in order to improve ecosystem quality, water supply reliability, and water quality objectives. Efforts to clarify linkages of these actions to the CALFED objectives are ongoing in the Suisun Marsh levee investigation and will be completed within the first few years following the Record of Decision. The following alternatives are being considered by CALFED in the investigation for the Suisun Marsh levees:

- Include all the exterior levees (approximately 229 miles) in the Levee Program. The existing Suisun Marsh Exterior Levee Standard would be adopted.
- Protect part of the levee system. Reconfigure the marsh to protect existing managed wetlands and develop new tidal wetlands.

Ensuring the integrity of the exterior levees in the Suisun Marsh may be critical to sustaining seasonal wetland values provided by the Marsh's managed wetlands. Improved levees would ensure that conversion to tidal wetlands would not be due to levee failure, but instead would be planned with consideration of landowner support, ERP targets, regional wetland goals, and endangered species recovery plans.

The investigation results will further clarify the appropriate direction to be taken in planning Suisun Marsh levee work. Ensuring the integrity of the exterior levees in the Suisun Marsh would sustain seasonal wetland values provided by the marsh's managed wetlands. Improved levees would ensure that managed wetlands are not converted to tidal wetlands due to levee failure. Instead, conversion would be planned, with consideration of landowner support, Ecosystem Restoration Program targets, regional wetland goals, endangered species recovery plans, and Delta water quality objectives.

The Commission believes that the proposed program generally resolves its concerns about Suisun Marsh levee protection. In addition, as levee projects will be the subject of separate consistency determinations or permits in the future, the Commission will be able to consider such projects individually to assure that they are carried out in a manner consistent with the Commission's laws and policies. Thus, the Commission finds that

this portion of the program is consistent to the maximum extent practicable with the Marsh Plan policies on Environment and Marsh and Upland Resource Use and Management. However, the Commission should continue to provide input as the investigation progresses over the next few years.

Overall, the Commission finds that the proposed program is consistent to the maximum extent practicable with the enforceable policies of the Commission's federally approved, Amended Management Program for San Francisco Bay. The Commission requests, however, that the CALFED agencies return to the Commission once the Record of Decision is adopted to further explain whatever changes have been made in the CALFED program as a result of the ROD, particularly with respect to governance and assurances.

C. **Coastal Zone Management Act.** The Commission, pursuant to the CZMA of 1972, as amended (16 USC Section 1451), and the implementing Federal Regulations in 15 CFR Part 930, is required to review federal projects within the San Francisco Bay and agree or disagree with the federal agency's determination that the project is consistent with the Commission's amended coastal zone management program for San Francisco Bay. The Commission finds and certifies that the CALFED program, as described herein and in the information submitted, is within or affects the coastal zone and is consistent with the Commission's amended coastal zone management program for the Bay, as approved by the Department of Commerce.

D. **Environmental Impact.** The *Final Programmatic Environmental Impact Statement/Environmental Impact Report* for the CALFED Bay-Delta Program evaluated the programmatic elements covered under the subject consistency determination. This environmental documentation has been provided to the Commission staff and a Record of Decision is expected to be signed in late August 2000. Pursuant to these materials and the consistency determination, the CALFED agencies have sufficiently resolved potential environmental impacts. Therefore, the Commission finds that the project will not likely have a significant adverse impact on the environment.

E. **Conclusion.** For all of the above reasons, the Commission finds that the project is consistent, to the maximum extent practicable, with the Commission's amended coastal zone management program for the Bay.

Executed at San Francisco, California, on behalf of the San Francisco Bay Conservation and Development Commission on the date first above written.

STEVEN A. McADAM
Deputy Director

SAM/ra
cc: U. S. Army Corps of Engineers, Attn.: Regulatory Functions Branch
San Francisco Bay Regional Water Quality Control Board,
Attn.: Certification Section
Environmental Protection Agency, Attn.: Mike Monroe, W-3-3