South San Francisco Bay Shoreline Project
SECTION 905(b) (WRDA 86) ANALYSIS

1. STUDY AUTHORITY

a. This Section 905(b) (WRDA) Analysis was prepared as an initial response to the Resolution adopted by the Committee on Transportation and Infrastructure of the U.S. House of Representatives on July 24, 2002 for the South San Francisco Bay Shoreline, California (Docket 2697), which reads as follows:

"Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the Final Letter Report for the San Francisco Bay Shoreline Study, California, dated July 1992, and all related interims and other pertinent reports to determine whether modifications to the recommendations contained therein are advisable at the present time in the interest of tidal and fluvial flood damage reduction, environmental restoration and protection and related purposes along the South San Francisco Bay shoreline for the counties of San Mateo, Santa Clara and Alameda, California."

b. Funds in the amount of $100,000 were appropriated in Fiscal Year 2004 to conduct the reconnaissance phase of the study.

2. STUDY PURPOSE

The purpose of the reconnaissance phase study is to determine if there is a Federal (Corps) interest in participating in a cost shared feasibility phase study to determine if there is a Federal interest in providing flood damage reduction and ecosystem restoration improvements to the South San Francisco Bay Shoreline. In response to the study authority, the reconnaissance study was initiated in March 2004. The reconnaissance study has resulted in the finding that there is a Federal interest in continuing the study into the feasibility phase. The purpose of this Section 905(b) Analysis is to document the basis for this finding, establish the scope of the feasibility phase, and identify a non-Federal sponsor. As the document that establishes the scope of the feasibility study, the Section 905(b) Analysis is used as the chapter of the Project management plan that presents the reconnaissance overview and formulation rationale.

3. LOCATION OF STUDY, NON-FEDERAL SPONSOR AND CONGRESSIONAL DISTRICTS

a. The study area is located along the South San Francisco Bay in northern California (Figure 1. Regional location) and includes three groups of former salt production ponds, shoreline and floodplain areas from the San Mateo Bridge in the East to the Ravenswood Ponds in the West, and other parcels that represent additional

opportunities for ecosystem restoration (Figure 2. Study area). The lands extending from the San Mateo Bridge in the East to just north of the Ravenswood Ponds in the West will also be investigated during the Feasibility Phase for potential flood damage reduction benefits.

1) Salt Pond Complexes: The State of California and the Federal government acquired approximately 15,000 acres of salt-production ponds from Cargill Salt Company in Spring 2003. The State of California and local foundations contributed $92 million of the $100 million purchase price while the remaining $8 million was contributed by the USFWS. The salt ponds included in the study fall into three distinct complexes or groups:

a) The Eden Landing (Baumberg) Ponds to the northeast;
b) The Alviso Ponds to the south; and
c) The Ravenswood (West Bay) Ponds to the west.

The Eden Landing Ponds are currently owned by the California Department of Fish and Game (CDFG), while the U.S. Fish and Wildlife Service (USFWS) owns the Alviso and Ravenswood Ponds. The Alviso and Ravenswood Ponds are part of the Don Edwards San Francisco National Wildlife Refuge. Ownership of the ponds and associated habitats was transferred to DFG and FWS upon acquisition in 2003, but Cargill was obligated to continue pond management until salinity was decreased to a level that met RWQCB standards for discharge. Upon meeting this standard for each pond, pond management was transferred to DFG or FWS. Many of the ponds have been transferred as of September 2004, but Cargill is still reducing salinities in many ponds. After transfer of all ponds, Cargill will not have any continuing obligations. Some areas within the Eden Landing and Alviso Pond complexes were not purchased as part of the acquisition and are under the ownership of Cargill or other entities.

2) The Alameda Creek Flood Control Channel (Alameda County), areas in San Mateo County just north of the Ravenswood Ponds, between the Ravenswood Ponds and Alviso Ponds, and several creeks within the Alviso Pond complex (Santa Clara County) are also included in the study. Changes to the salt ponds would affect flood protection to residences and businesses in these areas. These areas represent a constraint on the restoration design as well as an opportunity to improve flood protection. The Alameda Creek channel also presents a major opportunity for the restoration of an estuarine creek channel.

3) The following parcels (not part of the Cargill acquisition) present additional opportunities for ecosystem restoration:

a) J-2 Pond (owned by Alameda County Flood Control and Water Conservation District);
b) Pond 3EC (owned by Cargill);
c) Moseley property (north of the Dumbarton Bridge, owned by the City of San Jose);

d) Pond A4 (Alviso Complex; owned by the Santa Clara Valley Water District); and
e) Moffett Field Stormwater retention pond (owned by NASA-Ames).

b. The proposed non-Federal sponsor for the feasibility phase of the study is the California State Coastal Conservancy (CSCC). Two other agencies, the Alameda County Flood Control and Water Conservation District (ACFCWCD) and the Santa Clara Valley Water District (SCVWD), have also expressed interest in non-Federal sponsorship during future phases of the project.

c. The study area lies within the jurisdiction of the following Congressional Districts:

1) 13th: Representative Pete Stark (D)
2) 14th: Representative Anna Eshoo (D)
3) 15th: Representative Mike Honda (D)

4. PRIOR REPORTS AND EXISTING PROJECTS

a. The following reports are being reviewed as a part of this study:

1) Corps reports

a) San Francisco Bay Shoreline Study Office Report. Volume 1: Southern Alameda and Santa Clara Counties. Corps of Engineers, San Francisco District. October 1988. The purpose of this study was to determine the feasibility of, and Federal interest in, providing protection against tidal and tidal-related fluvial flooding for developed areas within the tidal floodplain of San Francisco Bay and in southern Alameda County and Santa Clara County.

b) San Francisco Bay Shoreline Study Office Report. Volume 2: San Mateo and Northern Alameda Counties. Corps of Engineers, San Francisco District. September 1989. The purpose of this study was to determine the feasibility of, and Federal interest in, providing protection against tidal and tidal-related fluvial flooding for developed areas within the tidal floodplain of San Francisco Bay and in San Mateo and northern Alameda County.

c) San Francisco Bay Shoreline Study Final Letter Report. Corps of Engineers, San Francisco District. July 1992.

d) After the Flood Waters Receded: Assessing the Economic Impacts of San Francisquito Creek's February 1998 Flooding. Corps of Engineers, San Francisco District and Santa Clara Valley Water District. March 1999.

2) South Bay Salt Pond Restoration Project (SBSP Project) reports: The SBSP Project is a non-Corps project, led by the CSCC, USFWS, and CDFG (members of the Executive Leadership Group), whose emphasis is

the restoration of the salt ponds acquired from Cargill Salt Company. The SCVWD, ACFCWCD, and Corps are adjunct members of the SBSP Project Management Team and participate heavily in this project. The Corps's San Francisco District is receiving funds from the CSCC, through a Memorandum of Agreement, to participate in the SBSP Project and review work products, the most relevant of which are included below. Additional SBSP Project documents will be become available and be reviewed after the submittal of this 905(b) analysis:

a) South Bay Salt Ponds Initial Stewardship Plan and EIR/EIS. Life Science Environmental Consultation and Restoration Services. June 2003. This document identifies how the South Bay Salt Pond land will be managed over an interim period while a long-term plan is developed for restoration of the project ponds.

b) Stakeholder and Organizational Assessment Findings and Recommendations, South Bay Salt Pond Restoration. Center for Collaborative Policy. October 2003.

c) Science Strategy, South Bay Salt Pond Restoration. Center for Collaborative Policy. April 2004

d) Alternatives Development Framework, South Bay Salt Pond Restoration. Philip Williams and Associates, H.T. Harvey & Associates, EDAW, and Brown & Caldwell. 2004. This document described the SBSP Project objectives, alternatives evaluation criteria, and the general approach for determining project alternative plans.

e) Initial Opportunities and Constraints Summary Report, South Bay Salt Pond Restoration. Philip Williams and Associates et al, July 2004.

f) Data Summary Memorandum, South Bay Salt Pond Restoration. Philip Williams and Associates et al. 2004.

g) Urban Levee Flood Management Requirements (Draft). Moffet & Nichols. March 2004. This report provided cost estimates for salt pond levee work within the Alviso and Ravenswood pond complexes. Brown & Caldwell and PWA used this information to produce a cost estimate for flood control levees in the project area (see below).

3) Additional reports

a) Baylands Ecosystem Habitat Goals Report. San Francisco Bay Area Wetlands Ecosystem Goals Project. 1999. This report presents recommendations for the kinds, amounts, and distribution of wetlands and related habitats that are needed to sustain diverse and healthy communities of fish and wildlife resources in the SF Bay Area.

b) Feasibility Analysis, South Bay Salt Pond Restoration. Siegel, S.W., Bachand, P.A.M. 2002. This Feasibility Analysis provided the starting point for evaluating all topics relevant to the purchase and restoration of the ponds.

c) Alameda Creek Flood Control Channel – Flood Mitication/Wetland Restoration Feasibility Study, Phase II Final Report.

URS Corporation. 2004. This report identified and evaluated three initial concepts for levee reconfiguration in the Alameda Creek Flood Control Channel.

b. This study is investigating potential modifications of the following Corps project(s) (Figure 2. Study area):

1) Alameda Creek, California. Completed in 1975, the project provides flood protection for the metropolitan areas of Union City, Fremont and Newark and prevents inundation of nearby agricultural areas, railroads and highways. The Alameda Creek Channel Improvement portion of the project consisted of straightening, widening, partially relocating, and placing riprap across sections of Alameda Creek from the vicinity of the city of Niles to the South San Francisco Bay, a distance of about 12 miles. The project also included construction of a marsh restoration area and interior drainage ponding areas. The improved channel conducts the drainage from a 700 +/- square mile watershed.

2) Coyote and Berryessa Creeks, California. This project constructed channel improvements to contain flood flows up to the 100-year event, reducing future flood damages to public and private property. The Coyote Creek Element of the Coyote and Berryessa Creeks Project extends approximately 7 miles along Coyote Creek from the confluence of Coyote Creek and the Coyote Slough at the southern tip of San Francisco Bay to the Montague Expressway in the cities of San Jose and Milpitas.

Reach 1 of the project included construction of an engineered levee on Bay mud across part of Pond A18. The severed portion of the pond adjacent to Coyote Creek was then breached and opened to tidal action. This levee may provide a model for flood protection levees in the South Bay and may also link to a future levee system that may result from the Shoreline Study.

3) Guadalupe River Project, Downtown San Jose, California. The purposes of this project are: a) to provide flood protection to downtown San Jose's technology and commercial industries and established residential neighborhoods; b) to protect and improve water quality of the river; c) to preserve and enhance the river's habitat, fish, and wildlife; d) and to provide recreational and open space benefits.

This project is related to the South San Francisco Bay Shoreline Project indirectly, through the Lower Guadalupe River Flood Control Project (LGRP). The LGRP, constructed by the SCVWD, is not a Corps project, but its completion was a critical component in the hydrologic function of the Corps project.

The Shoreline Project design must consider the tie-ins with SCVWD's levee (located just upstream from the Alviso County Marina and Pond A8) in order to provided integrated fluvial and tidal flood protection. The Corps project extends through downtown San Jose from Interstate 880 to Interstate 280, while the LGRP extends from the Alviso Marina to Highway 880.

4) San Francisquito Creek. The non-Federal sponsor (San Francisquito Creek Joint Powers Authority) is actively pursuing both a Continuing Authorities Program Study (Section 205, Flood Damage Reduction) and a General Investigations (GI) study. The San Francisquito Creek watershed encompasses an area of approximately 40 square miles, extending from the ridge of the Santa Cruz Mountains to the San Francisco Bay in California. Flooding on the creek affects the city of Menlo Park in San Mateo County, and Palo Alto and East Palo Alto in Santa Clara County. This Continuing Authorities project specifically focuses on Reach 1, which extends from West Bayshore Frontage Road to the San Francisco Bay, bordering Palo Alto and East Palo Alto. Improvements in this reach would not induce flooding upstream, and would improve the capacity of the reach with the lowest channel capacity. As a result of record rainfall in February 1998, San Francisquito Creek overtopped its banks, affecting approximately 1,700 residential and commercial structures and causing more than $28 million in property damages (Corps of Engineers and SCVWD. March 1999.).

5) Bair Island. Bair Island, located to the north of the Ravenswood complex, is a potential Corps tidal marsh restoration project located adjacent to Redwood City Harbor that is currently not prepared or permitted to accept dredged material. A Project Cooperation Agreement is currently not in place. The site has been used for disposal of dredged materials in the past, but has been discontinued due to over-filling and potential adverse environmental impacts on wetlands. The majority of the island is now protected and part of the Don Edwards San Francisco Bay National Wildlife Refuge. The USFWS is considering, as a possibility in future years, use of up to 1,000,000 cubic yard of dredged material to recreate wetlands in the west end of the Island. Bair Island, the South Bay Salt Pond Project, and other restoration projects occurring in San Francisco Bay that plan to use dredged material will need to be taken into account when determining the amount of dredged material available to the South San Francisco Bay Shoreline Study.

6) Redwood City Harbor. Located adjacent to Bair Island, this Corps navigation project is currently in the O&M phase and undergoes periodic maintenance dredging. Currently, the dredged sediments are being shipped to a site near Alcatraz Island, but could possibly supply dredged material to the Bair Island restoration (see above), or to the South San Francisco Bay Shoreline Study.

7) Bayshore Restoration Project. The Corps coordinated with the CSCC to examine the possibility of a Section 206 (Aquatic Ecosystem Restoration) Continuing Authorities Program to remove invasive *Spartina alterniflora* (smooth cordgrass) from within the San Francisco Bay Estuary. Although it was determined that there would be Federal interest in such an effort, the CSCC decided not to pursue this project with the Corps further due to issues with the requirement to provide all LERRD (Lands, Easements, Rights-of-way, Relocations, and Disposal areas).

5. PLAN FORMULATION

During a study, six planning steps that are set forth in the Water Resource Council's Principles and Guidelines are repeated to focus the planning effort and eventually to select and recommend a plan for authorization. The six planning steps are: 1) specify problems and opportunities, 2) inventory and forecast conditions, 3) formulate

alternative plans, 4) evaluate effects of alternative plans, 5) compare alternative plans, and 6) select recommended plan. The iterations of the planning steps typically differ in the emphasis that is placed on each of the steps. In the early iterations, those conducted during the reconnaissance phase, the step of specifying problems and opportunities is emphasized. That is not to say, however, that the other steps are ignored since the initial screening of preliminary plans that results from the other steps is very important to the scoping of the follow-on feasibility phase studies. The sub-paragraphs that follow present the results of the initial iterations of the planning steps that were conducted during the reconnaissance phase. This information will be refined in future iterations of the planning steps that will be accomplished during the feasibility phase.

a. National Objectives

1) The national or Federal objective of water and related land resources planning is to contribute to national economic development consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. Contributions to National Economic Development (NED) are increases in the net value of the national output of goods and services, expressed in monetary units. Contributions to NED are the direct net benefits that accrue in the planning area and the rest of the nation.

2) The Corps has added a second national objective for Ecosystem Restoration in response to legislation and administration policy. This objective is to contribute to the nation's ecosystems through ecosystem restoration, with contributions measured by changes in the amounts and values of habitat.

b. Public Concerns: A number of public concerns have been identified during the course of the reconnaissance study. Initial concerns were expressed in the study authorization. Additional input was received through coordination with the potential non-Federal sponsor, the California State Coastal Conservancy, and some initial coordination with other agencies. The public concerns that are related to the establishment of planning objectives and planning constraints as indicated in the South Bay Salt Pond Restoration Project Stakeholder and Organizational Assessment Findings and Recommendations (Center for Collaborative Policy, 2003) include:

1) Balance of habitat restoration needs and public access;
2) Maintenance and improvement of flood protection levels;
3) Maintenance of a landscape-level perspective of the restoration;
4) Balance of tidal marsh, non-tidal marsh and managed ponds (what is the best ratio?);
5) Urban run-off, sediment and water quality concerns, especially mercury; wastewater-treatment-plant discharges;
6) Cost-effective implementation of restoration plan;
7) Operational performance measures and indicators for objectives;
8) Identification of a project temporal scale;
9) Connectivity of habitats;
10) Coordination of *Spartina alterniflora* control among agencies;

11) Observation and support of the project becoming "a national research program, a regional recreation program, and/or a major educational program;"
12) Financial and staffing feasibility of completing planning and implementation;
13) Sufficient management of salt ponds' dikes and levees by CDFG and USFWS;
14) Corps role in funding the flood management project implementation; and
15) Continued public participation for project input.

The project goal of the non-Federal sponsor is to achieve ecosystem restoration through conversion of salt production ponds to a mix of tidal marsh, managed ponds and landscape features that function as one South Bay ecosystem to:

- Provide habitat as similar as possible in form and function to that which historically existed in abundance around the South Bay for the particular benefit of native special status species; and
- Provide habitat for species that have utilized the salt production ponds and adjacent habitats in recent decades.

In addition, the project should integrate provisions for flood management and public access and recreation consistent with achieving these ecosystem restoration goals.

c. Problems and Opportunities: The evaluation of public concerns often reflects a range of needs, which are perceived by the public. This section describes these needs in the context of problems and opportunities that can be addressed through water and related land resource management. For each problem and opportunity, the existing conditions and the expected future conditions are described, as follows:

Problems:

1) Loss of wetlands and development in wetlands in the San Francisco Bay Area: The San Francisco Bay Estuary is the largest estuary on the west coast of North America and provides a unique habitat for a great diversity of estuarine species. Diking or filling has destroyed approximately 90 percent of the original tidal wetlands of San Francisco Bay (Baylands Ecosystem Habitat Goals, San Francisco Bay Area Wetland Ecosystem Goals Project, March 1999). The loss of tidal wetlands has greatly reduced the amount of habitat available to many species of fish and wildlife. Several animal and plant species native to California, including the salt marsh harvest mouse and the California clapper rail, have been listed as endangered on State and Federal lists due to the severe reduction of wetland habitats (Science Strategy, South Bay Salt Pond Restoration Project, April 2004).

2) Loss of flood plain and potential for flood damage in the project area: Potential flood damages within the study area are primarily due to development within the natural tidal and fluvial flood plains and past land subsidence due to overdraft pumping of groundwater. Extensive areas along the South San Francisco Bay shoreline

are lower in elevation than the extreme high tides in the Bay and are potentially subject to tidal flooding. Much of the developed areas in the tidal flood plain are protected by substandard levees, including levees built to create salt ponds. These levees are subject to overtopping during high tides and potential failure. The levees also constrain stream channels conveying runoff from upstream areas into the Bay. The capacity of these constrained channels is further reduced during high tides, potentially increasing the risk of fluvial flooding and causing drainage problems. Past land subsidence is major factor contributing to potential tidal and fluvial flooding, particularly in the Alviso Complex, the portion of the study with the greatest potential flood problems. Flood damages to the Silicon Valley region would have significant impacts to the economy of the Bay Area, the State of California, and the United States. The previous South San Francisco Bay Shoreline study showed that tidal flooding has not been a significant source of flood damages in the past and did not identify an economically justified flood damage reduction project for the area, but several new factors could result in the development of economically feasible flood damage reduction measures. These factors include: (1) the use of risk analysis to better quantify the potential for flooding and the magnitude of flood damages, (2) the potential increase in flood damages due to intensification of land uses in the study area, particularly the increase in high tech businesses that can sustain flood damage even with shallow flooding depths, and (3) the formulation of plans to achieve multiple purposes that may produce economic efficiencies due to shared costs among purposes.

3) Increased potential for flood damage due to transfer of salt ponds and associated change in management regime: Prior Corps' studies concluded that the existing salt ponds and levees provide significant (but incomplete) protection against coastal flooding, even though the levees were not engineered structures. This was based on an analysis of flood potential and historic flooding, and predicated on the need and ability to maintain levees for salt production. Since the salt production is not being pursued, levee maintenance may not be economically viable and the risk of flooding and flood related damages to nearby communities might increase. In addition, breaching bayside levees to restore tidal action to the salt complex may affect the level of flood protection in adjacent areas.

4) Proliferation of Non-native plant and animal species: The proliferation of non-native species in the San Francisco Bay has negatively impacted native species, caused shifts in food webs, and created other ecosystem-level changes (Science Strategy, South Bay Salt Pond Restoration Project, 2004). Smooth cordgrass (*Spartina alterniflora*) is one of the most problematic invasive plant species in the project area; its presence within vegetated wetlands can shift mudflat distributions, change creek geomorphology, and affect habitat conditions. Other non-native species in the project area include: perennial pepperweed (*Lepidium latifolium*), glasswort (*Salsola soda*), the Chinese Mitten Crab (*Eriocheir sinensis*), and non-native predators such as the red fox, cats, and dogs.

5) Reduced salinity in the South Bay: Increased discharges from water pollution control plants and urban runoff have shifted the natural salinity gradient in South San Francisco Bay. The reduction in tidal prism in the far south bay due to sedimentation also contributes to the shift. If Bay salinity continues to change, there could be large-scale impacts on the ecosystem.

Opportunities:

1) To provide public access and recreational opportunities compatible with wildlife and habitat goals;

2) To increase habitat acreage for special-status species and native South San Francisco Bay species;

3) To enhance existing salt pond habitat to benefit special status wildlife and migratory birds;

4) To establish connections between tidal marsh and adjacent habitats;

5) To address predators and invasive species on a regional level;

6) To improve flood control in project area;

7) To restore historic geomorphic features such as channels and sloughs;

8) To improve the health and water quality of the San Francisco Bay (by increasing wetland acreage and by increasing overall primary productivity in the South Bay ecosystem by restoring tidal marshes);

9) To improve sediment quality; and

10) To reshape the landscape away from the present emphasis on salt production and consistent with the multiple objectives of ecosystem restoration and flood control (coastal and fluvial).

d. Planning Objectives: The national objectives of National Economic Development and National Ecosystem Restoration are general statements and not specific enough for direct use in plan formulation. The water and related land resource problems and opportunities identified in this study are stated as specific planning objectives to provide focus for the formulation of alternatives. These planning objectives reflect the problems and opportunities and represent desired positive changes in the without project conditions. The planning objectives are specified as follows:

1) Restore ecosystem functions in the project area, including habitats of sufficient size, function, and appropriate structure for: special-status species, migratory birds, and other native species;

2) Reduce the potential for flood damages in the project area; and

3) Provide recreational opportunities within the project area, consistent with the goals of the ecosystem restoration effort.

e. Planning Constraints: Unlike planning objectives that represent desired positive changes, planning constraints represent restrictions that should not be violated. The planning constraints identified in this study are as follows:

1) Maintain or improve existing levels of water and sediment quality in the project area;

2) Maintain or improve current levels of vector management in the project area;

3) Do not increase predation on special-status species in the project area;

4) Do not increase the spread of non-native species in the project area;

5) Protect existing infrastructure function within the project area (e.g., power lines and railroads);

6) Ecosystem restoration should not result in induced flooding of developed areas or significant infrastructure;

7) Do not eliminate habitat in the project area for salt-pond-dependent species; and

8) Replace or minimize the loss of existing outboard marshes and mudflats in the project area.

f. Planning/Design Considerations: The following issues are expected to contribute to the planning process, but are not considered to be limiting factors or constraints:

1) Effects of non-native nuisance species;

2) Effects of long-term sea level rise on restoration process and flooding;

3) Estuary-wide shortage of sediment and resulting ongoing long-term loss of mudflats and inability to restore tidal marshes;

4) Impact of up to eight feet of pond subsidence on tidal habitat evolution; and

5) Long-term impacts on resident flora and fauna due to changes in landscape.

g. Potential Measures to Address Identified Planning Objectives. A management measure is a feature or activity at a site, which address one or more of the planning objectives. A wide variety of measures will be considered during the Feasibility Phase, some of which might be found to be infeasible due to technical, economic, or environmental constraints. The following measures will be assessed and a determination will be made regarding whether they should be retained in the formulation of alternative plans:

1) Measures to improve managed pond habitat

a) Salt Pond Levee reinforcements: Ponds that will be retained as shallow and deep-water pond habitat might require levee reinforcements to offset the risk of breaches, the likelihood of which will be determined from levee surveys performed during the Feasibility phase.

b) Replacement and installation of water control structures: Ponds to be retained as managed ponds might be equipped with new and/or upgraded water control structures to allow effective management of water level and salinity. The restoration effort would use the existing water conveyance infrastructure to the greatest degree possible. However, if existing water conveyance structures were deteriorated, refurbishing or replacement would be required. In addition, it might be necessary to install new intakes, outfalls, and other water conveyance structures (such as pumps, siphons, weirs, and fish screens).

c) Construct internal pond levees: Internal levees may be constructed to manage pond water levels more effectively, or to

subdivide tidal and managed pond habitat to create continuous tidal corridors.

d) Internal islands: Creation of internal islands in the ponds could provide nesting and roosting habitat for migratory birds. Island would also provide some protection from introduced mammalian predators.

e) Grading of Pond Bottoms: Grading within the ponds could be used to create nesting islands and other habitat features.

f) Water Management Plan: Along with installation of water control structures and physical improvements, the ponds will need a management plan that details the ideal water levels and salinities over the course of a year. Different species of migratory birds have preferences for different water levels and salinities and use the salt ponds at different times of the year.

2) Measures to establish tidal marsh habitat and associated tidal habitats

a) *Non-Structural*

i. Plant native vegetation species
ii. Land-use management plan
iii. Remove non-native plant species such as *Spartina alterniflora* through physical (covering, physical removal, or prescribed burns), chemical, or mechanical (mowing) techniques.
iv. Remove or break up gypsum deposits where necessary.

b) *Structural*

i. Levee breaches: Ponds could be breached to reestablish tidal action within the ponds and allow tidal marsh formation.
ii. Ditch blocks: Ditch blocks could be used to block flow through artificial (human made) channels to route flow through natural channels with higher habitat value.
iii. Levee lowering: A portion of the levees could be lowered to create new tidal marsh, improve habitat continuity between the existing fringing marshes and the marshes that are expected to form within the ponds.
iv. Import and placement of sediment/dredged material: Rather than rely on natural sedimentation, the project could import large quantities of dredged sediment to accelerate habitat evolution and/or the creation of seasonal wetland, transition zones at the upper edge of tidal marshes, and upland habitat. Sediment would most likely be imported from sources within the San Francisco Bay and from associated fluvial systems.
v. Starter channels: Starter channels may be excavated where channel development is expected to be slow or limited in extent.

vi. Berms: Berms could facilitate rapid development of a diversity of marsh habitat by providing ground elevations conducive to vegetation establishment, by dissipating wave energy, by creating more sheltered conditions conducive to sedimentation and vegetation colonization, and by acting as sacrificial sources of sediment to the rest of the pond.

vii. Excavation and grading of coastal uplands: This measure would increase the acreage of tidal wetlands and could be used to create different types of habitat such as saltmarsh, intertidal flats, tidal creeks, and permanent pools for marine communities. Grading and filling could also be used to create a gradual upland transition and refugia.

viii. Cover of contaminated sediment: Some of the Alviso Ponds are in the Guadalupe River delta that received mercury-laden sediments from the Almaden mercury mine in the past. This measure would cover these sediments during or prior to ecosystem restoration.

ix. Aeration: There is presently a severe dissolved oxygen problem in one of the Alviso ponds that limits ecosystem restoration of the pond. This measure would increase dissolved oxygen in the pond.

3) Measures to improve flood protection

a) *Non-Structural*

i. Relocate homes/businesses in flood-prone areas

ii. Create flood management plan

b) *Structural*

i. Channel/hydrodynamic modification/sediment dredging: This measure would increase channel capacity, resulting in decreased water levels and lowered risk of overtopping.

ii. Flood-control levees, setback levees: Expansion of tributary channels and associated floodplain via removal and/or reconstruction of levees farther from the channel will provide a slight increase in flood storage and major increase in conveyance of fluvial floodwaters. The associated increase in tidal prism will scour the channel, resulting in expansion of the channel cross-section and decreased water levels in the tributary channel.

iii. Construct/improve inboard salt pond levees: This measure would create/improve levees generally parallel to the shoreline between the creek channels. If improved inboard levees are tied-in to the existing channel levees, any of the other salt pond levees can be

modified or removed without affecting developed areas, providing maximum flexibility in the future restoration and management of the salt ponds

iv. Construct managed ponds and tidal ponds as detention basins or floodplain: This measure would add features to the ponds to allow them to be used for floodplain storage and conveyance.

v. Breaching along tidal creeks: This measure would increase channel scour and conveyance

4) Recreation measures
   a) Information signage and kiosks;
   b) Multipurpose trails and access points;
   c) Safety features such as lighting and signage;
   d) Appropriate surfacing and drainage improvements to accommodate new access and recreation facilities;
   e) ADA-compliant access features;
   f) Non-motorized launched sites (for kayaks, etc); and
   g) Viewing platforms

h. Preliminary Plans. Preliminary plans are comprised of one or more management measures. The descriptions and results of the evaluations of the preliminary plans that were considered in this study are presented below:

1) No Action. The Corps is required to consider the option of "No Action" as one of the alternatives in order to comply with the requirements of the National Environmental Policy Act (NEPA). No Action assumes that no project would be implemented by the Federal Government or by local interests to achieve the planning objectives. No Action, which is synonymous with the Without Project Condition, forms the basis from which all other alternative plans are measured.
2) Preliminary Plans Eliminated from Further Consideration
   a) All Managed Ponds: This plan differs from the without-project condition in that measures to improve managed pond habitat would be involved (see above). Retaining all ponds as managed ponds would not increase habitat for endangered species and would not improve water quality in San Francisco Bay. This outcome would conflict with Federal and State plans for endangered species recovery.
   b) All Tidal Habitats: This plan would breach pond levees to establish tidal exchange between the ponds and the San Francisco Bay. Opening all ponds to tidal action would support certain endangered species, assuming that the entire area eventually became tidal marsh. However, this approach would result in negative impacts by eliminating existing high-tide refugia and feeding habitat for shorebirds, and substantial

feeding and resting habitat for waterfowl. In addition, the level of available sediment in the San Francisco Bay would limit the rate of accretion and thus the area of pond that would accrete to tidal marsh within the planning analysis period if all of the ponds were opened.

3) Preliminary Plans for further Consideration: The following general concepts (and others) for addressing the two main objectives of this project will be investigated during the formulation of alternative plans during the Feasibility Phase. Multi-purpose plans will be formulated to address both ecosystem restoration and flood-damage reduction. Single-purpose ecosystem-restoration plans will also be considered, in the event that no sponsor is identified to share costs for additional flood protection, and in order to meet the requirements of EC 1105-2-404 (Planning Civil Work Projects Under the Environmental Operating Principles) and EC 1105-2-219 (Cost Allocation for Multipurpose Projects Including Ecosystem Restoration) for multipurpose plans. Multiple flood-damage-reduction concepts might be included in a single plan. Additional measures (listed above) may apply to each of the general concepts:

a) Ecosystem Restoration:
   i. Mix of Managed Ponds and Tidal Habitats, All Ponds (there may be multiple plans representing a range of habitat outcomes for each pond)
   ii. Mix of Managed Ponds and Tidal Habitats, Subset(s) of Ponds

b) Flood-Damage Reduction:
   i. Nonstructural approach to reduce flood damages
   ii. Flood control levees
   iii. Increase channel-flow conveyance
   iv. Use ponds for flood storage

i. Conclusions from the Preliminary Screening. The preliminary screening indicates that alternatives that would create a mix of managed ponds and tidal habitats, rather than emphasize one habitat type, would have the greatest potential for implementation. Due to the strong interest of potential non-Federal sponsors such as the SCVWD and ACFCWCD in cost sharing flood-damage-reduction components of this project, it is likely that the recommended plan will be a multi-purpose plan.

1) The types of <u>benefits</u> anticipated from the proposed actions would relate to:

a) Ecosystem restoration
   i. Improved habitat quality;
   ii. Increased populations and improved viability of special-status species;
   iii. Increased populations of other native species;
   iv. Increased habitat acreage; and;
   v. Improved water quality

c) Flood damage reduction;

d) Recreation; and
e) Incidental benefits-- Improved sediment management in estuarine portions of rivers and creeks (resulting in reduced O&M costs for related projects).

2) Anticipated negative environmental effects (and potential mitigation measures) include:

a) Temporary water quality impacts (water quality monitoring and adaptive management);
b) Temporary disturbance of animal and vegetative communities, (pre-construction surveys and relocations); and
c) Short-term reduction in aquatic habitat suitability (cofferdams to minimize in-water construction).

3) Anticipated project costs. A cost estimate for ecosystem restoration features in Eden Landing, the Alviso Complex, and the Ravenswood Complex was created for the South Bay Salt Pond Restoration Project (Feasibility Analysis, South Bay Salt Ponds, 2001). This cost estimate does not include costs for flood protection beyond that linked with restoration.

Alternatives that include all of the ponds within the three salt pond complexes are anticipated to range between $314 million to $1.1 billion (2001 price levels). This estimate includes costs over a 99-year timeframe: planning and design, operations and maintenance during planning, construction, monitoring, the import of dredged materials, and operations and maintenance. This cost estimate also includes salinity reduction of the ponds, which is not within the scope of this restoration project—the salinity will be reduced before the management of the ponds is transferred to the CDFG and USFWS because the former landowner (Cargill) has continuing obligations to the current landowners to do so.

The costs do not include construction for flood control beyond what is linked to restoration measures, or the value of lands, easements, right of way, relocation, or disposal sites (LERRD). It is possible that the South San Francisco Bay Shoreline Study will involve a subset of the ponds and thus features included in the SBSP Project.

Two cost estimates concerning flood management within the project area are also available: a) an estimate for the reconfiguration of levees associated with the Alameda Creek Flood Control Channel (Alameda Creek Flood Control Channel – Flood Mitigation/Wetland Restoration Feasibility Study, Phase II Final Report, 2004) and b) an estimate for a flood control levee surrounding the study area (Pers comm., Brown & Caldwell and PWA, based on information from the Moffet & Nichol Report, Urban Levee Flood Management Requirements (Draft) March 2004).

Alternatives for the realignment of the Alameda Creek Flood Control Channel levee are estimated to range in cost from $17.5 million to $22 million. Each alternative includes breaching the existing levees in eight locations, excavation of a spillway, and

construction of two levees. The alternatives differ with respect to the size and location of the eight breaches.

The cost for a flood control levee throughout the entire Shoreline project area is estimated to range from $135 million to $475 million, based on low and high values of unit levee improvement cost and levee length (50 miles or 75 miles). Levee unit costs were a function of levee elevation and slope. The high end of levee length included the inboard perimeter of ponds throughout the entire study area (from immediately south of the San Mateo Bridge to immediately north of the Ravenswood crystallizer ponds), while the low-end estimate assumed that some areas need no levee (high ground) and that some areas have sufficient existing levees intact. All estimates assume one perimeter levee and assume that all materials used in levee construction will be obtained from adjacent ponds. The import of construction materials would incur substantial additional cost.

A more detailed analysis of costs for ecosystem restoration and flood management will be produced during the Feasibility Phase.

Based on this information, alternatives to address the planning objectives appear viable.

j. Establishment of a Plan Formulation Rationale. The conclusions from the preliminary screening form the basis for the next iteration of the planning steps that will be conducted in the feasibility phase. The likely array of alternatives that will be considered in the next iteration will consider different habitat fates for ponds within the pond complexes, will consider both natural sedimentation and the import of dredged sediment, will represent a range of strategies for addressing flood control issues; and will reflect incremental levels of investment.

Future screening and reformulation will be based on the following factors: associated evaluation criteria of effectiveness, efficiency, completeness, and acceptability; and the overall ratio of managed pond area to tidal marsh area in the study area.

6. FEDERAL INTEREST

There is a strong Federal interest in conducting the feasibility study because the primary outputs of the alternatives to be evaluated in the feasibility phase (flood damage reduction and ecosystem restoration) are outputs with a high budget priority. There is also a Federal interest in other related outputs of the alternatives, including recreation, that could be developed within existing policy. Based on the preliminary screening of alternatives, there appear to be potential project alternatives that would be consistent with Army policies and would have adequate benefits and acceptable costs and environmental impacts.

The San Francisco Estuary is the largest estuary on the west coast of the contiguous United States. It has ecological resources of national significance, and has been designated as a site of hemispheric importance to shorebirds.

7. PRELIMINARY FINANCIAL ANALYSIS

As the non-Federal sponsor, California State Coastal Conservancy would be required to provide 50 percent of the cost of the feasibility phase. The CSCC is also aware of the cost sharing requirements for potential project implementation. A letter of intent from the CSCC stating a willingness to pursue the feasibility study and to share in its cost, and an understanding of the cost sharing that is required for project construction is included as Enclosure B (Letter of Intent).

8. ASSUMPTIONS AND EXCEPTIONS

a. Feasibility Phase Assumptions: The following critical assumptions will provide a basis for the feasibility study:

1) *Without Project Condition Assumptions*— Without-project condition for the salt ponds will be generally defined as the project conditions under the South Bay Salt Pond Project's Initial Stewardship Plan (ISP), developed by the CDFG and USFWS (in conjunction with other stakeholders). This plan involves minimal maintenance of the ponds and associated levees. During the Feasibility Study, the without-project condition might be adjusted to reflect deviations from the ISP. Without-project conditions for study areas not covered by the plan will incorporate information from current flood capacity and floodplain maps.
2) NEPA and CEQA documentation will be prepared as part of the Feasibility Phase.
3) A benefit-to-cost (B/C) analysis will be performed as part of the evaluation of flood damage reduction features. An incremental cost analysis (ICA) will be performed to evaluate ecosystem restoration features. These two analyses would be used, as appropriate, to identify a primary purpose plan, and to optimize any separable elements. A risk-based analysis will be used to capture low-probability, highly damaging floods (not captured in the original Shoreline Study). However, the primary evaluation method will be a trade-off analysis addressing both NED and NER costs and benefits, rather than separate B/C and ICA analyses.
4) The proposed feasibility study will use as much existing information as possible to gain a clear understanding of flooding and ecosystem restoration issues within this basin and the potential solutions already studied to determine the best means of proceeding. The study assumes that FEMA flood plain maps will be updated within the next few years; information from FEMA studies will be used, although FEMA

maps will not be used in lieu of a risk-based analysis of without-project flood damages.

5) The Feasibility Report will be based upon existing information, revised or updated information provided by the non-Federal sponsor, and new studies. The Corps, non-Federal sponsor, or contract resources will perform new studies. The decision as to which entity will conduct the studies will be based upon who is the most logical and practical party to complete the task. The method of accomplishment for each task will be identified in the PMP

b. Policy Exceptions and Streamlining Initiatives: The study will be conducted in accordance with the Principles and Guidelines and the Corps of Engineers regulations. No exceptions to established guidance are identified at this time.

c. Quality Objectives: Feasibility phase studies will be accomplished to meet the following quality objectives:

1) Adequate evaluations will be conducted to meet the requirements of the National Environmental Policy Act and other environmental legislation.
2) Project costs for the selected plan will be developed to a level of certainty where the ultimate project cost will be within 20% of the feasibility phase estimate.
3) Feasibility phase studies will conform to the requirements of ER 1105-2-100.

9. FEASIBILITY PHASE MILESTONES

Milestone	Description	Duration (mo)	Cumulative (mo)	Date
Milestone F1	Initiate Study	0	0	Nov-04
Milestone F2	Public Workshop/Scoping	1	1	Dec-04
Milestone F3	Feasibility Scoping Meeting	7	8	Jul-05
Milestone F4	Alternative Review Conference	8	16	Mar-06
Milestone F4A	Alternative Formulation Briefing	5	21	Aug-06
Milestone F5	Draft Feasibility Report	3	24	Nov-06
Milestone F6	Final Public Meeting	1	25	Dec-06
Milestone F7	Feasibility Review Conference	1	26	Jan-07
Milestone F8	Final Report to SPD	3	29	Apr-07
Milestone F9	DE's Public Notice	1	30	May-07
-	Chief's Report	4	34	Sep-07

10. FEASIBILITY PHASE COST ESTIMATE

The following cost estimate was generated using best professional judgment based on previous Corps studies, was produced in coordination with the CSCC, and considered information from existing scopes of work for the South Bay Salt Pond Project. In the Project Management Plan, the cost estimate will be updated with input from Corps technical sections and with additional coordination with CSCC.

WBS#	Description	Cost
JAA00	Feas - Surveys and Mapping except Real Estate	100,000
JAB00	Feas - Hydrology and Hydraulics Studies/Report	1,000,000
JAC00	Feas - Geotechnical Studies/Report	300,000
JAE00	Feas - Engineering and Design Analysis Report	1,000,000
JB000	Feas - Socioeconomic Studies	150,000
JC000	Feas - Real Estate Analysis/Report	150,000
JD000	Feas - Environmental Studies/Report (Except USF&WL)	600,000
JE000	Feas - Fish and Wildlife Coordination Act Report	60,000
JF000	Feas - HTRW Studies/Report	100,000
JG000	Feas - Cultural Resources Studies/Report	200,000
JH000	Feas - Cost Estimates	200,000
JI000	Feas - Public Involvement Documents	100,000
JJ000	Feas - Plan Formulation and Evaluation	750,000
JL000	Feas - Final Report Documentation	30,000
JLD00	Feas - Technical Review Documents	100,000
JM000	Feas - Washington Level Report Approval (Review Support)	50,000
JPA00	Project Management and Budget Documents	1,000,000
JPB00	Supervision and Administration (10%)	589,000
JPC00	Contingencies (20%)	1,295,800
L0000	Project Management Plan (PMP) for PED	80,000
Total		$7,854,800

* WBS = Work Breakdown Structure

11. VIEWS OF OTHER RESOURCE AGENCIES

Because of the funding and time constraints of the reconnaissance phase, only limited and informal coordination has been conducted with other resource agencies. Views that have been expressed are as follows:

a. California State Coastal Conservancy, USFWS and CDFG (property owners): Collectively, these agencies see the South Bay Salt Pond Restoration Project as the single greatest opportunity to improve the physical, chemical and biological health of the San Francisco Bay. The CSCC, USFWS, and CDFG are managing the long-term restoration planning process collaboratively as members of the Project Management Team. USFWS

and CDFG are the landowners/managers and are responsible for planning and conducting the interim stewardship of the salt ponds (maintenance of levees and management of water) while the long-term restoration planning is taking place. The Conservancy is working closely with the USFWS and CDFG in meeting the following goals:

- Restore and enhance a mix of wetland habitats,
- Provide for flood management, and
- Provide wildlife-oriented public access and recreation opportunities.

b. California State Coastal Conservancy (CSCC; non-Federal sponsor): The CSCC is interested in cost sharing only features that are associated with ecosystem restoration within the three complexes of former salt-production ponds and flood-protection measures necessitated by the restoration. However, the CSCC would be willing to accept money from other agencies to cover costs associated with additional flood-damage-reduction aspects of the project. The CSCC has signed an MOA with the Corps and is providing funds for the Corps to participate in the SBSP effort.

c. Santa Clara Valley Water District (SCVWD): The SCVWD views this project as an opportunity to improve flood management in Northern Santa Clara County. They are involved in a number of flood-management projects within the study area (see related Corps projects, above). In addition, they own and are interested in restoring Pond A4 in the Alviso Pond Complex. They are members of the Project Management Team.

d. Alameda County Flood Control and Water Conservation District (ACFCWCD): The ACFCWCD sees this project as an opportunity to improve flood management in the vicinity of the Alameda Creek Flood Control Channel. They are currently engaged in a project to evaluate how the acquired salt ponds adjacent to the Alameda Creek Flood Control Channel can be incorporated into that flood management system to improve flood management, reduce operations and maintenance costs and restore habitat. They hope to have their project, or components of it, incorporated into the SBSP Restoration Project. They are members of the Project Management Team.

e. As members of the Regulatory and Trustee Agency Group, the following agencies have signed a Memorandum of Understanding to facilitate interagency coordination and ensure the integration of all regulatory requirements:

1) NOAA Fisheries: NOAA Fisheries generally supports this project as furthering their interest in improving San Francisco Bay fisheries.

2) San Francisco Bay Regional Water Quality Control Board: The SFBRWQCB generally supports this project as furthering their mission to protect and improve water quality in San Francisco Bay. They have developed a set of waste discharge requirements for the Initial Stewardship Plan that provides for protection of the Bay while allowing the stage to be set for long-term restoration.

3) San Francisco Bay Conservation and Development Commission: BCDC generally supports this project as furthering their mission to protect and improve San Francisco Bay and providing public access to its shoreline.

4) U.S. Army Corps of Engineers (Regulatory Branch): The Corps has issued a permit (#27701S, dated May 10, 2004) for Interim Maintenance/Restoration.

5) U.S. Fish and Wildlife Service (Regulatory Branch): The USFWS generally supports this project as furthering their interest in recovering endangered species in San Francisco Bay.

6) U.S. Environmental Protection Agency (EPA): The EPA generally supports this project as part of its desire to increase wetland acreage throughout the U.S. In addition, the EPA was a key participant in and funding source of the Habitat Goals Project (referenced above).

f. Federal Emergency Management Agency (FEMA): Given the likelihood of the FEMA study of the same area and similar technical issues, coordination between the FEMA and Corps flood studies is anticipated. FEMA has responsibility for developing Flood Insurance Rate Maps (FIRMs). There are FIRMs for the project area; however, FEMA is commencing work on updating the FIRMs throughout the Bay Area as part of its nationwide map modernization effort. The CSCC is engaged in discussions with FEMA about becoming a Cooperating Technical Partner for the FIRM studies in the South San Francisco Bay. (Note: Although information from FEMA will be used, FEMA maps will not be used in lieu of a risk-based analysis of without-project flood damages.)

12. POTENTIAL ISSUES AFFECTING INITIATION OF FEASIBILITY PHASE

a. Continuation of this study into the cost-shared feasibility phase is contingent upon an executed FCSA. Failure to achieve an executed FCSA within 18 months of the approval date of the Section 905(b) Analysis will result in termination of the study. Issues that could impact the initiation of the feasibility phase include special language the CSCC is requesting for the next WRDA, which would allow the CSCC to produce and submit a Feasibility Report to the Corps for HQUSACE approval and Congressional authorization.

b. The schedule for signing the Feasibility Cost Sharing Agreement (FCSA) is October 2004. Based on the schedule of milestones in Paragraph 9., completion of the feasibility report would be in May 2007, with a potential Congressional Authorization in a Water Resources Development Act (WRDA) 2008.

13. PROJECT AREA MAPS

Map of the study area are provided as Enclosure A (Figure 1. Regional location. and Figure 2. Study area.).

14. RECOMMENDATIONS

I recommend that the South San Francisco Bay Shoreline Study proceed into the feasibility phase.

Philip A. Feir
LTC, En
Commanding

Date: 29 Sept 04

ENCLOSURE A

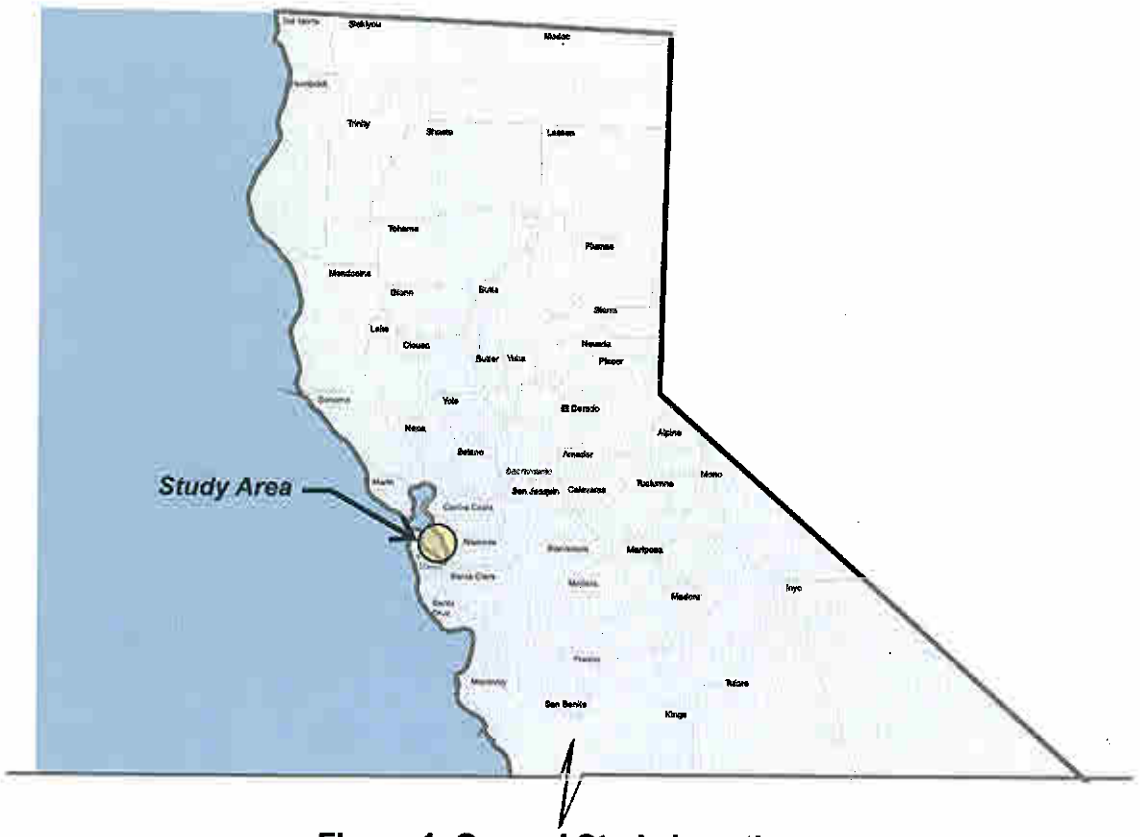

Figure 1 General Study Location

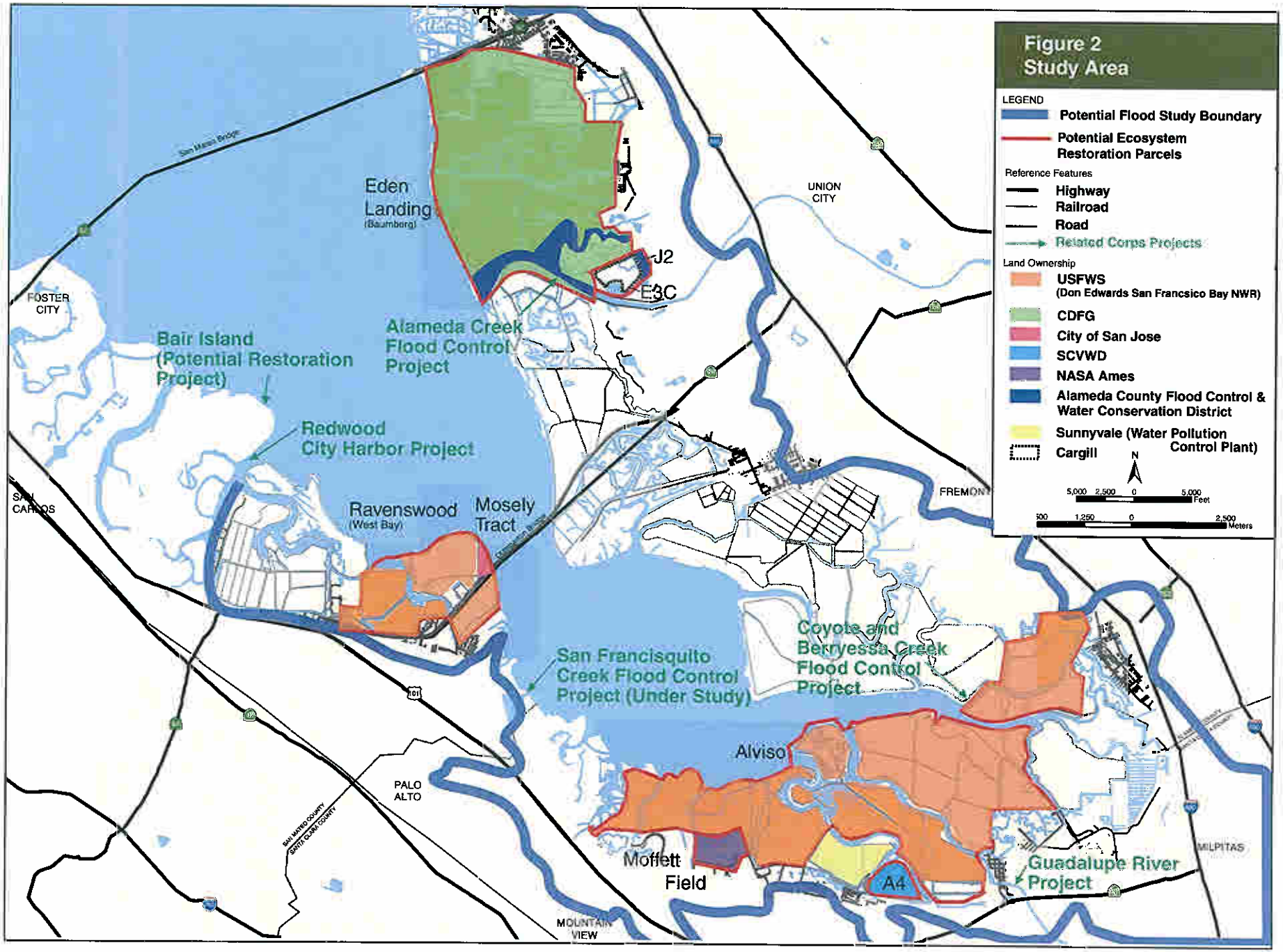
Figure 2
Study Area
LEGEND
Potential Flood Study Boundary
Potential Ecosystem Restoration Parcels
Reference Features
Highway
Railroad
Road
Related Corps Projects
Land Ownership
USFWS
(Don Edwards San Francsico Bay NWR)
CDFG
City of San Jose
SCVWD
NASA Ames
Alameda County Flood Control & Water Conservation District
Sunnyvale (Water Pollution Control Plant)
Cargill
N
5,000 2,500 0 5,000 Feet
1,250 0 2,500 Meters
Eden Landing (Baumberg)
J2
E3C
Alameda Creek Flood Control Project
Bair Island (Potential Restoration Project)
Redwood City Harbor Project
Ravenswood (West Bay)
Mosely Tract
San Francisquito Creek Flood Control Project (Under Study)
Coyote and Berryessa Creek Flood Control Project
Alviso
Moffett Field
A4
Guadalupe River Project
FOSTER CITY
SAN CARLOS
PALO ALTO
MOUNTAIN VIEW
UNION CITY
FREMONT
MILPITAS
SAN MATEO COUNTY
SANTA CLARA COUNTY
101

Enclosure A

ENCLOSURE B

Coastal Conservancy

August 9, 2004

Lieutenant Colonel Philip T. Feir, District Engineer
U.S. Army Corps of Engineers, San Francisco District
333 Market Street
San Francisco, CA 94105

Dear Lieutenant Colonel Feir:

The State Coastal Conservancy supports the development of the South San Francisco Bay Shoreline Study ("Shoreline Study") by the U.S. Army Corps of Engineers, with participation by other federal, state, and local public agencies and interest groups. There are significant opportunities for tidal and fluvial flood protection, environmental restoration, and related purposes (such as recreation) in South San Francisco Bay, along the shorelines of Alameda, San Mateo, and Santa Clara Counties.

The Conservancy is particularly interested in integrating the South San Francisco Bay Salt Pond Restoration Project ("SBSP Project") and the Shoreline Study. The SBSP Project is a separate planning effort coordinated by the State Coastal Conservancy that geographically overlaps the Shoreline Study. The focus of the SBSP Project is on developing a habitat restoration, flood management, and public access plan for the 15,100 acres of South Bay Salt Ponds acquired in March of 2003 by the U.S. Fish and Wildlife Service and the California Department of Fish and Game. The Conservancy's intention is to fold the technical and planning efforts being undertaken for the SBSP Project and the Shoreline Study into one comprehensive study for the South Bay. The Conservancy and our partners, including the U.S. Fish and Wildlife Service, California Department of Fish and Game, Santa Clara Valley Water District, and Alameda County Flood Control and Water Conservation District, will work cooperatively with the Corps to identify in the Shoreline Study portions of the SBSP Project that are recommended for Corps participation, as well as flood management and restoration improvements outside of the SBSP Project that are recommended for Corps participation.

The Conservancy is willing to provide funds for the feasibility study effort that can match the federal funds. It is anticipated that the non-federal matching funds for implementation will be a mixture of state, local, and private funds.

1330 Broadway, 11*th* Floor
Oakland, California 94612-2530
510·286·1015 *Fax*: 510·286·0470

The Conservancy appreciates the opportunity to again partner with the U.S. Army Corps of Engineers, San Francisco District, on a nationally significant project in San Francisco Bay.

Sincerely,

Sam Schuchat
Executive Officer

cc.
Jim Fiedler and Beth Dyer, Santa Clara Valley Water District
Hank Ackerman and Ralph Johnson, Alameda County Flood Control and Water Conservation District
Steve Thompson, Margaret Kolar, and Clyde Morris, U.S. Fish and Wildlife Service
Rob Floerke, Carl Wilcox, and John Krause, California Department of Fish and Game