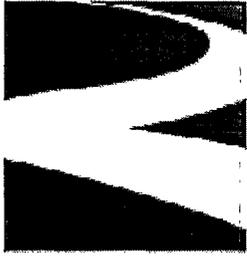


CALFED
BAY-DELTA
PROGRAM

Attachment 9 Coastal Zone Management Act Programmatic Consistency Determination

August 28, 2000



**CALFED
BAY-DELTA
PROGRAM**

**COASTAL ZONE MANAGEMENT ACT
PROGRAMMATIC CONSISTENCY DETERMINATION
FOR THE CALFED BAY-DELTA PROGRAM**

July 2000

TABLE OF CONTENTS

COASTAL ZONE MANAGEMENT ACT

PROGRAMMATIC CONSISTENCY DETERMINATION
FOR THE CALFED BAY-DELTA PROGRAM 1

1.0 BACKGROUND 1

2.0 DESCRIPTION OF THE PROPOSED CALFED BAY-DELTA PROGRAM 2

 2.1 CALFED ECOSYSTEM RESTORATION PROGRAM 3

 2.2 WATER QUALITY PROGRAM 4

 2.3 WATER USE EFFICIENCY PROGRAM 6

 2.4 WATER TRANSFER PROGRAM 6

 2.5 LEVEE SYSTEM INTEGRITY PROGRAM 6

 2.6 WATERSHED PROGRAM 7

 2.7 STORAGE 7

 2.8 CONVEYANCE 8

3.0 MANAGEMENT PROGRAM FOR THE SAN FRANCISCO BAY SEGMENT OF THE
CALIFORNIA COASTAL ZONE 10

 3.1 SAN FRANCISCO BAY PLAN 10

 3.1.1 FISH AND WILDLIFE 10

 3.1.2 WATER QUALITY 10

 3.1.3 FRESHWATER INFLOW 11

 3.1.4 WATER SURFACE AREA AND VOLUME 11

 3.1.5 MARSHES AND MUDFLATS 11

 3.1.6 SALTPONDS AND OTHER MANAGED WETLANDS 12

 3.1.7 SHORELINE PROTECTION 12

 3.2 SUISUN MARSH PROTECTION PLAN 13

 3.2.1 ENVIRONMENT 13

 3.2.2 WATER SUPPLY AND QUALITY 13

 3.2.3 UTILITIES, FACILITIES, AND TRANSPORTATION 14

 3.2.4 WATER-RELATED INDUSTRY 15

 3.2.5 LAND USE AND MARSH MANAGEMENT 15

 3.3 MCATEER-PETRIS ACT 16

4.0 PROGRAMMATIC DETERMINATION OF FEDERAL CONSISTENCY 17

 4.1 PROGRAMMATIC ACTIONS IN THE CALFED PREFERRED ALTERNATIVE
 THAT MAY AFFECT SAN FRANCISCO BAY OR SUISUN MARSH 18

 4.1.1 CALFED ECOSYSTEM RESTORATION PROGRAM 18

 4.1.2 CALFED WATER QUALITY PROGRAM 19

 4.1.3 CALFED WATER USE EFFICIENCY PROGRAM 19

 4.1.4 CALFED WATER TRANSFER PROGRAM 19

 4.1.5 LEVEE SYSTEM INTEGRITY PROGRAM 20

 4.1.6 CALFED WATERSHED PROGRAM 20

 4.1.7 CALFED STORAGE ELEMENT 20

4.1.8 CALFED CONVEYANCE ELEMENT	21
4.2 DETERMINATION OF PROGRAMMATIC CONSISTENCY	21
4.2.1 ECOSYSTEM RESTORATION PROGRAM	21
4.2.2 WATER QUALITY PROGRAM	25
4.2.3 WATER USE EFFICIENCY PROGRAM	25
4.2.4 WATER TRANSFER PROGRAM	26
4.2.5 LEVEE SYSTEM INTEGRITY PROGRAM	26
4.2.6 WATERSHED PROGRAM	26
4.2.7 STORAGE	27
4.2.8 CONVEYANCE -PREFERRED PROGRAM ALTERNATIVE	28
4.3 CONCLUSION	28
5.0 NEXT STEPS	29
6.0 REFERENCES	29

List of Acronyms

- Coastal Zone Management Act of 1972 (CZMA) (1)
- National Oceanic and Atmospheric Administration (NOAA) (1)
- California Coastal Act of 1976 (Coastal Act) (1)
- San Francisco Bay Conservation and Development Commission (BCDC) (1)
- CALFED Bay-Delta Program (CALFED) (1)
- San Francisco Bay/Sacramento-San Joaquin Delta estuary (Bay-Delta) (2)
- Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (2)
- Ecosystem Restoration Program (ERP) (3)
- best management practices [BMPs] (5)
- Clifton Court Forebay (CCFB) (6)
- Joint Point of Diversion (JPOD) (6)
- State Water Project (SWP) (6)
- Central Valley Project (CVP) (6)
- Thousand Acre Feet (TAF) (6)
- Million Acre Feet (MAF) (6)
- Delta Cross Channel (DCC) (7)
- Total organic carbon (TOC) (7)
- State Water Resources Control Board (SWRCB) (9)
- California Department of Fish and Game (DFG) (12)
- Environmental Water Account (EWA) (20)

List of Figures

Figure 1- CALFED Bay-Delta Program Study Area/BCDC Jurisdiction Overlap

List of Tables

Table 1- Summary of Consistency of the CALFED Preferred Alternative with BCDC Policies

Table 2- Consistency of ERP Programmatic Actions with BCDC Policies

COASTAL ZONE MANAGEMENT ACT PROGRAMMATIC CONSISTENCY DETERMINATION FOR THE CALFED BAY-DELTA PROGRAM

1.0 BACKGROUND

The Coastal Zone Management Act of 1972 (CZMA) requires federal agencies to preserve, protect, and, where possible, restore and enhance the resources of the coastal zone (16 USC 1451 et seq.). Coastal states must develop coastal zone management programs to be reviewed and approved by the secretary of commerce through the National Oceanic and Atmospheric Administration (NOAA). Federal agencies are required to certify that any proposed activities within or affecting the coastal zone are consistent with the coastal state's program. The coastal state notifies the federal agencies of its concurrence with or objection to the certification. If the coastal state finds that the proposed activity is inconsistent with its program, the federal agencies must obtain an override from the Secretary of Commerce before action can commence.

California developed a coastal zone management program through the McAteer/Petris Act, the Suisun Marsh Preservation Act and the California Coastal Act of 1976 (Coastal Act) (Division 20, 30000 et seq. Cal. Pub. Res. Code). Local governments within the coastal zone are responsible for implementing the program. The San Francisco Bay Conservation and Development Commission (BCDC) oversees the San Francisco Bay segment of the coastal zone management program, in addition to administering the other two above-referenced laws, and has permit jurisdiction over projects at any location within 100 feet inland of the highest tidal action around San Francisco and Suisun Bays. It has jurisdiction over projects within specific waterways up to the legally defined Sacramento-San Joaquin Delta (east of Chipps Island) that empty into San Francisco Bay and within specific saltponds and managed wetlands. Additionally, BCDC has direct permit authority over all activities and land uses defined in the Suisun Marsh Preservation Act, specifically projects within the "primary management area", which includes all tidal waters and marshes, managed wetlands, and lowland grasslands. Any person or public agency proposing to deposit fill; extract materials; or change the use of water, land, or structures in or around San Francisco or Suisun Bays must obtain a development permit from BCDC or, if proposing to conduct such development in or around Suisun Marsh, a marsh development permit from BCDC.

The CALFED Bay-Delta Program (CALFED) Preferred Alternative includes programmatic actions (undertaken either directly or indirectly through approval by federal agencies) 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 compliance with CZMA. Because these activities have the potential to affect the coastal zone, CALFED prepared this consistency determination to document the possible effects of the Preferred Alternative on coastal resources and the actions that CALFED will take to ensure that the Preferred Alternative is implemented in a manner consistent, to the maximum extent practicable, with the McAteer/Petris Act, the Suisun Marsh Preservation Act and CZMA. The potential

geographic overlap between CALFED's geographic scope and BCDC's coastal zone jurisdiction is depicted in Figure 1.

This federal consistency determination is based on a general evaluation of the proposed CALFED action at the programmatic level. Development and environmental review of the Preferred Alternative during Phase II requires compliance with CZMA even though no specific action will be implemented during this phase. CALFED implementing agencies will return to the Commission for individual permits/consistency determinations at the time site-specific projects are proposed.

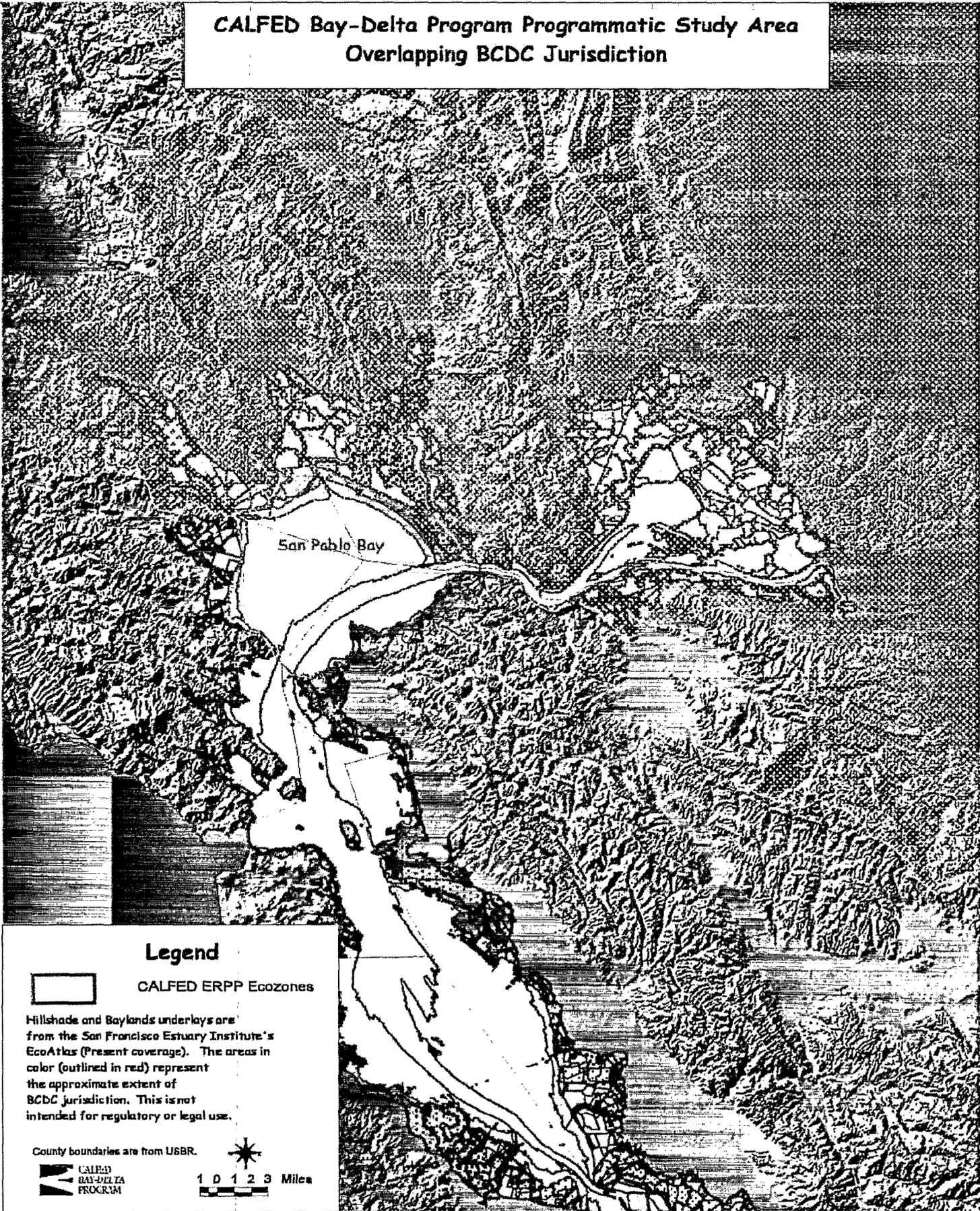
2.0 DESCRIPTION OF THE PROPOSED CALFED BAY-DELTA PROGRAM

CALFED is currently at the culmination of a years-long planning process that began with the signing of the Bay-Delta Accord in 1996. Since that time, 18 state and federal agencies have worked together to devise a plan for restoring the ecosystem of the fragile Bay-Delta, while meeting the water reliability and water quality needs of millions of the state's citizens. During this process, there has been close and ongoing consultation with all the stakeholders involved with the ecosystem and water use. This process has been long and difficult, but has resulted in the current Preferred Alternative, which most involved stakeholders and political leaders agree will go the furthest toward meeting the many differing goals of CALFED.

As described in the EIS/EIR and Program Plans, CALFED will 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 will be 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 flows to the Bay will be of better-quality water, 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 which would result from this detention, but part of the CALFED Program is to study the possible impacts of this action. Also, X2 may move a fraction of a kilometer to the east. Again, no adverse impact can be identified for this potential move, but CALFED has committed to study the issue. Before any individual projects are built, these questions would need to be answered, and impacts, if any, would need to be mitigated. Any project proposed within the jurisdiction of BCDC would need to return to the Commission for a consistency determination before that particular action or project could go forward.

**CALFED Bay-Delta Program Programmatic Study Area
Overlapping BCDC Jurisdiction**



San Pablo Bay

Legend



CALFED ERPP Ecozones

Hillshade and Baylands underlays are from the San Francisco Estuary Institute's EcoAtlas (Present coverage). The areas in color (outlined in red) represent the approximate extent of BCDC jurisdiction. This is not intended for regulatory or legal use.

County boundaries are from USBR.



Viewed together, as CALFED must be, the many beneficial aspects of the Program to the Bay appear to outweigh the few potential negative aspects.

CALFED is a three-phase effort to develop a long-term solution to problems affecting the San Francisco Bay/Sacramento-San Joaquin Delta estuary (Bay-Delta) in northern California. CALFED identified four categories of problems: ecosystem quality, water quality, water supply reliability, and levee system vulnerability. These categories are addressed through the CALFED Ecosystem Restoration Program, Water Quality Program, Water Use Efficiency Program, Water Transfer Program, Levee System Integrity Program, Watershed Program, Water Storage and Delta Conveyance.

During Phase I, CALFED identified the problems it would attempt to solve, developed a mission statement and several guiding principles, and designed three alternative solutions (including 17 variations). Phase II consisted of an effort to narrow the range of alternatives, a broad-based environmental review of four remaining alternative solutions and identification of one Preferred Alternative. This programmatic federal consistency determination is based on the outcome of Phase II.

Four Phase II alternatives were analyzed in the Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR). Each of the alternatives includes 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 vary between the alternatives. The alternatives are described in detail in the Programmatic EIS/EIR Section 2, "Alternative Descriptions".

Phase III, which will involve project-level environmental reviews and approvals and implementation of the Preferred Alternative, will be executed in stages over 30 years or more. Stage I of the Program represents actions for the first 7 years. Proposed project-level actions under Phase III may require subsequent federal consistency determinations, as discussed in Section 5.0, "Next Steps". Phase III projects will be tiered from and be consistent with the Programmatic EIS/EIR, and will refer to the mitigation strategies and findings included in that document.

2.1 CALFED 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. Secondly, 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 streamflow, 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 will be established to provide water for protection and recovery of fish beyond water available through existing regulatory actions related to project operations.

2.2 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. Improvements in water quality will result in improved ecosystem health, with indirect improvements in water supply reliability. Improvements in water quality also

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 would 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.

2.3 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.

2.4 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.

2.5 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 would 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.

2.6 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 will 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.

2.7 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 which will be evaluated in Phase III, and if found feasible, could begin construction. Potential storage projects include:

- An in-Delta storage facility of approximately 250 TAF.
- Expansion of 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.
- Develop locally-managed and controlled groundwater and conjunctive use projects with a total of 500 TAF to 1 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 would continue to be used as appropriate to meet Program goals. All projects would be required to complete environmental reviews, and would be subject to all applicable permit requirements.

2.8 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 Alternative, which forms the basis for the consistency determination.

The Preferred Program Alternative employs a through-Delta approach to conveyance. Modifications in conveyance would 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 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 would 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 I-5 downstream to the San Joaquin River.

3.0 MANAGEMENT PROGRAM FOR THE SAN FRANCISCO BAY SEGMENT OF THE CALIFORNIA COASTAL ZONE

BCDC's management program for the San Francisco Bay segment of the California coastal zone consists primarily of the policies contained in the San Francisco Bay Plan, the Suisun Marsh Protection Plan, and the McAteer-Petris Act (the legislation that created BCDC).

3.1 SAN FRANCISCO BAY PLAN

The San Francisco Bay Plan (San Francisco Bay Conservation and Development Commission 1969) sets forth policies relevant to CALFED programmatic-level actions that may occur within San Francisco Bay. These policies are summarized below.

3.1.1. FISH AND WILDLIFE

- The benefits of fish and wildlife in the Bay should be ensured for present and future generations of Californians; therefore, to the greatest extent feasible, the remaining marshes and mudflats around the Bay, the remaining water volume and surface area of the Bay, and adequate freshwater inflow into the Bay should be maintained.
- Specific habitats that are needed to prevent the extinction of any species or to maintain or increase any species that would provide substantial public benefits should be protected, whether in the Bay or on the shoreline behind dikes.

3.1.2 WATER QUALITY

- To the greatest extent feasible, the area covered by Bay marshes and mudflats and the surface area and volume of Bay water should be maintained and, whenever possible, increased. Freshwater inflow to the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses. Polluting Bay waters should be avoided.

- Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay, as identified in the San Francisco Bay Regional Water Quality Control Board's basin plan.
- Shoreline projects should be properly designed and appropriate erosion control practices should be used during construction to reduce soil erosion and protect the Bay from increased sedimentation.
- Polluted runoff from projects should be controlled using BMPs to protect water quality and the beneficial uses of the Bay, especially where water dispersion is poor and the project is near shellfish beds or other significant biotic resources.

3.1.3 FRESHWATER INFLOW

- Freshwater diversions should not cause reduced inflows into the Bay to the extent that it damages the oxygen content of the Bay, reduces flushing of the Bay, or hinders the ability of the Bay to support existing wildlife.
- High priority should be given to the preservation of Suisun Marsh through adequate protective measures, including maintaining freshwater inflows.
- The impacts of upstream freshwater diversions on inflow to the Bay should be monitored by the California State Water Resources Control Board (SWRCB).

3.1.4 WATER SURFACE AREA AND VOLUME

- The surface area of the Bay and the total volume of water should be kept as large as possible to maximize active oxygen interchange, vigorous circulation, and effective tidal action. Filling and diking that reduce the surface area and volume of water should therefore be allowed only to provide substantial public benefits and only if there is no reasonable alternative.
- Water circulation in the Bay should be maintained and improved as much as possible. Any proposed fills, dikes, or piers should be thoroughly evaluated to determine their effects on water circulation and modified as necessary to improve circulation or, at least, minimize any harmful effects.

3.1.5 MARSHES AND MUDFLATS

- Salt marshes and mudflats should be maintained to the fullest extent possible to conserve fish and wildlife and to abate air and water pollution. Filling and diking that eliminate marshes and

mudflats should be allowed only to provide substantial public benefits and only if there is no reasonable alternative.

- Any proposed fills, dikes, or piers should be thoroughly evaluated to determine their effects on marshes and mudflats and modified as necessary to minimize any harmful effects.
- To offset possible additional losses from necessary filling and to augment the present marshes: (a) former marshes should be restored when possible by removing existing dikes; (b) in areas selected on the basis of competent ecological study, some new marshes should be created through carefully placed lifts of dredged spoils; and (c) the quality of existing marshes should be improved by appropriate measures whenever possible.

3.1.6 SALTPONDS AND OTHER MANAGED WETLANDS

- As long as is economically feasible, the salt production in saltponds and the present use of wetlands should be maintained. The integrity of the salt production system should be respected (i.e., public agencies should not take, for other projects, any pond or portion of the pond that is a vital part of the production system).

3.1.7 SHORELINE PROTECTION

- New shoreline erosion control projects and the maintenance or reconstruction of existing erosion control facilities should be authorized if: (a) the project is necessary to protect the shoreline from erosion, (b) the type of the protective structure is appropriate for the project site and the erosion conditions at the site, and (c) the project is properly designed and constructed.
- Riprap revetments should be constructed of properly sized and placed materials that meet sound engineering criteria.
- Authorized protective projects should be regularly maintained according to a long-term maintenance program to ensure that the shoreline will be protected from tidal erosion and that the effects of the necessary erosion control project on natural resources during the life of the project will be minimized.
- Shoreline protective projects should, where feasible, include provisions for nonstructural methods, such as marsh vegetation.

3.2 SUISUN MARSH PROTECTION PLAN

The Suisun Marsh Protection Plan (San Francisco Bay Conservation and Development Commission 1976) sets forth the following policies relevant to CALFED programmatic-level actions that may occur within Suisun Marsh.

3.2.1 Environment

- Habitat diversity in Suisun Marsh and the surrounding upland areas should be preserved and enhanced wherever possible to maintain the unique wildlife resources.
- The waterways, managed wetlands, tidal marshes, seasonal marshes, and lowland grasslands are critical habitats for marsh-related wildlife and are essential to the integrity of Suisun Marsh; therefore, these habitats deserve special protection.
- Existing uses should continue in the upland grasslands and cultivated areas surrounding the critical habitats of Suisun Marsh to protect the marsh and preserve valuable marsh-related wildlife habitats. Where feasible, the value of the upland grasslands and cultivated lands as habitat for marsh-related wildlife should be enhanced.
- The eucalyptus groves in and around Suisun Marsh, particularly those on Joice and Grizzly Islands, should not be disturbed.

3.2.2 WATER SUPPLY AND QUALITY

- Water quality standards in Suisun Marsh should be met by maintaining adequate inflows from the Delta.
- Projects designed to import or redistribute the fresh water in the marsh for salinity control should be planned carefully so that the expected benefits are realized. Any proposed import project should be studied to determine whether the project would adversely affect the marsh by encouraging urban and industrial growth in the marsh area. No import project should be constructed if the adverse environmental impacts of growth on the marsh would outweigh the possible beneficial impacts of salinity control.
- Groundwater to supplement surface flows may be used to prevent crop damage in some areas. Withdrawal of groundwater from the underground aquifers should not be so extensive as to allow the saltwater of the marsh to intrude into freshwater aquifers or to disrupt the natural subsurface flow of groundwater into the marsh.

- Disruption or impediments to runoff and streamflow in the Suisun Marsh watershed should not be permitted if either would result in adverse effects on the quality of water entering the marsh. Riparian vegetation in the immediate Suisun Marsh watershed should be preserved and stream modification permitted only if it is necessary to ensure the protection of life and existing structures from floods.
- Municipal, industrial, and agricultural discharges should be monitored to ensure that adequate water quality in Suisun Marsh is maintained.
- Existing and new agricultural drainage systems should meet all applicable State and federal water quality standards. All discharge permits for agricultural drains should be based on a thorough study of the effects of the outflow, flushing, and mixing patterns in Suisun Bay and Suisun Marsh to guarantee that no adverse impact on the marsh results from any discharge.
- Industrial facilities adjacent to or upstream of the marsh should not be developed if they have the potential to cause significant threats to water quality in the marsh. Activities at industrial facilities that could significantly alter the temperature, salinity, or turbidity of the water should be prohibited.

3.2.3 UTILITIES, FACILITIES, AND TRANSPORTATION

- Whenever construction occurs within wetlands, it should be confined to the dry months (generally mid-April through mid-October) to minimize disturbance of wetland vegetation, wintering migratory waterfowl, other water birds, or nesting resident birds.
- In water areas (bays and sloughs), dredging should be scheduled to avoid major fish migration periods.
- All plans for construction within the marsh should be reviewed by the California Department of Fish and Game (DFG) to ensure that impacts on marsh flora and fauna of construction methods and timing are minimized.
- Suisun channel dredging and any other dredging in marsh waterways should meet the following requirements: dredging should be for water-oriented uses or other important public purposes; the materials to be dredged should meet the water quality requirements of the San Francisco Bay RWQCB; and important marsh fisheries, wildlife, and their habitats should be protected.
- Dredged materials in the marsh should be disposed in nontidal areas where, consistent with policies of the Suisun Marsh Protection Plan, the materials can be used to help restore, enhance, or manage the marsh.

3.2.4 WATER-RELATED INDUSTRY

- The Collinsville site extends approximately 8 miles from the Sacramento River north to Little Honker Bay. The Collinsville site is only part of an extensive shoreline area fronting on deep water that extends from Collinsville to Rio Vista. This area, with approximately 12.5 lineal miles of deep water frontage, represents an important part of the total Bay Area inventory of water-related industrial sites. The western portion of the Collinsville site area may be restored or enhanced provided that the restoration or enhancement program is carried out in a manner that will not preclude use of the eastern portion of the Collinsville site for water-related industry and port use. Specifically, any wetland restoration should be designed to allow for development and operation of marine terminals and marine terminal berths on the deepwater shoreline and allow access for the movement of waterborne cargo, materials, and products from the shoreline terminal to the upland, eastern portions of the site.
- Remaining areas of lowland grassland and seasonal marsh on the Collinsville site should be preserved and, whenever possible, enhanced or restored for their intrinsic value as marsh-related wildlife habitat and to act as a buffer between the Suisun Marsh and industrial and port activities. Dredged materials may be used in any wetland enhancement or restoration program when such activity will be conducted without adverse environmental impacts on the marsh.

3.2.5 LAND USE AND MARSH MANAGEMENT

- Managed wetlands, tidal marshes, lowland grasses, and seasonal marshes should be included in a primary management area. Within the primary management area, existing uses should continue and both land and water areas should be protected and managed to enhance the quality and diversity of habitats.
- Tidal marshes in the primary management area should be preserved.
- The water management schedule developed by the U.S. Department of Agriculture Natural Resources Conservation Service and DFG and ratified by the Solano County Mosquito Abatement District should be used to the maximum extent possible in the managed wetlands.
- Burning in the primary management area should be kept to a minimum to prevent uncontrolled fires that might destroy beneficial plant species and damage peat leaves and to minimize air pollution.
- Water should be impounded to create or maintain a permanent pond only under the following situations: in deep ponds that are difficult to drain and manage as seasonally flooded marshes, in limited shallow areas where habitat diversity is desired, and in areas of high salinity

concentrations. Water levels in permanent ponds should be kept constant and water circulated to control mosquitos.

- The upland grasslands and cultivated lands surrounding the marsh should be included in a secondary management area. The secondary management area should function as a buffer, insulating the habitats within the primary management area from adverse impacts of urban development, other land uses, and land practices incompatible with preservation of the marsh.
- Wetland resources on portions of the Collinsville site may be enhanced or restored consistent with Suisun Marsh Protection Plan policies on water-related industries.
- Where feasible, historical marshes should be returned to wetland status, whether as tidal marshes or managed wetlands.
- Any proposed development in the Suisun Marsh watershed or secondary management area where there are poor soil conditions for construction or that is seismically active should be controlled to prevent or minimize earth disturbance, erosion, water pollution, and hazards to public safety.
- Riparian vegetation in the immediate Suisun Marsh watershed should be preserved because of its importance in maintaining water quality and its value as marsh-related wildlife habitat. Stream modification should be permitted only if proven necessary to ensure the protection of life and existing structures from floods and only the minimum amount of modification necessary should be allowed.

3.3 MCATEER-PETRIS ACT

The McAteer-Petris Act (Sections 66600 et seq. California Government Code) sets forth the following policies relevant to CALFED programmatic-level actions that may involve placing fill; extracting materials; or changing the use of any land, water, or structure within the area of BCDC's jurisdiction:

- Further filling of the San Francisco Bay and specific waterways should be authorized only when public benefits from fill clearly exceed public detriment from the loss of the water areas and should be limited to water-oriented uses, such as ports, water-related industries, airports, bridges, wildlife refuges, water-oriented recreation and public assembly, water intake and discharge lines for desalinization and power-generating plants requiring large amounts of water for cooling purposes, or minor fill for improving shoreline appearance or public access to the Bay.
- Fill in the Bay and specific waterways should be authorized only when no alternative upland location is available for such purpose.

- The water area authorized to be filled should be the minimum necessary to satisfy the purpose of the fill.
- Priority use areas should be protected, and maximum feasible public access should be provided with proposed projects.
- The nature, location, and extent of any fill should be such that harmful effects on the Bay Area, such as the reduction or impairment of the volume, surface area, or circulation of water; water quality; fertility of marshes; or fish or wildlife resources, would be minimized.
- Public health, safety, and welfare require that fill be constructed in accordance with sound safety standards that will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood- or stormwaters.
- Fill should be authorized when it would, to the maximum extent feasible, establish a permanent shoreline.

The term "specific waterways" refers to all areas subject to tidal action on or tributary to the listed portions of the following waterways: (1) Plummer Creek in Alameda County to the eastern limit of the saltponds; (2) Coyote Creek (and branches) in Alameda and Santa Clara Counties to the easternmost point of Newby Island; (3) Redwood Creek in San Mateo County to its confluence with Smith Slough; (4) Tolay Creek in Sonoma County to the northerly line of Sears Point Road (State Route 37); (5) Petaluma River in Marin and Sonoma Counties to its confluence with Adobe Creek, and San Antonio Creek to the easterly line of the Northwestern Pacific Railroad right-of-way; (6) Napa River to the northernmost point of Bull Island; (7) Sonoma Creek to its confluence with Second Napa Slough; (8) Corte Madera Creek in Marin County to the downstream end of the concrete channel on Corte Madera Creek, which is located at USACE Station No. 318+50 on the Corte Madera Creek Flood Control Project.

4.0 PROGRAMMATIC DETERMINATION OF FEDERAL CONSISTENCY

This federal consistency determination consists of a general programmatic-level assessment of the CALFED Preferred Alternative, which comprises eight elements (Ecosystem Restoration Program, Water Quality Program, Water Use Efficiency Program, Water Transfer Program, Levee System Integrity Program, Watershed Program, Storage and Conveyance). This consistency determination begins by describing the programmatic actions in each of these programs that may affect San Francisco Bay or Suisun Marsh, then summarizes the programmatic consistency of those five programs with relevant policies contained in the San Francisco Bay Plan, the Suisun Marsh Protection Plan, and the McAteer-Petris Act.

4.1 PROGRAMMATIC ACTIONS IN THE CALFED PREFERRED ALTERNATIVE THAT MAY AFFECT SAN FRANCISCO BAY OR SUISUN MARSH

4.1.1 CALFED ECOSYSTEM RESTORATION PROGRAM

The Ecosystem Restoration Program is likely to directly affect the coastal zone resources within the jurisdiction of BCDC because its geographic sphere includes Suisun Marsh and portions of San Francisco Bay. The Suisun Marsh/North San Francisco Bay Ecological Zone is the westernmost zone described in the ERP and consists of five ecological units: Suisun Bay and Marsh, Napa River, Sonoma Creek, Petaluma River, and San Pablo Bay.

The overall CALFED vision for the Suisun Marsh/North San Francisco Bay Ecological Zone includes providing a more natural freshwater outflow pattern from the Delta in dry and normal rainfall years, restoring tidal and nontidal wetlands, restoring tidal perennial aquatic habitat, and screening unscreened and poorly screened diversions. These changes will assist in the recovery of special-status species and increase important fish, wildlife, and plant communities.

Within the Suisun Bay and Marsh Ecological Unit of this zone, ERP actions focus on restoring tidal action to selected managed wetlands and promoting the natural riparian and wetland succession in Suisun Marsh. Shallow-water, wetland, and riparian habitats in Suisun Marsh and along the shoreline of Suisun Bay will be protected and improved, where possible. Brackish marsh areas will be restored and protected. Upland habitats adjacent to riparian and wetland habitats also will be protected and improved. Efforts will focus on increasing the acreage open to tidal flows (e.g., by removing or opening levees) and providing connectivity between habitat areas to aid in the recovery of species such as the salt marsh harvest mouse, clapper rail, and black rail. Aquatic species, including chinook salmon, striped bass, delta smelt, splittail, and other estuarine resident fish in Suisun Marsh and Suisun Bay, will benefit from improving Suisun Marsh and the slough habitats.

Diverting water from Suisun Marsh channels for use in managed nontidal wetlands will continue, as will operation of the salinity control structure on Montezuma Slough; however, consideration for maintaining the natural hydrologic regime and salinity levels of the slough and marsh will be incorporated into these actions. Entrainment of juvenile fish will be minimized through efforts to screen diversions. Existing water quality standards will be met in the marsh.

Suisun Marsh and Suisun Bay will function as high-quality spawning and rearing habitat and an effective fish migration corridor. A healthy Suisun Marsh-Bay ecosystem will be an important link in the estuary foodweb, improving primary and secondary productivity. Suisun Marsh and Bay productivity will improve as freshwater inflows in dry and normal years and the acreages of tidal wetlands and associated tidal and perennial aquatic habitats increase.

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. Restoring tidal action will improve water quality and enhance the health of the marsh, which will aid in the recovery and enhancement of terrestrial and aquatic species.

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. Opening leveed managed marshland to tidal action will create larger, more contiguous marsh areas to support terrestrial and aquatic habitats.

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.

4.1.2 CALFED WATER QUALITY PROGRAM

The principal objective of the CALFED Water Quality Program is to provide high-quality water for urban, agricultural, industrial, environmental, and recreational beneficial uses. The Water Quality Program has developed strategies to address water quality problems in the Delta and its tributaries. Action strategies include source control measures (such as BMP's) treatment measures, and land fallowing and land retirement programs, water recycling, source water blending, and groundwater storage programs.

The legally defined Delta, Suisun Bay to Carquinez Strait, and Suisun Marsh compose the primary geographic focus of the Water Quality Program; however, because areas outside the Delta are sources of water quality problems that affect the Delta, its inhabitant species, and users of Delta water, the Water Quality Program recommends that actions be taken throughout the entire geographic solution area as necessary. This area encompasses a large portion of California, and includes all of the areas within BCDC's jurisdiction.

4.1.3 CALFED WATER USE EFFICIENCY PROGRAM

The CALFED Water Use Efficiency Program does not describe any specific actions that would directly affect coastal resources within the San Francisco Bay segment of the California coastal zone; however, increases in the efficiency of water use have the potential to beneficially affect water resources across the Bay and Delta Regions.

4.1.4 CALFED WATER TRANSFER PROGRAM

The Water Transfer Program does not include any actions that would directly affect coastal resources within the San Francisco Bay portion of the coastal zone, e.g. water would not be transferred from coastal zone areas to other areas. Redistribution of water among users could indirectly affect the Bay through changes in water distribution schedules. The total amount of water transferred and exported that would otherwise have been Delta outflow is likely to be extremely small compared to total outflows.

However, it is not possible to accurately estimate at the current programmatic level the degree to which redistribution among users would occur.

4.1.5 CALFED LEVEE SYSTEM INTEGRITY PROGRAM

The CALFED Levee System Integrity Program, while mostly focused on Delta actions, includes an investigation to determine the feasibility of CALFED participation in the rehabilitation of Suisun Marsh levees. Rehabilitation of levees could include reconstructing portions of the levees, expanding bases of the levees and engineering techniques that reduce erosion and susceptibility to seepage and subsidence. Most levee work is carried out on the landward side, to avoid impacts to waterways. Levee actions would coordinate with ERP actions to enhance the ecosystem while increasing levee protection, when feasible. While landward-side levee work could reduce managed wetlands, ERP actions associated with this work would more than offset any such impacts by creating new shallow-water habitat. If dredging were chosen as a method of providing materials for levee reconstruction, waterside impacts could result. However, dredging is subject to permits and permit conditions which would prohibit dredging unless very stringent environmental criteria were met. At this time, it is not possible to predict the source of materials for potential levee work.

4.1.6 CALFED WATERSHED PROGRAM

Activities associated with the Watershed Program would mostly occur in the upper reaches of Bay-Delta tributaries, and would not directly impact areas in BCDC's jurisdiction. Upstream watershed improvements in Bay tributary streams could result in positive benefits to Bay water quality. While the primary focus of the Program is on upstream areas, funding could be provided to community-based watershed groups which work within BCDC's jurisdiction. Projects undertaken by such groups can include education and outreach, streamflow enhancements, biodiversity maintenance and improvement, and watershed training for local government.

4.1.7 CALFED STORAGE ELEMENT

Any new storage could change Delta outflow, but variations would not be significant compared to current outflows. 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 would reduce annual Delta outflows by 340-700 TAF (2.3% to 4.7%), out of a total average outflow of 14.8 MAF.

Greater seawater intrusion into the Bay could occur, with increases in salinity. The Preferred Program Alternative would increase the average monthly X2 position by about .6 km in September, and may increase or decrease the average monthly X2 position by about .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. This question would be studied during the environmental reviews for any specific storage project.

New storage dedicated to environmental water supplies could enhance seasonal flow for biological communities and species in the Bay. One option for EWA water stored in the Delta is that it can be left to provide increased Delta outflow.

4.1.8 CALFED CONVEYANCE ELEMENT

The Preferred Program Alternative provides for a through-Delta water conveyance plan. No actions are contemplated within the San Francisco Bay portion of the coastal zone. The Bay region could be affected by reduced Delta outflow, but any reduction would be very slight compared to total annual outflows to the Bay (see 4.1.7 above). Potential impacts of any flow reductions would be studied at the time environmental reviews would be carried out for new conveyance projects.

4.2 DETERMINATION OF PROGRAMMATIC CONSISTENCY

Table 1 summarizes the consistency of the CALFED Preferred Alternative with the San Francisco Bay Plan, the Suisun Marsh Protection Plan, and the McAteer-Petris Act and indicates that the Preferred Alternative is consistent with these policies at a programmatic level.

This section provides a more detailed description of the consistency of the CALFED Preferred Alternative with these policies and provides information supporting this conclusion. Because the Preferred Alternative is defined in programmatic terms, its consistency has been determined by comparing its actions with the policies listed in Section 3.0, "Management Program for the San Francisco Bay Segment of the California Coastal Zone", where possible. The consistency of the Preferred Alternative with specific policies could not be determined at the programmatic level because sufficient detail about actions contained in the Preferred Alternative is not yet available. The following determination of consistency is organized by the eight elements of the CALFED Preferred Alternative for ease of understanding, but it should be noted that the Preferred Alternative must be judged as a whole rather than as individual pieces.

4.2.1 ECOSYSTEM RESTORATION PROGRAM

Table 2 lists the programmatic actions contained in the ERP that are designed to achieve CALFED's objectives in the Suisun Marsh/North San Francisco Bay Ecological Zone and indicates the consistency of each action with BCDC's policies.

The CALFED Ecosystem Restoration Program is consistent at a programmatic level with the San Francisco Bay Plan's policies regarding fish and wildlife, water quality, freshwater inflow, water surface

Table 1. Summary of Consistency of the CALFED Preferred Alternative with BCDC Policies

	Ecosystem Restoration Program	Water Quality Program	Water Use Efficiency Program	Levee System Integrity Program	Storage/ Conveyance
San Francisco Bay Plan					
Fish and wildlife	Consistent	Consistent	Not directly applicable Potential indirect beneficial effects	Not applicable	Consistency cannot be determined at program-level
Water quality	Consistent	Consistent	Not directly applicable Potential indirect beneficial effects	Not applicable	Consistency cannot be determined at program-level
Freshwater inflow	Consistent	Consistent	Not applicable	Consistent	Consistency cannot be determined at program-level
Water surface area/volume	Consistent	Consistent	Not applicable	Not applicable	Not applicable
Marshes and mudflats	Consistent	Consistent	Not applicable	Not applicable	Consistency cannot be determined at program-level
Shoreline effects	Consistency cannot be determined at program-level	Consistency cannot be determined at program-level	Not applicable	Not applicable	Consistency cannot be determined at program-level

A-000948

A-000948

Table 1. Continued

	Ecosystem Restoration Program	Water Quality Program	Water Use Efficiency Program	Levee System Integrity Program	Storage/ Conveyance
Suisun Marsh Protection Plan					
Environment	Consistent	Consistent	Not directly applicable Potential indirect beneficial impacts	Consistent	Not applicable
Water supply and quality	Consistent	Consistent	Not directly applicable Potential indirect beneficial impacts	Not applicable	Consistency cannot be determined at program-level
Utilities/facilities/ transportation	Consistency determined at project level	Consistency determined at project level	Not applicable	Not applicable	Not applicable
Water-related industry	Consistency determined at project level	Consistency determined at project level	Not applicable	Not applicable	Not applicable
Land use/marsh management	Consistent	Consistent	Not applicable	Not applicable	Not applicable
McAteer-Petris Act	Consistency cannot be determined at program level	Consistency cannot be determined at program level	Not applicable	Not applicable	Not applicable

Table 2. Consistency of ERP Programmatic Actions with BCDC Policies

Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
Central Valley streamflow	As ecosystem improvements increase spring and summer flows from upstream areas into reservoirs, develop a cooperative program to allow these flows to pass downstream into and through the Delta. (This action would result from recommendations for spring flow events and minimum flows from upstream ecological zones)	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Natural floodplain and flood processes	Convert leveed lands to tidal wetland/slough complexes.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Bay-Delta aquatic foodweb	Actions described to restore streamflow, floodplains, tidal wetlands and sloughs, and riparian habitat would increase primary and secondary productivity in the Suisun and North San Francisco Bay areas.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Tidal perennial aquatic	Develop a cooperative program to acquire and restore 1,500 acres of shallow-water habitat in the Suisun Bay and Marsh Ecological Unit.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
	Develop a cooperative program to evaluate the feasibility of restoring shallow-water habitat in the San Pablo Bay Ecological Unit.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Nontidal perennial aquatic	Develop a cooperative program to acquire and develop 400 acres of deeper open-water areas in restored saline emergent wetland habitats in the Suisun Bay Ecological Unit.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
	Develop a cooperative program to acquire and develop 400 acres of deeper open-water areas in restored saline emergent wetland habitats in both the Sonoma Creek and Petaluma River Ecological Units.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.

A-000950

A-000950

Table 2. Continued

Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
Saline emergent wetland	Develop 1,600 acres (includes above two actions) of deeper open-water areas to provide resting habitat for water birds, foraging habitat for diving ducks and other water birds that feed in deep water.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Seasonal wetland	Develop a cooperative program to acquire, in fee-title or through a conservation easement, 7,500-12,000 acres for tidal restoration, and complete the needed steps to restore the wetlands to tidal action.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
	Support the cooperative program to improve management of up to 26,000 acres of degraded seasonal wetland habitat in the Suisun Bay and Marsh Ecological Unit. Support the development of a cooperative program to improve management of up to 32,000 acres of existing seasonal wetland habitat in the Suisun Bay and Marsh Ecological Unit.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
	Develop a cooperative program to acquire, in fee-title or through a conservation easement, 1,000-1,500 acres of existing farmed baylands and restore tidal action.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
	Develop a cooperative program to acquire 100 acres of vernal pools and 500 to 1,000 acres of adjacent buffer areas (buffers could be in any category).	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
	Protect 6,200 acres of existing saline emergent wetlands in the Suisun Bay and Marsh Ecological Management Zone.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Tidal Sloughs	Restore slough habitat for fish and associated wildlife species. Restore 35 miles of slough habitat in the near-term, and 70 miles of slough habitat in the long-term.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.

A-000951

A-000951

Table 2. Continued

Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
Riparian and riverine aquatic	Coordinate with landowners and managers to restore and maintain 10 to 15 linear miles of riparian habitat along corridors of riparian scrub and shrub vegetation in each of the ecological units, of which 60% is more than 15 yards wide and 25% is no less than 5 yards wide and 1 mile long.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Perennial grassland	Develop a cooperative program to restore 5,000 acres of perennial grasslands by acquiring conservation easements or purchasing land from willing sellers.	Programmatically consistent with policies regarding fish and wildlife, freshwater inflow, water quality, and wetlands. Project-level consistency determination for policies pertaining to construction, dredging and fill activities.
Delta smelt	Restoration of delta smelt will come indirectly from increasing March to May Delta inflow and outflow, improving Delta water temperature, improving Delta channel hydraulics, improving the Delta aquatic foodweb, improving aquatic wetland, and riparian habitats, and reducing stressors including effects of water diversions and contaminants.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Longfin smelt	Restoration of longfin smelt will come indirectly from: improved Delta inflow and outflow, improving the Delta aquatic foodweb, improving aquatic wetland, and riparian habitats, and reducing stressors including the effects of water diversions and contaminants.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Splittail	Restoration of splittail will come indirectly from higher late-winter Delta inflow, improving the Delta aquatic foodweb, improving aquatic wetland, and riparian habitats, and reducing stressors including effects of water diversions and contaminants.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Sturgeon, green and white	Sturgeon restoration will come indirectly from increased streamflows, improving the Delta aquatic foodweb, and reducing stressors including effects of water diversions and contaminants.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Chinook salmon (general)	Chinook salmon population restoration will come indirectly from increasing late winter and spring Delta inflow and outflow, improving Delta channel hydraulics, improving the Delta aquatic foodweb, increasing shallow water, riparian, and wetland habitats in the Delta, and reducing stressors including effects of water diversions and contaminants.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.

A-000952

A-000952

Table 2. Continued

Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
Striped bass	Restoring striped bass will come indirectly from increasing late winter and spring Delta inflow and outflow, improving Delta channel hydraulics, improving the Delta aquatic foodweb, increasing shallow water, riparian, and wetland habitats in the Delta, and reducing stressors including effects of water diversions and contaminants.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
American shad	Restoration of American shad populations will come indirectly from increasing spring fresh water inflow to the Bay-Delta and improving the Delta aquatic foodweb.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Resident fish species	Restoration of native resident species will come from improved aquatic habitats and foodweb	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Marine/estuarine fishes and large invertebrates	General programmatic actions that will contribute to the target include improving winter/spring Delta outflow, restoring tidal wetland habitat, improving the aquatic foodweb, reducing losses of larvae and juvenile marine/estuarine fishes at water diversions in the Bay and Delta, limiting the introductions of non-native species, and reducing the input of toxic substances into Central Valley waterways.	Programmatically consistent with fish and wildlife policies, freshwater inflow policies, and water quality policies.
Swainson's hawk	Restore riparian woodlands and improve wildlife habitat values on agricultural lands. (Note: Please refer to the implementation objectives, targets and programmatic actions in the Habitat section of the Sacramento-San Joaquin Delta Ecological Zone for acreages and general areas for restoration of riparian, perennial grassland, and agricultural lands.)	Programmatically consistent with wildlife policies.
California clapper rail	Restoring tidal emergent wetland habitat would indirectly benefit California clapper rail population.	Programmatically consistent with wildlife policies.
California black rail	Restoring tidal emergent wetland habitat would indirectly benefit California black rail population.	Programmatically consistent with wildlife policies.
Suisun song sparrow	Restoring tidal wetlands and improved riparian habitat will benefit this species.	Programmatically consistent with wildlife policies.

A-000953

Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
Giant garter snake and western pond turtle	Restoration of new habitats in historical wetlands, grasslands, and upland areas will aid in the recovery of these species.	Programmatically consistent with wildlife policies.
Lange's metalmark, delta green ground beetle, VELB	Habitat restoration will contribute to the recovery of these species.	Programmatically consistent with wildlife policies.
Salt marsh harvest mouse	Restoring salt marsh habitat in San Pablo and Suisun Bays and adjacent marshes, and new and improved salt marsh habitat in the north Bay and adjacent marshes will help in recovery of this species.	Programmatically consistent with wildlife policies.
Shorebird and wading bird guild	Shorebirds and wading birds will indirectly benefit from restoration of wetlands and tidal and non-tidal perennial aquatic habitat.	Programmatically consistent with wildlife policies.
Waterfowl	Waterfowl will indirectly benefit from restoring sloughs, wetlands, riparian, and tidal and non-tidal perennial aquatic habitat.	Programmatically consistent with wildlife policies.
Water diversion	Develop a cooperative program to consolidate, screen, or eliminate diversions in the Suisun Marsh/North San Francisco Bay Ecological Zone.	Programmatically consistent with fish and wildlife policies.
Invasive aquatic plants	Conduct large-scale, annual weed eradication programs throughout existing and restored dead-end and open-end sloughs and channels in each ecological unit so that less than 1% of the surface area of these sloughs and channels is covered by invasive non-native aquatic plants within 10 years.	Programmatically consistent with fish and wildlife, and general environmental policies.
Invasive riparian and salt marsh plants	Develop a cooperative program to remove and suppress invasive non-native plants that compete with native riparian vegetation by reducing the area occupied by these species (such as giant reed and eucalyptus) by 50%.	Programmatically consistent with fish and wildlife, and general environmental policies.
	Develop a cooperative approach to develop control measures for perennial pepperweed.	Programmatically consistent with fish and wildlife, and general environmental policies.
	Develop a cooperative program to eliminate invasive woody plants from restoration sites to protect native riparian vegetation.	Programmatically consistent with fish and wildlife, and general environmental policies.
Invasive aquatic organisms	Fund additional inspection staff to enforce existing regulations.	Programmatically consistent with fish and wildlife, and general environmental policies.

A-000954

A-000954

Table 2. Continued

Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
	Help fund research on ballast water treatment techniques that could eliminate non-native species before ballast water is released.	Programmatically consistent with fish and wildlife, and general environmental policies.
	Provide funding to the California Department of Food and Agriculture to expand or establish, as appropriate, a comprehensive program to exclude, detect, and manage invasive aquatic species such as zebra mussel, purple loosestrife, and hydrilla.	Programmatically consistent with fish and wildlife, and general environmental policies.
Predation and competition	Limit striped bass supplementation to life stages that minimize predation on juvenile anadromous and estuarine fish.	Programmatically consistent with fish and wildlife policies.
	Cooperatively develop an ecologically based approach to limit striped bass and chinook salmon stocking in the Bay to areas and periods that will not increase predation rates on special-status species, such as longfin smelt and delta smelt, and other native fishes.	Programmatically consistent with fish and wildlife policies.
Contaminants	Reduce the impacts of herbicides, pesticides, fumigants and other agents toxic to fish and wildlife in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	Programmatically consistent with water quality policies.
Harvest of fish and wildlife	Provide additional funding to California Department of Fish and Game (DFG) for additional enforcement.	Programmatically consistent with fish and wildlife policies.
	Provide additional funding to county sheriff's departments and State and local park agencies to support additional enforcement efforts.	Programmatically consistent with fish and wildlife policies.
	Provide rewards for the arrest and conviction of poachers, and develop and implement a public outreach/education program regarding the illegal harvest.	Programmatically consistent with fish and wildlife policies.
Disturbance	Develop a cooperative program with local agencies to establish and enforce zones prohibiting boat wakes within 50 yards of California black rail nesting areas in Suisun Marsh and San Francisco Bay from March to June.	Programmatically consistent with fish and wildlife policies.

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Ecosystem Element	Programmatic Action	Programmatic Federal Consistency Determination
	Develop a cooperative program with local agencies to establish and enforce zones prohibiting motorized boats in 5 miles of dead-end channels in Suisun Marsh and San Francisco Bay from March to June	Programmatically consistent with fish and wildlife policies.
	Develop a cooperative program with local agencies to establish and enforce zones prohibiting motorized boats in new, small channels in restored tidal fresh emergent wetlands	Programmatically consistent with fish and wildlife policies.

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area and volume, marshes and mudflats, and saltponds and other managed wetlands described above. The determination of consistency with shoreline effects must be made at the project level because these policies are fairly project specific. Specific mitigation measures for potential impacts, such as siltation during construction, will also be addressed at the project level.

The Ecosystem Restoration Program is consistent at a programmatic level with the Suisun Marsh Protection Plan policies pertaining to environment, water supply and quality, and land use and marsh management. The policies regarding utilities, facilities, and transportation are project specific and future consistency determinations on these policies will be provided at the project level. Additionally, it is too speculative at a programmatic level to assess consistency with the policies regarding water-related industry because there are no project-specific actions now planned near the Collinsville site. A consistency determination related to these policies will be made, as appropriate, at the project level in the event that restoration or enhancement actions are proposed at the Collinsville site.

The McAteer-Petris Act policies pertain primarily to dredging and fill activities in the San Francisco Bay area. The Ecosystem Restoration Program is consistent at a programmatic level with the policies that state that further filling in the San Francisco Bay area should be for water-oriented uses (e.g., wildlife) and that the nature, location, and extent of any fill should minimize harmful effects on water and wildlife resources in the San Francisco Bay area. Actions under the Ecosystem Restoration Program involving fill would be designed to enhance wildlife and aquatic resources; however, as with other policies in the San Francisco Bay Plan and the Suisun Marsh Protection Plan, more detailed assessment of consistency with these policies is appropriately determined at the project level (e.g., construction in accordance with safety standards).

Under BCDC's statutes, there are three coastal resource areas for which the effects of CALFED actions must be identified: vegetation and wildlife, water quality, and water inflow/quantity. The effects of implementing ERP actions on these three resource areas are described below. Where there is the potential for significant adverse impacts resulting from implementation of the CALFED programmatic actions, these impacts, as well as potential mitigation measures, are discussed.

4.2.1.1 BENEFICIAL EFFECTS ON VEGETATION AND WILDLIFE. Implementing ERP actions would result in beneficial effects on vegetation and wildlife as a result of the restoration of aquatic habitat and adjacent communities, including riparian, shallow-water, and tidal marsh habitats. Other beneficial effects will result from actions (including establishing dredging guidelines, implementing plans to reduce erosion attributable to boat wakes, reducing input of contaminants upstream and in San Francisco Bay) that reduce stresses on the processes and structure of those communities. The Environmental Water Account (EWA) will provide instream flows when they are critical for flow-dependent species. Primary beneficial effects include restored sediment supply and movement processes; restored natural structural characteristics of the San Francisco Bay system; and restored biological productivity through increased production, reduced stress on production processes, and increased input of organic carbon.

Additionally, reoperation of reservoir and diversion facilities may provide Delta outflows that protect and enhance the ecological functions and processes that operate within the Bay. Flow changes

could benefit all Bay species. Beneficial impacts on species include increases in the abundance of spawning and rearing habitat and increases in species survival as a result of reductions in levels of contaminants and potential increases in the availability of food.

Implementing ERP actions is expected to result in the following beneficial effects:

- **Increase in Open-Water and Wetland Habitat Area.** Implementing ERP actions would substantially increase the area of wetland habitats in the Bay Region, including brackish water habitat in Suisun Marsh. Specific benefits would include increased availability of suitable breeding and/or foraging habitat for waterfowl and water birds, shorebirds, and wading birds dependent on the Delta.
- **Increase in Riparian Communities.** Implementing ERP actions would substantially increase the area of riparian habitats in the Bay Region. Specific benefits would include increased availability of suitable breeding and/or foraging habitat for a number of birds, mammals, reptiles, and amphibians.
- **Improved Wetland Habitat Quality.** Implementing ERP actions would improve the quality of as many as 14,000 acres of existing degraded diked saline emergent and seasonal wetland habitat areas. Approximately 81 species of wildlife in the Bay Region could benefit.
- **Improved Habitat Patterns.** Implementing ERP actions would create a historical pattern of open-water, wetland, riparian, and grassland habitats in the Bay Region. Restoring wetlands near agricultural lands would create a pattern that could potentially increase the distribution of Bay Region wildlife.
- **Improved Connectivity of Riparian Habitat.** Implementing ERP actions would restore up to approximately 60 miles of riparian habitat along channels and sloughs. Restoring habitat would increase the connectivity between existing fragmented riparian areas in the Bay Region.
- **Increase in Habitats for Special-Status Species.** Aquatic, riparian, and some grassland habitats would be improved as a result of implementing ERP. Special-status species would benefit from these habitat improvements.
- **Expansion of Rare Natural Communities and Significant Natural Areas.** The increase in quantity, quality, and connectivity of aquatic, riparian, and grassland habitats through implementation of the ERP would provide similar increases in most of the Bay Region's rare natural communities and significant natural areas.

4.2.1.2 BENEFICIAL EFFECTS ON FRESHWATER INFLOWS. Implementing ERP actions would also have beneficial effects on freshwater inflows to San Francisco Bay, Suisun Marsh, and Suisun Bay. One of the fundamental objectives of the ERP is to restore basic hydrologic conditions to Central Valley

streamflows to reactivate and maintain ecological processes that create and sustain habitat required for healthy fish, wildlife, and plant populations. The CALFED programmatic action to implement this objective is to develop a cooperative program to provide target flows in dry and normal years by allowing inflows to major storage reservoirs to pass downstream into and through the Delta. To further this goal, the Environmental Water Account will be used to provide instream flows at critical times for flow-dependent species. Although intended primarily to benefit in-Delta fisheries, EWA water could provide water quality benefits to the Bay by increasing Delta outflows. Restoring freshwater flows into the Suisun Marsh/North San Francisco Bay Ecological Zone consistent with natural hydrologic conditions in the Bay-Delta watershed will help restore fundamental ecosystem processes and functions for the north Bay's aquatic and wetland resources.

4.2.1.3 POTENTIALLY SIGNIFICANT ADVERSE IMPACTS/MITIGATION MEASURES RELATED TO VEGETATION AND WILDLIFE. Implementing the ERP could result in the temporary loss or degradation of wetland and riparian communities during construction, although the ultimate aim of the program is to significantly improve habitats in the Bay Region. This potential impact is considered significant because temporary decreases in the area of and disturbance to these communities could adversely affect approximately 82 species of wildlife associated with wetlands and 114 species of wildlife associated with riparian habitat in the Bay Region (including Suisun Marsh and Bay and northern San Pablo Bay). Potential mitigation strategies for reducing temporary impacts on wetland and riparian communities could include avoiding wetland and riparian habitats, creating wetland and riparian habitats in nonwetland/riparian habitat areas to offset temporary habitat losses, and restoring disturbed wetland and riparian vegetation immediately following construction activities.

4.2.1.4 POTENTIALLY SIGNIFICANT ADVERSE IMPACTS/MITIGATION MEASURES RELATED TO WATER QUALITY. The ERP involves restoration of approximately 150,000 acres of terrestrial and aquatic wildlife habitat. Up to 22,000 acres of the restored habitat could be created in the Bay Region, particularly in the Suisun Marsh and North Bay (see Table 2). Two categories of potential effects on water quality are associated with implementing ERP programmatic actions: immediate water quality impacts resulting from construction activities and long-term water quality impacts.

Habitat restoration would involve large-scale construction operations affecting considerable areas of land and water. Large-scale construction activities could have adverse effects on water quality. Construction activities in waterways could greatly increase local water turbidity and, depending on the source of the material used for levee construction, could cause the release of nutrients, natural organic matter, and toxicants into the water column. Construction in areas of dry land could result in similar substances being washed into waterways during storms and other periods of high flow. Short-term local adverse changes in water quality in the immediate vicinity of construction sites can be expected, but it is not expected that regional-level water quality or beneficial uses would be affected by construction activities.

Implementing ERP actions would improve long-term water quality in a number of areas. Land conversion from agricultural uses to wildlife habitat in the Bay Region, particularly lands adjacent to Suisun Bay and Marsh, San Pablo Bay, the Napa and Petaluma Rivers, and Sonoma Creek, would reduce

discharges of soil particles, nutrients, and pesticides into the waters of the Bay-Delta system, resulting in a beneficial effect on instream water quality. The input of salts would remain about the same as under existing conditions, although salt concentrations in Delta channels and other waterways would increase as a result of increased evaporation rates on Delta islands converted to year-round wetland habitats. It is not yet known whether total organic carbon (TOC) discharges would increase or decrease as a result of habitat restoration. If TOC discharges increase, then the TOC content of Delta waters would rise, making them less suitable as a source of drinking water. Restoration of riparian corridors and emergent wetlands would increase shading of water surface. Water temperatures in small tributary streams would decrease. The exclusion of livestock from riparian areas may reduce the microbial content of stream waters and increase their suitability for water-contact recreation and as a raw water supply source.

Large-scale construction activities will be chosen to minimize adverse environmental impacts. Any short-term adverse changes in water quality are expected to be less than significant because they would be temporary, reversible, and local.

A potential long-term adverse water quality effect of ERP could be an increase in water salinity attributable to increased evaporation where agricultural croplands are converted to wildlife habitat; however, salinity could also be decreased on these lands due to reduction or elimination of salts applied through fertilizers. Also, long-term water quality benefits would result from the decreased discharge of nutrients and pesticides to the waters of the Bay-Delta system.

If conversion of agricultural land into aquatic habitat increases the TOC content of Bay-Delta system waters, the suitability of this water for use as drinking water would decrease and the cost of water treatment would increase; however, any adverse effects could be mitigated by locating at least some aquatic habitat restoration projects in areas where increases in TOC discharges would not affect drinking water diversions or by treatment of peat soils to reduce TOC discharges.

4.2.2 WATER QUALITY PROGRAM

The Water Quality Program is programmatically consistent with the water quality policies of the San Francisco Bay Plan and the Suisun Marsh Protection Plan. The source controls (e.g., BMPs) and treatment methods described in the program are designed to address water quality problems in the Delta associated with urban and industrial runoff, municipal and industrial wastewater, and agricultural drainage. These actions will have beneficial effects on water quality. The policies of the McAtter-Petris Act do not apply to this program because fill activities in the San Francisco Bay area are not being contemplated as a part of this program.

4.2.3 WATER USE EFFICIENCY PROGRAM

The Water Use Efficiency Program is programmatically consistent with the policies of the San Francisco Bay Plan and the Suisun Marsh Protection Plan. Although no specific actions are proposed that

would directly affect coastal zone resources within the jurisdiction of BCDC, local efforts designed to increase water use efficiency are expected to have beneficial effects on water resources. The polices of the McAteer-Petris Act do not apply to this program because fill activities in the San Francisco Bay area are not being contemplated as a part of this program.

4.2.4 WATER TRANSFER PROGRAM

The Water Transfer Program consists of administrative actions that would not directly affect areas within the jurisdiction of the BCDC. Changes in flow amount from the Program would not likely be significant (see Section 4.1.4). Thus, the Program would be consistent with the San Francisco Bay Plan and the Suisun Marsh Protection Plan. The polices of the McAteer-Petris Act do not apply to this program because fill activities in the San Francisco Bay area are not being contemplated as a part of this program.

4.2.5 LEVEE SYSTEM INTEGRITY PROGRAM

The current Levee System Integrity Program includes work only in the Delta, and would have no direct physical construction impacts on the Coastal Zone. Rehabilitation of levees in the Suisun Marsh area may be added to the Program, subject to a feasibility report. Should Suisun Marsh levees be added to the Program, reconstruction efforts in the Suisun Marsh area could result in short- and long-term adverse effects due to habitat encroachment and loss. These impacts can be reduced or mitigated by setting back levees and constructing channel-side berm and levee remnants, which would allow development of natural marsh communities, and produce beneficial impacts on aquatic characteristics.

Waterside construction activities could result in short-term effects on water quality. Local increases in TSS content of adjacent waters can be expected, with increases in TOC also possible. Toxic substances contained in old levees or channel sediments could be released during waterside work or dredging. A number of mitigation measures relating to construction practices can reduce potential water quality impacts, including use of cofferdams to isolate construction sites from waterways; using sediment curtains to contain sediment plumes during dredging; avoiding construction activities during periods of fish presence; and using best management practices to control erosion and sedimentation.

By using best management practices and other mitigations, as well as by creating additional marsh habitat, potential levee program actions to protect Suisun marshes and infrastructure would be consistent with the Suisun Marsh Protection Plan, the San Francisco Bay Plan and the McAteer-Petris Act.

4.2.6 WATERSHED PROGRAM

Most Watershed Program activities would not have direct, physical effects on the Coastal Zone. Program actions would, however, have beneficial impacts to the Bay through upstream activities that improve Bay water quality, result in a closer approximation of natural flows, and restore natural sediment delivery and movement. If Program activities are funded for watersheds within the jurisdiction of the

BCDC, they would be community-based, and would work with all local environmental protection laws and regulations, such as those administered by BCDC. Any on-the-ground projects within the BCDC jurisdiction would use mitigation measures similar to those described for the Ecosystem Restoration Program.

The CALFED Watershed Program is consistent at a programmatic level with the San Francisco Bay Plan's policies regarding fish and wildlife, water quality, freshwater inflow, water surface area and volume, marshes and mudflats, and saltponds and other managed wetlands described above. The determination of consistency with shoreline effects must be made at the project level because these policies are fairly project specific. Specific mitigation measures for potential impacts, such as siltation during construction, will also be addressed at the project level.

The McAteer-Petris Act policies pertain primarily to dredging and fill activities in the San Francisco Bay area. The Watershed Program is consistent at a programmatic level with the policies that state that further filling in the San Francisco Bay area should be for water-oriented uses (e.g., wildlife) and that the nature, location, and extent of any fill should minimize harmful effects on water and wildlife resources in the San Francisco Bay area. Actions under the Watershed Program involving fill would be designed to enhance wildlife and aquatic resources, stream health and water quality; however, as with other policies in the San Francisco Bay Plan and the Suisun Marsh Protection Plan, more detailed assessment of consistency with these policies is appropriately determined at the project level (e.g., construction in accordance with safety standards).

Watershed Program activities are not anticipated to occur in the Suisun Marsh; thus there would be no inconsistencies with the Suisun Marsh Protection Plan.

4.2.7 STORAGE

The Storage Investigation and potential development of storage facilities would not have a direct physical effect on the San Francisco Bay portion of the Coastal Zone, as no construction will occur within the Coastal Zone. By intercepting flows that would otherwise have flowed through the San Francisco Bay, however, flow amounts that reach the Bay may be reduced. Depending upon storage options chosen, between 340 and 700 TAF could be retained as a result of storage.

This flow reduction is not anticipated to result in significant environmental impacts to the Bay ecosystem, based on:

- Operations criteria are in place that will maintain minimum Delta outflow during the critical February through May period;
- The change in outflow (2.3%-4.7% decrease) is small relative to the variability in outflow from month-to-month and year-to-year;

- The change in outflow is partially attributable to capture of flow during high-flow conditions that will minimize the effects on ecosystem processes.

Additional project-level studies will be conducted as part of the planning for any storage projects to determine potential impacts to the Bay. Program activities to increase understanding of Delta outflow effects and the related shifts in salinity on organisms in the Delta and Bay are included in the ERP Strategic Plan and CALFED Science Program (CMARP).

Also, additional flows could be available from the Environmental Water Account, created through new storage, which would benefit anadromous and other species in the Bay region.

Because there are no direct impacts, because flow reduction impacts are not projected to be significant, and because additional flows may be available to benefit critical species at times when such flows are critical, the Storage Element would be consistent with the Suisun Marsh Protection Act, the San Francisco Bay Plan and the McAteer- Petris Act.

4.2.8 Conveyance- Preferred Program Alternative

The Preferred Program Alternative would implement a number of actions in the Delta that simultaneously are designed to improve water quality, allow for continued export, and allow for recovery of fish populations. No facilities would be contemplated in the San Francisco Bay portion of the Coastal Zone. Outflow reductions to the Bay are largely dependent on storage options chosen (see 4.2.7 above). As noted above, reduced flows to the Bay could range 340 to 700 TAF. This amount could be withheld from the average of 14.8 MAF that normally flow out of the Delta to the Bay, although flows historically have ranged between 4 to 70 MAF annually. In comparison to total annual flows, and given the probable timing of any flow reductions, the amount of reduction (2.3%-4.7%) is not significant, and would cause no adverse environmental impacts.

Because there are no direct impacts, because flow reduction impacts appear to be insignificant, and because additional flows may be available to benefit target species at times when such flows are critical, the Conveyance Element would be consistent with the Suisun Marsh Protection Act, the San Francisco Bay Plan and the McAteer- Petris Act.

4.3 CONCLUSION

The proposed CALFED Preferred Program Alternative programmatic actions are consistent with the Suisun Marsh Protection Act, the San Francisco Bay Plan and the McAteer-Petris Act. This will allow a finding by BCDC that the overall CALFED program is consistent with the Coastal Zone Management Act.

Of the proposed CALFED programs, only the Ecosystem Restoration Program and potentially the Levee System Integrity Program would have direct physical impacts on areas within the San Francisco Bay portion of the Coastal Zone. Both these programs are designed to improve the water quality of the Bay and to provide substantial enhancements for species inhabiting and transiting through the Bay region. Both Programs would mitigate any potential impacts in the Bay region.

The Storage and Conveyance elements of the CALFED Program may have some effects on X2 and estuary biota which depend on brackish marsh conditions. If winter flows to the Bay are reduced slightly due to increased storage or conveyance improvements, there is concern that salt marsh could expand at the expense of brackish marsh. Current information suggests that this would not occur. Such effects, however, cannot be measured or estimated at the current programmatic level of the Program, and will need to await additional monitoring and research information, both of which are proposed as part of the overall Program.

5.0 NEXT STEPS

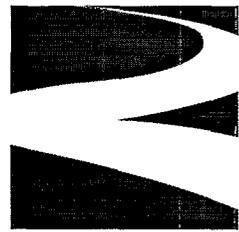
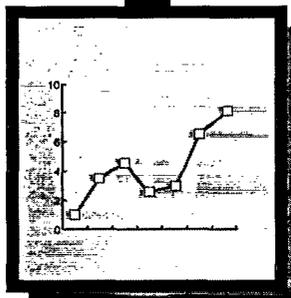
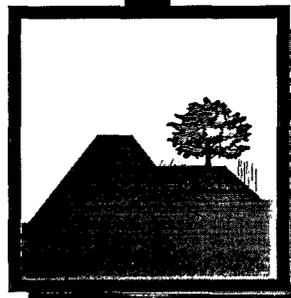
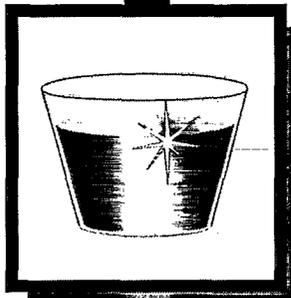
Project-specific actions, undertaken during Phase III of the CALFED process, may include federal agency involvement in projects proposing to deposit fill in; extract materials from; or change the use of water, land, or structures in or around San Francisco or Suisun Bays and therefore will require project-specific compliance with CZMA. Federal agencies may be required to prepare federal consistency analyses certifying that the proposed project-specific actions are consistent with BCDC's coastal zone management program. BCDC would either concur with the certifications or object to them (in the latter case the federal agencies must obtain approval from the secretary of commerce before the action commences). The environmental review for project-level actions that could affect coastal zone resources (requiring either the additional consistency analysis for federal actions or individual local coastal permits for nonfederal actions) will be tiered from the Programmatic EIS/EIR, and may be simplified because project descriptions of specific actions would already contain strategies (if necessary) to avoid and mitigate impacts on resources of the coastal zone.

6.0 REFERENCES

San Francisco Bay Conservation and Development Commission. 1969. San Francisco Bay Plan, as amended. January. San Francisco, CA.

San Francisco Bay Conservation and Development Commission. 1976. The Suisun Marsh Protection Plan. December. San Francisco, CA.

CALFED Bay-Delta Program. 1999. Draft Programmatic Environmental Impact Statement/Environmental Impact Report. June. Sacramento, CA.



CALFED
BAY-DELTA
PROGRAM

Attachment 10 Common Acronyms

August 28, 2000

Common Acronyms

A

AB	Assembly Bill
AFRP	Anadromous Fish Restoration Program
ASIP	Action-specific implementation plan
AWMC	Agricultural Water Management Council

B

Bay-Delta	San Francisco Bay/Sacramento-San Joaquin Delta estuary
BCDC	San Francisco Bay Conservation and Development Commission
BDAC	Bay-Delta Advisory Council
BLM	U. S. Bureau of Land Management
BMPs	best management practices

C

CalEPA	California Environmental Protection Agency
CARA	Conservation and Reinvestment Act
CCFB	Clifton Court Forebay
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CMARP	Comprehensive Monitoring Assessment and Research Program
COA	Coordinated Operations Agreement
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CZMA	Coastal Zone Management Act

D

DCC	Delta Cross Channel
DEFT	Diversion Effects on Fisheries Team
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DO	dissolved oxygen
DWR	California Department of Water Resources
DWRSIM	DWR system operational model

E

E/I Ratio	Export/Inflow Ratio
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ERP	Ecosystem Restoration Program
ESA	Endangered Species Act
EWA	Environmental Water Account
EWMP	efficient water management practices

F

FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
FWS	U.S. Fish and Wildlife Service

G

GLC	Grant Line Canal
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I

ISI	Integrated Storage Investigation
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J

JPOD	joint point of diversion
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L

LESA	NRCS Land Evaluation and Site Assessment
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M

"m" species	"maintains"
M&I	municipal and industrial
MAF	million acre-feet
mg/L	milligrams per liter
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSCS	Multi-species Conservation Strategy
MWD	Metropolitan Water District of Southern California
$\mu\text{g/L}$	micrograms per liter

N

NCCP	Natural Community Conservation Plan
NCCPA	Natural Community Conservation Planning Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NRCS	Natural Resources Conservation Service

O

Ops Group	California-Federal Operations Group
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P

PL	Public Law
ppb	parts per billion
ppm	parts per million
ppt	parts per thousand
Program	CALFED Bay-Delta Program

R

"R" species	"recovery"
"r" species	"contributes to recovery"
Reclamation	U.S. Bureau of Reclamation
ROD	Record of Decision

S

SB	Senate Bill
SJRA	San Joaquin River Agreement
SRF	State Revolving Fund
SWP	State Water Project
SWRCB	State Water Resources Control Board

T

TAF	thousand acre-feet
TBP	Temporary Barriers Program
TDS	total dissolved solids
TOC	total organic carbon

U

USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service

UV	Ultra violet
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V

VAMP	Vernalis Adaptive Management Plan
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W

WMS	Water Management Strategy
WUE	Water Use Efficiency Program

X

X2	Location (measured in kilometers upstream from the Golden Gate Bridge) of 2 parts per thousand total dissolved solids
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Y

yr	year
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