CALIFORNIA STATE COASTAL CONSERVANCY

REQUEST FOR ENVIRONMENTAL AND ENGINEERING SERVICES

SOUTH BAY SALT POND
RESTORATION PROJECT
October 7, 2003

Request for Environmental and Engineering Services
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I. INTRODUCTION

The State Coastal Conservancy (Conservancy) intends to seek the services of a consultant firm or team[1] to conduct restoration, flood management and public access planning, modeling, environmental analysis/review, engineering design (plans and specifications), and cost estimating for the proposed restoration of wetlands and associated habitats for the 15,100-acre South Bay Salt Pond Restoration Project located in Alameda, Santa Clara, and San Mateo Counties, California (Figure 1). The restoration process will be managed collaboratively by the California State Coastal Conservancy, the U.S. Fish and Wildlife Service (FWS), and the California Department of Fish and Game (DFG). The three agencies are working closely with many other federal, state, and local agencies to accomplish this restoration project. The consultant team will be under contract to the Conservancy.

The initial contract period will be approximately 1 year. Based on the available information, the scope of services can only be defined at a sufficient level of detail to permit contracting for this period. It is the intent of the Conservancy, subject to satisfactory performance by the consultant, to augment the contract as additional project tasks are sufficiently defined. The overall planning effort will culminate with the development of plans and specifications for Phase 1 of the overall restoration effort. The scope of Phase 1 has not been defined. The consultant selected to complete the design will not be eligible to conduct the construction. It should be noted that tasks included in this Request for Environmental and Engineering Services (RFS) are defined to the current level of understanding, which is subject to change as the planning process progresses.

This request for services is organized into 7 sections as follows:

- Section I: Introduction
- Section II: Project Background
- Section III: RFS Requirements, Process, and Schedule
- Section IV: Related Contracts and Grants
- Section V: Scope of Services
- Section VI: Project Deliverables
- Section VII: Information to be Included in Consultant Submittals

Further information, including forms to be used in developing the submittal, and related information, is provided in the attachments. The Announcement for this RFS, which can be found on the project website at http://www.southbayrestoration.org/pdf_files/EnvEngServices.pdf, contains other relevant information, as referenced throughout this document. Where the RFS Announcement and this RFS conflict, this RFS shall govern.

A pre-submittal meeting for firms interested in responding to the RFS will be held on October 9th, at 1:30 p.m. in Room 15 of the State Building, 1515 Clay Street, Oakland, California, 94612. Attendance is strongly recommended.

[1] Individual consulting firms or consultant teams are eligible to respond to this RFS. The term "consultant" is used throughout for simplicity but is not intended to indicate a preference for an individual firm or team.

*****RSVP to Amy Hutzel (see contact information below) *via e-mail* is mandatory. Please indicate the number of people attending. In the event of a change in location, only those who have responded by email will be notified.*****

Interested firms should submit a statement of qualifications and a written statement of approach, as outlined in Section III. **Submittals must be received by 12:00 p.m. (noon) on Monday, November 3, 2003.** Eight (8) hard copies and six (6) electronic copies (on CD, preferably in .pdf format) of the submittal should be mailed or hand-delivered to:

State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
Attn: Amy Hutzel

II. PROJECT BACKGROUND

This section provides a brief overview of the project, proposed planning process, and roles and responsibilities of project participants. More detailed information can be found on the project website (www.southbayrestoration.org).

A. PROJECT OVERVIEW

1. General

The State of California and the Federal Government plan to restore and enhance the former commercial salt ponds (see "Background Report on the Cargill Salt Ponds" at http://www.southbayrestoration.org/background_report.html) recently acquired in the South Bay. The restoration planning effort will integrate restoration with flood management in the South Bay, and provide for wildlife-oriented public access and recreation, and education opportunities. Detailed project goals and objectives are provided on the project website at http://www.southbayrestoration.org/pdf_files/Goals.Objs.Model.pdf .

The South Bay Salt Pond Restoration Project will restore and enhance a mosaic of wetlands, creating a vibrant ecosystem. Restored tidal marsh will provide critical habitat for the endangered California clapper rail and the salt marsh harvest mouse. Large marsh areas with extensive channel systems will also provide habitat for fish and other aquatic life and haul out areas for harbor seals. In addition, tidal marsh areas help capture and eliminate pollutants, thus improving water quality in the Bay. Tidal marsh areas also provide opportunities for improving flood management. Many of the ponds will remain as managed ponds and will be enhanced to maximize their use as feeding and resting habitat for migratory shorebirds and waterfowl traveling on the Pacific Flyway. In addition, many shorebirds, including the threatened Western snowy plover, breed in dry ponds and on pond islands and levees.

Flood management will be integrated with restoration planning to ensure that, at minimum, flood protection for local communities is maintained at the existing levels. Where feasible, flood capacities of local creeks, flood control channels, and rivers will be increased by widening the mouths of the waterways by breaching ponds. As ponds are opened to the tide, flood protection will need to be provided to local communities to protect against saltwater flooding.

The acquisition of such a significantly large area of open space in the South Bay will allow for the provision of wildlife-oriented public access, recreation, and education opportunities, which will be planned concurrently with restoration and flood management. Public uses could include creation of San Francisco Bay Trail (Bay Trail) segments for biking and hiking, provision of hunting and angling opportunities, bird watching, environmental education, and other recreational opportunities.

The long-term restoration planning process will be managed collaboratively by the Conservancy, FWS, and DFG. The FWS and DFG are the landowners/managers and are responsible for planning and implementing the initial stewardship of the salt ponds (maintenance of levees and management of water) while the long-term restoration planning is taking place. Ownership of the salt ponds is shown in Figure 1.

Funding for the acquisition, Initial Stewardship Plan, and Long-Term Restoration Planning components of the project has been provided by a combination of state and federal funding, and funding from the Hewlett, Packard, Moore, and Goldman Foundations. The four foundations contributed $20 million to the acquisition. In addition, the Hewlett, Packard, and Moore Foundations are contributing a total of $15 million to the Initial Stewardship Plan and the long-term planning effort. The remainder of the funding required to conduct the Initial Stewardship Plan and the long-term planning will be provided by the State and Federal governments and donated research. Funding for the construction of the long-term restoration has not been identified yet.

The long-term planning effort has been underway for several months, and the following tasks have been accomplished:

1. Development of a project website and a bibliographic database
2. Identification of data gaps and a Data Gaps Workshop
3. Initial literature review and data collection (see Section IV)
4. Establishment of the National Science Panel (the first meeting was held on July 10 – 11, 2003) and the Science Strategy Team (the first meeting was held on October 3, 2003), and selection of the Lead Scientist
5. Establishment of the Regulatory and Trustee Agency Group (several meetings have been held, and a Memorandum of Understanding is in progress)
6. Initial public outreach (a series of workshops were held in April 2003), a Stakeholder Assessment, and development of a Public Outreach Plan and Collaborative Planning Process
7. Development of a project schedule and project management plan

Adaptive management will be a central feature of the restoration effort. The restoration project will be implemented in phases, to allow scientists to observe the effects and successes of the initial actions, and adjust the design and implementation of the remaining phases as needed. To support the adaptive management program, the restoration effort will include a robust monitoring effort.

2. Initial Stewardship Plan

The contract to be let pursuant to this RFS will support the planning of the long-term restoration. While the long-term planning effort is underway, a parallel project will be implemented to maintain the salt ponds in restorable condition. This effort will consist primarily of installing water control structures (such as culverts and tide gates) on various ponds to ensure adequate water circulation through the ponds. The objective of the Initial Stewardship Plan is to circulate sufficient water through the ponds to prevent a build-up of salt within the ponds. Discharge of water from the ponds will occur pursuant to a Regional Water Quality Control Board (RWQCB) permit, and will be subject to salinity levels and other limits. In addition to the construction of the intake and outfall structures, the Initial Stewardship Plan will include maintenance of the levees (consistent with Cargill's prior level of maintenance), and monitoring of the salt ponds and discharges. A copy of the Initial Stewardship Plan can be found on the South Bay Salt Pond Restoration project web site documents page at http://www.southbayrestoration.org/pdf_files/ISP.pdf .

Initial Stewardship will begin as individual ponds are transferred to DFG and FWS. As noted earlier, the salt ponds were acquired on March 6, 2003. Cargill, the former owner, is required to reduce the salinity in the ponds to a level that will meet discharge limitations as identified in the

RWQCB permit. Once Cargill has met the target for a given pond, the pond will be turned over to its owner. A draft Environmental Impact Statement/Environmental Impact Report (EIS/R) for the Initial Stewardship Plan will be released in the early fall 2003, and it is expected that the Final EIS/R will be released in late 2003. Permit applications have been submitted to the RWQCB, the U.S. Army Corps of Engineers (Corps), and the Bay Conservation and Development Commission (BCDC). Permits are expected to be issued shortly after the Final EIS/R is released.

The Initial Stewardship Plan is being conducted by DFG and FWS with the assistance of Cargill and contracted consultants. Activities completed to date as part of the Initial Stewardship Plan include modeling of water flows through the ponds and of salinity impacts associated with discharges from the ponds; modeling of hydrologic impacts of breaching three "island" ponds (A19, A20 and A21); limited sampling of water, sediment, and biota in some of the ponds; preparation of an Administrative Draft EIS/R, and preparation of permit applications. Some additional sampling of pond sediments is expected prior to the start of discharges. For additional information on the Initial Stewardship Plan, please see http://www.southbayrestoration.org/Documents.html.

3. Primary Challenges

The long-term restoration planning project presents numerous technical and logistical challenges. The primary technical challenges include the large size (landscape scale) of the project; incomplete data; and complex and/or insufficiently understood physical, biological, and chemical processes. Major logistical challenges include the required schedule and the large number of participating agencies, organizations, and other stakeholders. The three agencies are committed to involving stakeholders in the development of the plan as much as possible, and to conduct a transparent planning process.

4. Public Participation and Outreach Program

There are numerous participants and stakeholders. The Conservancy, FWS, and DFG are committed to robust public participation at several "tiers" of participation: collaborative public participation, public outreach, and public involvement. *Collaborative public participation* is defined as ongoing, in-depth public participation in the restoration plan development by a standing public stakeholder forum. *Public outreach* is the next tier of public participation in this project. Public outreach is defined as the overall interaction with the public, and includes such items as newsletters, annual workshops, educational briefings, presentations to interested stakeholders, site tours, booths at environmental and community festivals, and media outreach. The Public Participation and Outreach (PPO) Team is the planning group for the public outreach effort, and includes representatives from the Center for Collaborative Policy (CCP), the San Francisco Bay Joint Venture (SFBJV), the Project Management Team, and other stakeholder groups. For purposes of this RFS, the final tier, *public involvement*, is defined as the activities required specifically for NEPA/CEQA and permits.

The consultant retained for the proposed work under this RFS will implement the public involvement activities for NEPA /CEQA and will be responsible for coordination with CCP (the PPO Consultant) and preparing information for public presentations and workshops. The Technical Consultant will work with CCP, the Science Team, the Project Management Team, and others to obtain the maximum value from public meetings. CCP will implement the collaborative public participation and public outreach portions of the planning effort.

The following classes of stakeholders have been identified:

1. Government officials at the local, state, and federal levels, including flood management agencies, water and sanitary districts, vector control districts, parks and open space districts, cities and counties, and elected officials at the state and federal levels and their staff.
2. Regulatory and trustee agencies that have permitting and/or approval functions for the project.
3. Non-governmental organizations, including numerous wildlife conservation/study organizations, recreation/open space organizations (e.g., hunting, fishing, boating, hiking, biking), watershed organizations, other environmental organizations, educational organizations, and community organizations.
4. Local businesses and business organizations (e.g., chambers of commerce), including those interested in working on the project, and larger businesses that may provide funding or other support for the project.
5. Neighboring landowners.
6. Foundations who are funding (or are potentially interested in funding) the project.
7. Research and scientific organizations, including universities, federal and state research agencies (such as the United States Geological Survey [USGS] and the National Atmospheric and Space Administration [NASA]), and non-profit research organizations (e.g., Point Reyes Bird Observatory [PRBO], San Francisco Bay Bird Observatory [SFBBO]), and individual scientists/researchers.
8. The general public, including Spanish-speaking and other foreign-language-speaking constituencies.
9. Public Infrastructure including Ports, utilities, and other infrastructure owners.
10. The three agencies managing the project.

5. Functional Organization and Responsibilities of Participants

The project organization chart (Figure 2) shows the overall organization of the project. The Technical Consultant identified on the organization chart is the consultant to be retained pursuant to this RFP. The primary organizational elements and their functions are described below. Detailed information on the roles and responsibilities of each project element is provided in the Stakeholder Assessment available on the project website.

- Executive Leadership Group: The Executive Leadership Group consists of the Executive Officer of the Conservancy, the Executive Director of DFG, and the California-Nevada Operations Manager for FWS. These three are the overall decision-makers and policy leaders for the project. The Project Management Team, National Science Panel, and Executive Council report to the Executive Leadership Group.

- Project Management Team: The Project Management Team has 6 voting members and several advisory members. Voting members consist of staff from the Conservancy, DFG, and FWS; advisory members include the lead scientist, representatives of the flood management agencies (Santa Clara Valley Water District [SCVWD], Alameda County Flood Control and Water Conservation District [ACFCWCD], and Corps), public outreach coordinator, and key supporting participants. The Project Management Team runs the planning effort day-to-day, is responsible for day-to-day decision-making, and provides direction to the Science Team, Stakeholder Forum, and the Technical Consultant. The Project Management Team provides information to and receives input from all of the groups on the organization chart, and receives direction from the Executive Leadership Group. While the Conservancy is

conducting the contracting process for this scope of services, decisions are made collaboratively by the entire Project Management Team. Members of the Project Management Team have specific roles; for example, legislative liaison, local government liaison, and technical consultant manager. The technical consultant manager will serve as the main point of contact for the Technical Consultant.

- National Science Panel: The National Science Panel is a group of nationally and internationally recognized experts in technical fields related to wetland restoration. The National Science Panel will meet approximately twice a year to review the progress of the planning effort and the integration of science into the restoration plan. The National Science Panel will review and approve the Science Strategy developed by the Science Team. The National Science Panel currently includes: Denise Reed (University of New Orleans) as chair, and Michael Erwin (USGS/University of Virginia), Jorg Imberger (University of Western Australia), Sam Luoma (USGS), Jerry Schubel (Aquarium of the Pacific), Charles "Si" Simenstad (University of Washington), and John Teal (Woods Hole Oceanographic Institute) as members.

- Science Team: A 6-person core group of the Science Team is currently developing the Science Strategy for the project. Once the Science Strategy has been developed, the Science Team will be expanded to approximately 12 to 15 members who will participate throughout the planning process. In addition, the Project Team will maintain a pool of qualified individuals who can assist with peer review or specific technical tasks. The Science Team will provide guidance and science review to ensure that the planning process is scientifically sound. The Science Team consists of local experts, and is headed by the Lead Scientist. The Lead Scientist is part of the Project Management Team. The Science Team currently includes: Lynne Trulio (San Jose State University) as the Lead Scientist, and John Callaway (University of San Francisco), Edward Gross (independent), Jessica Lacey (USGS), Fred Nichols (retired USGS), and John Takekawa (USGS) as members.

  Members of the Science Team will provide technical guidance to the Stakeholder Forum and/or Public Work Groups. It is anticipated that at least one member of the Science Team will regularly attend each Stakeholder Forum and Public Work Group meeting. The Science Team will also help with specific information review tasks (e.g., generating White Papers on certain topics), developing scopes for data collection, and QA/QC (peer review) of technical work efforts. The QA/QC process may include defining the critical elements to be addressed by technical tasks, reviewing and assisting with the proposed work approach (e.g., selection of model types, identifying optimal monitoring approaches), monitoring the technical work being conducted, and reviewing completed work products. The scopes of work for the various Science Team members are determined on an as-needed basis.

- Regulatory and Trustee Agency Group: The Regulatory and Trustee Agency Group consists of agency staff from the United States Environmental Protection Agency (US EPA), National Oceanic and Atmospheric Administration Fisheries (NOAA-Fisheries), FWS-Endangered Species Branch, Corps, RWQCB, and BCDC. The Regulatory and Trustee Agency Group is working with the Project Management Team to ensure that agency concerns and requirements are addressed by the project, and that alternatives are appropriately developed so that the ultimate project design can be permitted. An MOU describing the roles and responsibilities of the Trustee and Regulatory Agencies is currently being finalized (see Section V.H).

- Executive Council: The Executive Council is composed of the agency heads of the regulatory and trustee agencies, and will resolve any policy-level conflicts that may arise. The Executive Council is managed as part of the San Francisco Bay Wetlands Restoration Program. More information on the Executive Council can be found at http://www.sfwetlands.ca.gov .

- Stakeholder Forum and Public Work Groups: The Project Management Team is currently convening a committee of core public stakeholders. This "Stakeholder Forum" and its associated Work Groups will meet regularly to provide the public and interested stakeholders with a forum for discussing and providing input on key issues. The Stakeholder Forum will be composed of 25 members representing a broad range of stakeholders (from local businesses, environmental groups, public access and recreational groups, public infrastructure entities, community advocates and organizations, local governments, and public works and public health organizations); these members are responsible for providing the opinions of the stakeholder community they represent. The Stakeholder Forum meetings are open to the public, but only the 25 selected members can vote on key issues. Representatives of the Science Team and Regulatory and Trustee Agency Group will attend Stakeholder Forum meetings, to provide input on science and regulatory issues.

  The need for Public Work Groups will be identified by the Stakeholder Forum; these Work Groups will be convened as appropriate to address specific issues or areas. Work Groups will focus on specific topics such as recreation and access, habitat design, or implementation and funding. Public Work Groups provide an open opportunity for public participation, and are designed to facilitate input from interested stakeholders who are not members of the Stakeholder Forum. Members of the Stakeholder Forum will chair each Public Work Group and report back to the entire Stakeholder Forum. It is anticipated that the Work Groups will periodically have joint meetings, to ensure that overall recommendations and input from the Work Groups are compatible (e.g., to ensure that habitat and public access recommendations are compatible). The Stakeholder Forum and Work Groups will be coordinated and facilitated by staff from CCP. As for the Stakeholder Forum, a representative of the Science Team and Regulatory and Trustee Agency Group will attend Public Work Group meetings. In addition, a representative of the Technical Consultant will attend each Stakeholder Forum and Public Work Group meeting, to understand public concerns and ideas, and to serve as a technical resource to these groups.

- Local Government Forum: The Local Government Forum consists of representatives from local government agencies (cities, counties, special districts, etc.), and local elected officials and their staff. The Local Government Forum is designed to provide a forum for discussion and input on issues of interest to local government and elected officials, and to provide a regular venue for updates to local government representatives and elected officials.

- Public Participation and Outreach (PPO) Coordination: PPO coordination occurs through a small planning team that includes representatives from CCP, the SFBJV, the Project Management Team, and other stakeholder groups. This group will define the implementation requirements for the PPO requirements, develop schedules for public outreach in coordination with the overall schedule.

- Technical Consultant: The Technical Consultant is being chosen via this RFS. The Technical Consultant will work under the direction of and report to the Project Management

Team, and will receive input from the Science Team, the Stakeholder Forum/Public Work Groups, the Regulatory and Trustee Agency Group, and the Local Government Forum. The Technical Consultant will integrate input received and employ its technical knowledge to generate technical documents, reports, and analyses for the long-term restoration planning effort that reflect the input received. The Technical Consultant will also provide informational materials for the PPO program and other venues as requested. It is anticipated that the Project Manager for the Technical Consultant will typically attend Project Management Team meetings to receive direction and to fully understand project issues.

6. Project Documentation/Archive

One of the goals of the project is to thoroughly document the restoration planning and implementation of the restoration, to record the events for posterity, to provide data on restoration activities and the extent to which they achieve project goals, and to generate and maintain public support. Comprehensive project archives have been established at the California State Library in Sacramento, and are being managed by the California Research Bureau (a part of the California State Library system). Project archives are designed to provide a thorough track record of the planning and restoration process. In addition to reports and similar documents, the archive contains copies of all meeting agendas, meeting minutes, memoranda, videos, hearing tapes, and other project-related documentation. To ensure the integrity of the collection, materials are non-circulating; copies are made available to those who request them. Electronic versions of documents are also collected wherever possible.

B. PROJECT SCHEDULE

The former salt ponds were acquired by FWS and DFG on March 6, 2003. It is anticipated that the restoration effort will be phased over many years. The goal of the planning process is to be ready to implement the first phase of the restoration construction 5 years after acquisition (i.e., a contract should be in place for Phase 1 by the end of February 2008). Permits, plans and specifications for the first phase of construction should therefore be in place in time for the bid process and award to be completed by February 2008. An overview of the schedule is provided at (http://www.southbayrestoration.org/pdf_files/SB%20Sched-Flowchart031803.pdf).

Because Phase 1 of the restoration effort must be integrated with the overall restoration effort, an overall restoration plan and adaptive management and monitoring plan must also be completed in time to design Phase 1. The scope of Phase 1 and the phasing of the remainder of the project have not been determined yet. Project phasing may be based on availability of ponds for restoration, pond location, pond characteristics such as bathymetry and hydrologic connection, or other factors. The proposed phasing of the project will be determined as part of planning effort; the Technical Consultant will work with input from the Project Management Team, Science Team, Stakeholder Forum, and Regulatory and Trustee Agency Group to develop appropriate phasing alternatives. Each group will have its own milestones to meet the needs of the project.

C. RESOURCES FOR PROJECT INFORMATION

Detailed information regarding the project is available on the project website (www.southbayrestoration.org). In addition to the project-specific information provided on the website, the bibliographic database (also accessible through the website, at http://dev.sfei.org/SouthBaySaltPond/BiblioSearch) provides access to over 270 reports and studies that are relevant to the South Bay. Two specific studies that are highly relevant to the Long-Term Restoration Planning project are the Baylands Ecosystem Habitat Goals Report

(http://www.sfei.org/sfbaygoals/docs/goals1999/final031799/pdf/sfbaygoals031799.pdf) and the Feasibility Analysis of South Bay Salt Pond Restoration, San Francisco Estuary prepared by Wetlands and Water Resources (http://www.wetlands-and-water-resources.com). Studies performed in support of the San Francisco Airport Runway Reconfiguration Project also contain pertinent background information, including modeling, regarding the South Bay.

Finally, for preparation of environmental review and feasibility study (FS) documents that meet the Corps' criteria, the Corps' Principles and Guidelines for Water and Related Land Resources Implementation Studies and the Planning Guidance Notebook can be found at http://www.iwr.usace.army.mil/iwr/planning/plguidance.htm. General Flood Management Guidelines are available from the FEMA at http://www.fema.gov/fhm/fq_gen03.shtm and for the Corps at http://www.usace.army.mil/inet/functions/cw/cecwp/General_guidance/levee.htm.

III. RFS REQUIREMENTS, PROCESS, AND SCHEDULE

This section outlines the requirements that must be met by the consultant to be considered for the proposed contract, the RFS process, and the schedule for consultant selection. Detailed information on the required form and content of the submittal is provided in Section VII. While not all of the skills and experience described in Section IV.A below may be required in the first year of work, the Conservancy and its agency partners require that the consultant be capable of providing all of the listed services.

A. GENERAL REQUIREMENTS

The consultant shall furnish all necessary labor, facilities, equipment, and materials to perform the work. The consultant shall be available to meet with the Conservancy, FWS, DFG, and other key stakeholders on a regular basis and shall keep the Conservancy advised of work progress. The consultant may subcontract preparation of portions of this work; the entire project team should be described in this submittal.

B. REQUIRED SKILLS/EXPERIENCE

The large scope, physical area, and stakeholder community associated with the project, and the complexity of the project require a wide range of skills and experience. This subsection lists the required technical skills, and then describes the required interpersonal skills for the Project Manager and key staff.

1. Technical Skills and Experience

Technical expertise and relevant experience is required for each of the following subject areas. The subject areas are listed alphabetically, and the order should not be construed as a prioritized listing.

- Biology including specific expertise in San Francisco Bay with regard to fisheries, migratory birds, endangered species, introduced species, predator management, and general familiarity with ecosystem modeling.
- Corps Planning Process/Feasibility Studies including specific expertise with respect to economic (cost/benefit) analyses in support of flood control and ecosystem restoration plans and plan authorization
- Cultural Resources Surveys and Evaluation
- Ecological/Restoration Planning and Design pertaining to estuarine environments, with specific expertise in tidal marsh restoration, managed pond restoration and management, and managed wetlands, and a thorough knowledge of existing plans and policies pertaining to wetlands in the Bay Area

- Flood Management (fluvial and tidal), including related modeling and knowledge of federal requirements for flood protection (e.g., FEMA, Corps)
- Geomorphology and Sediment Dynamics including related modeling
- Geotechnical Engineering and Levee Design
- GIS/Data Management
- Hydrodynamics (fluvial and tidal), including related modeling
- Mercury Cycling/Mercury Methylation
- Monitoring and Adaptive Management
- NEPA/CEQA/Environmental Review of Projects
- Permitting (federal, state, and local)
- Public Access and Recreation Planning, with specific expertise regarding public recreation and access in or adjacent to sensitive habitats, and trail planning and design
- Sediment Reuse, including knowledge of sediment sources, screening criteria, and placement
- Vector Control, particularly in regard to wetland restoration and management
- Water and Sediment Quality, including related modeling

Consultants should document their technical expertise, describe a technical approach for the entire scope of services described in this RFS (Section V), provide resumes and project descriptions, and provide cost estimates for the first year of the contract. Specific tasks to be accomplished in Year 1 are listed in Section VII.

2. Project Manager and Key Staff

The abilities of the Project Manager and key staff will be crucial to the success of the project. Key staff are defined as major task managers, and other staff that have a central role in ensuring the success of the project (e.g., the QA/QC leader). This project poses multiple project management challenges, which require an experienced and dynamic Project Manager and key staff. In particular, meeting the project schedule and ensuring that effective project-related communications are maintained requires a high level of organizational and leadership ability.

The Project Manager and key staff must have demonstrated organizational skills and a proven track record of delivering on time. The project manager and key staff must have experience managing and working on large, complex, multi-objective projects, including projects that require balancing competing objectives. In addition, the Project Manager and key staff must have excellent interpersonal, and written and oral communications skills. The Project Manager must be experienced at making presentations to a wide range of audiences, including the general public, and must be able to interact effectively with a wide range of stakeholders. Similarly, key staff should also be experienced with making presentations, and be able to communicate effectively with a wide range of people. References will be required for the Project Manager, and may be required for other staff.

Due to the complexity of the project, the Conservancy prefers that the Project Manager and some of the key staff have prior direct experience working together.

C. OTHER REQUIREMENTS

In addition to the skills and experience requirements outlined above, the following requirements apply:

1. Relationship of Project Manager to Lead Consultant Firm: If the submittal is by a consultant team, the Project Manager should be an employee of the lead consultant firm.
2. Commitment of Overall Project Manager: The consultant must guarantee that the Project Manager will be made available to the project for the duration of the project (unless that individual leaves the firm). A minimum availability requirement may be defined as part of the contract negotiations.
3. Project Office: The Project Manager and the lead firm's project office should be located in the San Francisco Bay Area.
4. Contract Negotiations: A copy of the Conservancy's proposed contract for this project was provided in Attachment A of the RFS Announcement at http://www.southbayrestoration.org/pdf_files/EnvEngServices.pdf. In addition, the contract may include penalties for late delivery of certain key work products. The Conservancy will enter into contract negotiations with the highest-ranked consultant firm/consultant team following submittal of qualification/statement of approach and interviews.
5. 10% Withholding: The consultant will be paid for its actual time and expenses up to the amount provided for each task in the final project budget. The consultant should anticipate that ten percent (10%) will be withheld on each task, until all work for that task is completed to the satisfaction of the Conservancy. The Conservancy must also approve all interim work products before payment.
6. Proposal Format: Detailed proposal format specifications are provided in Section VII.
7. Deliverables: All contract deliverables shall be submitted in reproducible form in electronic version on CD and in hard copy (text and graphics). More detail on deliverable requirements is provided in Section VI.

D. RFS AND CONTRACTOR SELECTION PROCESS

1. RFS Process

The RFS process consists of this written request for services, and a pre-submittal meeting. As noted in the introduction, **written submittals are due by 12 p.m. (noon) on November 3, 2003**. A pre-submittal meeting for firms interested in responding to the RFS is scheduled on October 9th, at 1:30 p.m. in Room 15 of the State Building, 1515 Clay Street, Oakland, California, 94612. Attendance is strongly recommended.

To attend the pre-submittal meeting, you must RSVP to Amy Hutzel *via e-mail*. Please indicate the number of people attending. In the event of a change in location, only those who have responded by email will be notified.

Questions on the RFS should be directed to:

Amy Hutzel
State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
(510) 286-4180
ahutzel@scc.ca.gov

Questions will be accepted in writing (via e-mail or regular mail). All questions must be received no later than October 20, 2003. Questions and responses will be updated periodically and made available on the project website to all interested parties. The final version of the questions and responses document will be posted by October 24, 2003. It is the responsibility of the consultant firm/team to check the website to determine whether additional questions and answers and/or clarifications have been posted.

2. Contractor Selection Process

FWS, DFG, the Science Team, and other project collaborators will assist the Conservancy in the evaluation of proposals and selection of the consultant. The contractor selection process will consist of three steps. The Conservancy, FWS, and DFG, Science Team, and other invited reviewers will review and rank the submittals received from the consultant firms/teams, as described below. The Conservancy may request supplemental information and will conduct interviews with the top 3 or 4 firms/teams. Interviews will be conducted by a panel composed of representatives from the three agencies, the Lead Scientist, and other public agency stakeholders. Final scores will be a combination of the score on the written submittal and the interview.

The consultant will be hired under contract to the Conservancy. The Conservancy will attempt to negotiate a contract with the best-qualified firm/team at compensation which the Conservancy determines is fair and reasonable to the State of California. If the Conservancy is unable to do so, negotiation with that firm/team will be terminated and negotiations will then proceed in the same manner with the other firms/teams on the list in order of ranking. If the Conservancy is unable to negotiate a satisfactory contract with any of the selected firms/teams, the Conservancy may select additional firms and continue the negotiation process.

The interview will last approximately 90 minutes; 15 minutes have been set aside for the presentation by the consultant. The consultant firm/team may bring a maximum of 8 people to the interview; the proposed Project Manager and at least 2 key staff must be present.

Potential contractors will be ranked based on the following factors. Each factor will be weighted as follows by the reviewers, for a maximum total score of up to 100:

- Demonstrated competence, including:
  - Specialized qualifications for the services to be performed, as described under Technical Skills and Experience starting on page 10 (25 points)
  - The firm's/team's past experience with similar projects (10 points);
  - The education and experience of key personnel, including the Project Manager (10 points);
  - The firm/team's management approach (20 points) including the firm's/team's ability to meet the project schedule; and
  - The firm/team's technical approach (20 points).

- Overall quality of the firm/team (15 points) as reflected in the submittal, including:
  - The nature and quality of the firm(s)'s past completed work;
  - The longevity of the firm(s) and amount of staff turnover; and
  - The clarity and completeness of the written submittal.

After scoring by reviewers, the Conservancy will take into consideration the following:

- Small business status of the contractor submitting a response;
- D/VBE status of the contractor submitting a response;
- The good faith effort of the contractor to subcontract with D/VBEs as set forth in Public Contract Code Section 10115.2

These will be considered as deciding factors in the instance of a tie. SBEs and DVBEs must be certified as such by the State Department of General Services – Office of Small Business and DVBE certification prior to selection.

The contract will be awarded without discrimination based on color, race, religion, sex, or national origin.

E. SCHEDULE

TASK	Duration	Start Date	End Date
Announce Request for Services	1 day	Wed 9/9/03	Wed 9/9/03
Release Request for Services to Consulting Firms	1 day	Tue 10/7/03	Tue 10/7/03
Consultant Proposal/Qualifications Submittal Period	27 days	Wed 10/8/03	Mon 11/3/03
Pre-Submittal Meeting	1 day	**Thurs 10/9/03**	**Thurs 10/9/03**
Final Day to Submit Questions on the RFS		Mon 10/20/03	Mon 10/20/03
Final Q&A Posted on Project Website		Fri 10/24/03	Fri 10/24/03
Consultants' Written Submittal Due	1 day	**Mon 11/3/03, 12 p.m.**	**Mon 11/3/03, 12 p.m.**
Evaluate Consultants' Written Submittals, Select Short List	7 days	Wed 11/4/03	Fri 11/14/03
Interview Preparation Period for Consultants	5 days	Fri 11/14/03	Tue 11/18/03
Conduct Interviews	1 day	**Wed 11/19/03**	**Wed 11/19/03**
Determine Selected Consultant	7 day	Thu 11/20/03	Wed 11/26/03
Negotiate Contract with Selected Consultant	21 days	Wed 11/26/03	Tue12/16/03
Issue Contract	14 days	Wed 12/17/03	Tue 12/30/03

IV. ACTIVE CONTRACTS/GRANTS

This section outlines several contracts currently in progress. The consultant will need to coordinate its efforts with the work being performed under these contracts. Where noted, detailed information about the contracts summarized below is provided in Attachment A.

A. MODELING SCOPE DEVELOPMENT/INITIAL ASSESSMENT OF FLOOD MANAGEMENT ISSUES

The Conservancy has retained Moffatt & Nichol Engineers to conduct three tasks pertaining to modeling and flood management:

1. Infrastructure Assessment/Interactions Assessment
2. Modeling Needs Assessment, and
3. Preliminary Levee Conditions Assessment

Tasks 1 and 2 have been completed, Task 3 is currently underway. The work conducted or to be conducted as part of these scopes of work is described in more detail in Appendix A.

B. PUBLIC PARTICIPATION AND OUTREACH

To date, the Conservancy has issued four contracts to assist with public participation and outreach. These four contracts are summarized below.

1. Center for Collaborative Policy

The Conservancy has retained CCP, a joint program of California State University, Sacramento and the University of the Pacific McGeorge School of Law, to plan the collaborative public participation and public outreach program for the project. Implementation of the public outreach effort will be conducted by CCP, the SFBJV, and other stakeholders. Implementation of the collaborative public participation efforts will be conducted by CCP staff.

The public participation and outreach planning process consists of two phases: Phase I (planning) and Phase II (implementation). The Phase I tasks which have been completed include:

- Comprehensive stakeholder assessment
- Development of communication protocols (e.g., chains of approval, project update formats)
- Recommendations regarding a collaborative planning approach for the project that incorporates appropriate public participation and technical review
- Initial organizational recommendations
- Collaborative public participation and outreach program
- Development of implementation tools and strategies

The Stakeholder Assessment, which includes findings and recommendations, can be found on the project web site starting after October 8, 2003.

Phase II will begin with the kick-off of the Stakeholder Forum and other public events, tentatively scheduled to occur in early December 2003. The consultant selected for this contract will be expected to 1) be familiar with the communication protocols and 2) support the implementation of the PPO program through development of presentations and materials pertaining to the work being conducted on the contract.

2. *Bay Nature* Magazine

The Conservancy has contracted with *Bay Nature* Magazine, a non-profit quarterly magazine that explores the Bay Area natural world, to produce a 16-page full color insert for the Spring or Summer 2004 issue. *Bay Nature* has a circulation of 15,000, and will also provide 10,000 copies of the insert as a stand-alone publication and a .pdf version of the publication.

3. Pelican Media

The Conservancy and the Moore Foundation are considering funding documentation of the South Bay Salt Pond Restoration Project. In addition to the archive provided by the State Library described in Section II.A, the documentation process may include production of a documentary film that will translate the scale and complexity of this project into terms that can be understood by the general public. The documentary will be produced by Emmy Award-winning producer Judy Irving, and will be created over a 5- to 10-year period. Two short films will be made during the production period to demonstrate the importance of the project to a wide audience.

4. San Francisco Bay Joint Venture

The SFBJV has been retained to assist with the implementation of the PPO program. SFBJV is participating in the coordination of PPO activities through their participation on the PPO team. They are currently developing a Speaker's Bureau for the greater community, which will consist of trained speakers who will provide presentations on the project to interested community groups. In addition, SFBJV will assist with the development of site tours, and provide logistical support for the PPO program.

C. DATA COLLECTION

The Conservancy has retained USGS to perform initial data collection for known, critical data gaps. The USGS scope includes 6 tasks to address data needs in the salt pond and sloughs, as follows:

1. Map the bathymetry of the 53 South Bay salt ponds in the purchase agreement for interim management and hydrological modeling of restoration scenarios.
2. Characterize water chemistry, sediments, primary productivity, invertebrate composition, and fish in ponds for consideration in initial salinity reduction and interim management.
3. Conduct monthly surveys of birds in all ponds to document baseline resources, track initial changes, and determine site fidelity of birds to certain ponds.
4. Assess the hydrology and present morphology of the South Bay sloughs by analyzing existing data.
5. Characterize invertebrate and fish communities in the slough systems and compare with South Bay pond communities.
6. Develop a land surface elevation map for the South Bay.

Work on these tasks began in Summer 2003; the projected availability of data varies from task to task. Additional information on the types of data to be collected for each task and the projected date when these data will be available are provided in Attachment A.

D. HABITAT CONVERSION MODEL

PRBO may receive Conservancy and Moore Foundation grant funding to develop a habitat conversion model (HCM) that will provide predictions regarding the effects of salt pond to tidal marsh conversion on birds. PRBO has completed the first phase of the HCM.

Under Phase II, PRBO would model the potential effects of habitat restoration on bird populations. The first phase of the HCM indicated that the specific impacts to bird populations will depend on the type of birds, the habitat mix, and habitat management. The next phase of the work (currently under consideration for funding) would include refinements to the model that will help to identify the:

- Specific characteristics of tidal marshes that will maximize bird diversity and abundance,
- Specific characteristics of salt ponds needed to support the maximum diversity of bird species and abundance of birds, and
- Optimal mix and configuration of salt ponds and tidal marshes in the South Bay to maximize the restoration benefits for all bird species.

The second phase of PRBO's HCM would span a 3-year period beginning in Fall 2003, with an analysis/modeling component and a field component.

E. DATA MANAGEMENT

The Conservancy has retained the San Francisco Estuary Institute (SFEI) to provide database management, and website hosting and maintenance services. SFEI is hosting the project website on its

server, and provides maintenance (including posting of updated information) and usage information for the website. Website content is being developed by others; it is anticipated that some website content will be generated as part of the other work to be conducted under the proposed contract.

The website provides a link to a large bibliographic database of documents and reports relevant to this project that is also being managed by SFEI. In addition to standard bibliographic information, the database contains detailed annotation including sponsors, summarized key findings, and relationships to key restoration questions. Where possible, the database contains links to the electronic versions of the actual documents. The bibliographic database will have a web interface for adding or modifying entries in the database, including uploading PDF documents. The selected consultant firm/contractor is expected to upload major deliverables to the database. Entries are held pending review and approval by the Conservancy. The design of the bibliographic database allows for future development, such as map-based reference searches, or management of additional types of data (e.g., GIS coverages, monitoring data).

In addition to the bibliographic database, SFEI is designing a relational database to store the results of the wide variety of physical, biological and chemical monitoring that will be conducted as part of this project and other South Bay projects. Accompanying data delivery specifications are also being created. The South Bay Salt Pond monitoring database will be designed to hold the following types of data: bathymetry; water quality; sediment quality; invertebrate, fish, and bird censuses; and hydrology. Raw data from the database will be made available to registered users based on access criteria that are currently being developed.

F. SCIENCE SUPPORT

As described in Section II, science review for the project is being provided by the National Science Panel and the Science Team. Both the National Science Panel and Science Team are receiving technical and administrative support for their operations (e.g., meetings, production of deliverables).

G. PROJECT MANAGEMENT SUPPORT

The Project Management Team is supported by GAIA Consulting, Inc., a consultant assisting with schedule development and tracking, project planning, development of scopes of work, and other ancillary tasks. Thus, direct support for the Project Management Team is not included in this request for services.

H. RELATED CONTRACTS TO BE ISSUED

In addition to the contracts currently in place and the contract to be issued pursuant to this RFS, the Project Management Team several other contracts may be issued during the long-term restoration planning period. These include supplemental data collection, a direct contract with the Corps for Feasibility-Study-related work, and on-going data collection/monitoring. These contracts will be issued separately and are not included in the scope of this RFS. In addition to the contracts to be issued by the Conservancy, the Moore Foundation and/or other foundations interested in the restoration project may issue contracts or grants for related efforts.

1. Supplemental Data Collection and/or Literature Review

Data collection for the long-term restoration planning is expected to occur in a phased manner. Initial, intensive data collection efforts will be followed by longer-term, on-going data collection and monitoring. Some data needs have been identified as a result of the initial data gaps assessment and data gaps workshop. USGS is currently collecting data to address some of the identified data gaps. Additional data gaps, pertaining specifically to modeling, were identified as

a result of the modeling needs assessment. The Conservancy anticipates contracting for supplemental data collection to address these modeling data needs in Fall 2003.

Literature reviews are required to compile the vast amount of existing data and assess the value to project. Literature reviews may be conducted by experts in a specific field, or may be conducted as part of this contract (see Section V.B). The Conservancy further anticipates that these literature reviews and initial technical work to be completed as part of this proposed contract and other contracts will identify additional, specific data needs. Other data needs may also be identified during the development of the Science Strategy. These data should be collected as soon as possible to ensure that project planning can proceed on the required schedule. This second round of supplemental data collection has tentatively been scheduled to begin in Spring 2004.

Certain types of data will be collected throughout the long-term planning period. These data may include wildlife use of the ponds, water quality information in the ponds and San Francisco Bay, and hydrologic data. Some of these data will be collected as part of the Initial Stewardship Plan. The remaining on-going data collection will occur as part of the long-term restoration planning.

2. Corps Work for Feasibility Phase

A portion of the project may be partially funded and constructed by the Corps. Construction requirements for project authorization in a Water Resources Development Act (WRDA) include a Feasibility Study (FS), which describes the proposed project, how alternatives were formulated and evaluated, and the federal interest in the project (as determined by economic and environmental benefits). While much of the work required for a Corps FS will be completed as part of the long-term planning process, there are certain specific requirements for a FS that are best completed by the Corps. These items include the economic analyses for flood control and environmental benefits (including the incremental cost analysis identifying the National Economic Development [NED] and/or National Environmental Restoration [NER] Plans), construction cost estimates in Corps format (Micro-Computer Assisted Cost Estimating System [MCACES]), the Real Estate Appendix, and coordination and response to comments on these three tasks and for the overall project. It is anticipated that a support-for-others Memorandum of Understanding between the Corps and the Conservancy will be set up in 2004.

V. SCOPE OF SERVICES

The scope of services described in this section is based on the Project Management Team's current understanding of the project, and project roles and responsibilities, and is subject to change. An estimated budget for the planning period, by general category, is provided for reference in Table A. The order in which the tasks are listed should not be construed to indicate that the Project Management Team intends for the tasks to be conducted in this sequence, nor is it a reflection of the importance of each task. The sequence of the work required to achieve the project goals should be described by the consultant as part of the Technical Approach (see Section VII). As noted previously, adaptive management will be a central feature of the restoration plan; all planning and related technical work must consider the role of adaptive management in the restoration process.

The consultant's primary role will be to conduct the technical work effort required for the planning process. In this role, the consultant will be expected to receive and integrate input from a wide range of participants, and assist the Project Management Team with devising solutions that will achieve a

successful balance among project objectives. Technical work efforts may be guided by input from the Science Team and National Science Panel.

The scope of services includes coordination with numerous stakeholders and numerous organizations performing work related to the project. The consultant selected for this project will have an important role in ensuring that project-related communications are effective, accurate, and timely. At minimum, the consultant will be required to coordinate its work with the following groups:

- Project Management Team
- Flood Management Partners
- Initial Stewardship Plan
- Science Team/Lead Scientist
- Stakeholder Forum
- Public Work Groups
- Local Government Forum
- Regulatory/Trustee Agency Group and Executive Council
- Public Participation and Outreach Team
- National Science Panel

Organization rules for each group and committee will spell out how communications will operate for each of the groups/teams (these rules will be developed by CCP in coordination with each group or committee). Coordination activities performed by the consultant may include attending working meetings, presentations, preparing written material on technical subjects, and ensuring that the various groups are kept up to date on the progress of the technical activities. All presentations and written materials will be reviewed by a member of the Project Management Team and/or the PPO Team prior to their release to any other groups/teams.

All written materials must also be made available for archiving at the State Library. Two extra hard copies of all written and related materials (e.g., videos, public hearing tapes) must be supplied to the Conservancy. In addition, the final electronic version of each document, in pdf format, must also be supplied to the Conservancy for inclusion in the State Library archives. The Conservancy will regularly transmit hard copy and electronic documentation to the State Library for archiving, and will maintain its own archive.

A. TASK 1: ALTERNATIVE DEVELOPMENT

Alternative development will be an iterative process. Initially, the consultant will develop a opportunities and constraints analysis for the project. The opportunities and constraints analysis will be used to help develop detailed (quantitative) goals for the project. These goals, including goals pertaining to geographical distribution of restoration and recreation/access components, schedule, and overall habitat mix, will be used to define Initial Restoration Concepts. Initial Restoration Concept will be screened and refined into Initial Restoration Alternatives. Initial Restoration Alternatives will be refined into Preliminary Restoration Alternatives based on public input, initial modeling, and preliminary environmental and cost review. The Preliminary Restoration Alternatives will be similarly refined into Final Restoration Alternatives, which will provide the basis for environmental review and a Corps Feasibility Study. Concurrent with the development of the alternatives, the consultant will develop a description of existing conditions, and a "No Action" alternative that describes likely conditions in the project area absent the project.

Due to the size and the complexity of the project, implementation of the restoration effort is expected to be phased. Proposed phasing will be determined as part of the alternatives development process, and will reflect input from the Science Team, Regulatory and Trustee Agency Group, Stakeholder Forum, and Project Management Team. The overall goal is to begin construction of Phase 1 of the restoration by March 2008. While implementation of the project will be phased, project alternatives must address the entire project area, and provide an overall template for implementation of the project. Project alternatives will be based on the Science Strategy and reflect input from the wide range of stakeholders.

The project may also be broken down into components that can be constructed separately, have separate functions, are constructed by different organizations, or are funded by different mechanisms. For example, flood management components of the project may be cost-shared by and constructed by the Corps, while restoration and recreation elements may be constructed by the State or another entity. In this case, Phase 1 would contain separate restoration/recreation and flood management components. The alternatives development process will culminate with the development of a Restoration Concept Plan that describes the Final Alternatives. The Restoration Concept Plan will serve as the basis for the environmental review. The Project Management Team desires substantial involvement from the consultant's environmental review staff in the alternative development process (i.e., screening-level environmental review of preliminary alternatives will be an integral aspect of defining final alternatives).

Each of the steps described above is described in more detail below.

1. Task 1a: Opportunities and Constraints

The opportunities and constraints posed by the physical, biological, chemical, regulatory, and political conditions affecting the project provide the framework for project planning. The initial opportunities and constraints analysis will be used to educate the public about feasible ranges and types of actions for the project, will provide the underlying basis for discussions in public work groups, and will be used to help develop the Initial Restoration Concepts.

The consultant will integrate guidelines and information from the Science Team, Project Management Team, Stakeholder Forum, and other stakeholders. Opportunities and constraints will be identified at the landscape level as well as the detailed (specific pond, individual species) level. In addition to environmental factors, flood protection, public needs, and constraints imposed by existing plans and land ownership, the opportunities and constraints analysis must include an evaluation of timing and funding of the project, as well as other factors such as the proximity of developed areas to the project area, cost and level of needed maintenance, surrounding land use, and long-term population growth in the project area. The results of the initial opportunities and constraints analysis will be described in an Opportunities and Constraints Summary Report suitable for release to the general public. A refined opportunities and constraints analysis and associated report may be prepared after initial modeling has been conducted, and more extensive existing condition information has been developed.

2. Task 1b: Detailed Project Goals, Initial Restoration Concepts, and Alternative Evaluation Criteria

Overall project goals and objectives have been developed by the Project Management Team, and were reviewed by the National Science Panel, Regulatory and Trustee Agency Group, and stakeholders interviewed by the CCP. Further input is expected from the Science Team and the general public. Similarly, the process of defining restoration priorities and schedules, proposed

habitat mixes, and initial restoration concepts will be led by the Project Management and Science Teams, with input from applicable stakeholder groups.

Defining detailed goals will include defining restoration priorities and general schedules for all areas of the project site (East Bay, South Bay, and Peninsula ponds). Goals will address flood management and recreation/access as well as restoration. Restoration priorities will consider restoration science principles as well as constraints and opportunities associated with each of the ponds/areas, and will first be defined by the Science Team. Once restoration priorities have been defined, an initial range of habitat mixes for each area and a range of mixes for the complete project will be defined for discussion purposes. The initial habitat mixes will be coupled with recreation/access options and flood management options to arrive at Initial Restoration Concepts for each area.

In addition, to increase the transparency of the alternative screening process, evaluation criteria must be developed to screen alternatives. The evaluation criteria will be applied at several stages of alternative development, and must be clearly comprehensible to the public. Public input will be crucial in developing evaluation criteria, and defining relative priorities among evaluation criteria. Evaluation criteria will be developed in collaboration with the Science Team, Project Management Team, and other stakeholders. Development of evaluation criteria will be an iterative process. Evaluation criteria will initially be developed before the Initial Restoration Concepts are defined.

The consultant will prepare an Initial Restoration Concepts Memorandum to summarize the information developed as part of this task.

3. Task 1c: Existing Conditions and "Without Project" Conditions/No Action Alternative

A key element in developing appropriate restoration concepts is to accurately describe existing conditions. For this task, the consultant will compile and document available information regarding the physical, biological, and chemical conditions in the project area and potentially-affected near-by areas. Additional data collection may also occur (under a separate contract). This step will include an analysis of existing flood risks, hydrodynamic conditions, and ecological conditions (using the model(s) developed for the project as part of Task 3); available recreation and public access resources; land use information; and known trends affecting resources in the project area (e.g., water quality has generally been improving since the 1970s). The Information Review (see Task 2) will provide much of the information needed to describe existing conditions. The consultant will prepare an Existing Conditions Report to summarize the information described above. The Existing Conditions Report will include much of the information required for the NEPA/CEQA Environmental Setting Report (ESR) (see Section V.G). Finally, the model(s) developed for the project should be evaluated by modeling existing conditions.

In addition to the need to describe existing conditions, NEPA and CEQA require analysis of a "No Project" alternative. "No Project" is not interpreted to mean that no activity would occur in the project area; rather the "No Project" Alternative represents the most likely conditions in the project should the proposed project not be implemented. It is used as the basis for comparison for the environmental review, including the EIS/R, and any Endangered Species (Section 7) consultation that may be required.

No Project Alternative also forms the basis for establishing habitat benefits that are used in Corps Feasibility Report (there is it referred to as the "Without Project" Conditions). Habitat values under the No Project Alternative are compared to habitat values associated with action alternatives. The No Project Alternative must be developed in sufficient detail to allow an assessment of likely habitat changes over the implementation and development period of the project, which may be as much as 100 years or more. The No Project Alternative description must include a description of how flood management would occur in the absence of the project, and how recreational uses would be developed in the absence of the project. It would also need to address how planned restoration projects in the vicinity of the project area would proceed in the absence of the project. The "No Project" Alternative must be modeled in the same way as the action alternatives.

The development of the "No Project" Alternative/"Without Project" Conditions will be summarized in a report. In addition to a detailed description of the "No Project" Alternative/"Without Project" Conditions, the report must provide a detailed rationale for defining the "No Project" Alternative/"Without Project" Conditions in this manner.

4. Task 1d: Develop Initial Restoration Alternatives and Project Phasing

The Initial Restoration Concepts will be screened according to the evaluation criteria developed as part of Task 1b to provide a manageable set of Initial Restoration Alternatives for further analysis. The Initial Restoration Alternatives will incorporate project phasing considerations. The Initial Restoration Alternatives will form the basis for the first round of physical processes and ecological modeling. For the purposes of the environmental review (EIS/R), these Initial Restoration Alternatives will serve as the basis for conducting the scoping.

5. Task 1e: Develop Preliminary Restoration Alternatives

After the first round of modeling has been completed, the Initial Restoration Alternatives will be refined to more effectively meet the project goals and objectives (e.g., to reduce potential adverse impacts, improve outcomes for target species, and/or accelerate the rate of habitat restoration). These Preliminary Project Alternatives will form the basis for the preliminary design and cost estimating effort. Each Preliminary Project Alternative will incorporate flood management and public access/recreation, mixes of habitat, and appropriate project phasing. If appropriate , geographic areas may be addressed separately to allow the project to be broken into smaller subprojects during design, permitting, and implementation. Extensive public participation will accompany the development of the Preliminary Project Alternatives. This public participation effort will be managed by the CCP; the consultant retained for the work conducted pursuant to this RFS will integrate the public input with input from the Science Team, Project Management, and other stakeholders. The development of the Preliminary Restoration Alternatives will be summarized in the Preliminary Restoration Alternatives Memorandum, which will be suitable for distribution to the public.

6. Task 1f: Preliminary Design and Cost Estimating/Define Final Project Alternatives

Preliminary cost estimates and design information are required to select the final alternatives (alternatives that will be evaluated in the EIS/R and Corps FS). Preliminary design will most likely be based on "unit" quantities. The consultant will develop cost and activity (equipment use, personnel) estimates for unit quantities, such as construction of 100 linear feet of levee or

construction of 100 linear feet of habitat restoration features such as channels and berms. Unit estimates will also be developed for managed pond features, flood management features, recreational features, sediment import, monitoring and adaptive management activities, and operations and maintenance (including management of invasive species and predators, and maintenance of recreational facilities). Where geographic factors may have a significant impact on unit costs (e.g., levee sections may vary significantly across the project area), multiple unit quantity and cost estimates may be developed (e.g., 3 to 4 standard levee sections).

These unit estimates can then be applied to a variety of restoration scenarios to provide a relative assessment of costs. Preliminary design efforts will be limited to generating typical quantity estimates (e.g., amount of soil removed per linear foot of levee breach, typical culvert sizes and lengths for managed pond water control structures, average frequency of required maintenance and operations activities) and generally locating constructed features on a site plan. Following design of the "unit" features, the consultant will work with the Project Management Team to define the estimated total quantities of each type of feature required for each Preliminary Project Alternative, and generate a comprehensive estimate of quantities, equipment use, and personnel. The preliminary design effort is equivalent to approximately the 15% level of design.

The preliminary design will also include an assessment of construction methods. The consultant will identify the various construction methods, especially bioengineering approaches, available for each "unit" included in the preliminary design. The goal is to identify the most environmentally sound construction method for each type of activity and to assess environmental trade-off between the various construction methods. For example, there may be multiple ways to deliver fill for levee construction, or multiple ways to construct a channel in a pond. Due to the size of the project, cumulative impacts from construction activities could be significant, and the selection of environmentally friendly construction methods will help reduce overall construction-related impacts. In addition, due to the sensitive nature of the construction area, construction access and staging areas may have to be addressed in the preliminary design. The work completed for the preliminary design and cost estimate will be documented in a Preliminary Design and Cost Estimate Report.

The preliminary design and cost estimating results will be used to further refine the project alternatives and determine the Final Project Alternatives. Extensive scientific review and public participation will accompany the development of the Final Project Alternatives. The Final Project Alternatives will be evaluated in the EIS/R, and will be subject to detailed modeling to more accurately predict the potential impacts associated with implementation of the alternatives.

7. Task 1g: Conceptual Design/Restoration Concept Plan

Concurrent with the development of the Final Project Alternatives, the consultant will prepare a Restoration Concept Plan. The objectives of the Restoration Concept Plan are to document the alternatives development process, inform the public and public officials about the Final Project Alternatives and their relationship to the Science Strategy, and serve as the conceptual design report. The Restoration Concept Plan will present the Final Alternatives in a concise, comprehensible fashion. The Restoration Concept Plan will include a summary of the alternatives (and components) considered, describe how alternatives development and screening was conducted, describe the likely phasing of the restoration effort, and provide graphics depicting the Final Alternatives. It will provide sufficient detail regarding project construction (e.g., quantities, methods, schedule) and development to allow for NEPA/CEQA environmental review.

8. Task 1h: Recommended Alternative

Once the Final Alternatives have been developed, the alternatives will be evaluated in the EIS/R and the Corps Feasibility Report (for those components that may be cost-shared by the Corps). The information generated from the EIS/R, preliminary design and cost estimate, and detailed modeling will be used to conduct a comparative evaluation of the Final Alternatives and select a Recommended Alternative for design. Extensive public participation will accompany the identification of the Recommended Alternative.

B. TASK 2: INFORMATION GATHERING

One of the challenges faced by the project is the wealth of available information that is pertinent to the project area and/or restoration, flood management, and recreation/public access efforts. The Data Gaps Workshop concluded that a literature review was required for most potential data gaps identified (i.e., before it can be determined whether data gaps in fact exist for that specific topic). Much of the information to be compiled and reviewed is either unpublished or has not been peer-reviewed (i.e., is considered part of the "gray" literature. Table B provides a summary of the types of information that will need to be collected; the number of topics to be researched by the consultant has not been determined. The Project Management and Science Teams will provide the consultant with direction on data needs. The information gathering effort will occur very early in the project, and information generated from this task will be used to support most other tasks, including the alternative development activities.

This task consists of conducting literature reviews on a variety of topics. The scope of each literature survey will include:

- Identifying potential sources of information/data
- Contacting individuals and organizations that may have relevant data (published or unpublished)
- Compiling the information
- Preparing a technical memorandum summarizing the data and providing an assessment of data quality and utility
- Adding relevant entries to the bibliographic database via the project website, and
- Making recommendations for further data collection, if appropriate.

This task will begin with developing a data acquisition plan that lays out the data to be collected, the sources, how the information will be compiled, and the organizations and individuals to be contacted. The data acquisition plan will include formatting protocols/standards for data. Science Team members will be available to serve as resources for identifying potential data sources and information, and SFEI and Science Team members will provide input on data formatting protocols/standards. Science Team members may also provide expert technical review of the data/information collected.

Where additional data collection is recommended, the consultant may be asked to prepare a scope of work for the additional data collection effort; in other cases, the data collection scope will be authored by the Science Team. Data collection will typically be completed under a separate contract.

Information gathering activities will likely involve collaboration with other organizations collecting data (e.g., USGS), other organizations conducting restoration projects in the South Bay, the Initial Stewardship Plan, and potentially Bay-wide data collection/monitoring programs. Collaboration may include direct sharing of specific information gathering tasks (e.g., each organization compiling relevant information for a specific geographic area, with one organization compiling all information collected and then distributing the compiled data sets/information to all participating organizations), or dividing up topics and

exchanging completed literature surveys. The Project Management Team intends to work closely with these various groups to minimize redundancy in the information/data consolidation effort. Data related to current recreational use and public access in the project area will be compiled by the Recreation and Public Access Working Group. A list of data gaps compiled at the data gaps workshop is provided at http://www.southbayrestoration.org/pdf_files/Datagaps%20Workshop%20Notes.pdf .

C. TASK 3: MODELING OF PHYSICAL AND ECOLOGICAL PROCESSES

Modeling will be crucial to understanding the potential effects of various types of restoration alternatives on the existing landscape, species composition, time required for restoration, flood impacts, and impacts to the hydrodynamics of the South Bay and San Francisco Bay. The modeling task includes determining the appropriate model(s), model set-up/calibration, initial/screening runs, preliminary runs (to narrow down Preliminary Project Alternatives to a set of Final Alternatives), detailed runs (for the Final Alternatives considered in the environmental review and the Corps FS, and to help identify the Recommended Alternative for design), and supplemental runs (to clarify specific issues).

The objectives of the screening level modeling will be to characterize existing conditions, identify opportunities and constraints, and aid in the development of alternatives for future analysis (evaluate potential effects and restoration timelines on a relatively coarse scale). The alternatives will then be refined into Preliminary Restoration Alternatives. Modeling of Preliminary Restoration Alternatives will be structured to evaluate impacts and benefits associated with the various restoration options, and to arrive at a manageable set of Final Project Alternatives (likely 5 to 10 alternatives). The Final Project Alternatives analysis, environmental review, and design phases will require additional, more detailed modeling. The Final Alternatives will be modeled in detail to allow potential impacts and cost to be quantified. Supplemental modeling may be required to address certain very specific environmental impact, permitting, or design questions.

Modeling of physical processes will be required to address hydrodynamic considerations (including potential flood effects), geomorphic changes, and related factors, such as:

- Sediment budget and geomorphic processes
- Near-field and far-field effects of restoration
- Pond management requirements and options
- Flood management requirements/levee improvements
- Hydrodynamic effects on the stability of existing or proposed levees
- Infrastructure constraints
- Contaminant cycling and distribution
- Nutrient cycling
- Salinity impacts to local waterways and groundwater

Modeling of physical processes will be an iterative process, with increasing refinement/precision of the model as alternatives are defined more precisely and additional physical data are collected. A phased modeling strategy should be developed that is need(s)-driven, and tied into the restoration project planning and design timeline. Initially, to allow development of screening-level restoration alternatives, modeling of physical processes must answer the following questions:

- How will the restoration alternatives alter the sediment budget for South Bay, and redistribute sediment within South Bay, and how will this impact the following:
    a. Restoration timelines?
    b. How the geomorphology of the project area will change (redistribution of habitats)?

- What is the extent of the project's effect on existing hydrology, hydrodynamics, aquatic ecosystem, and/or landscape?
- What are the flood management implications of various actions?

The above three questions will allow the Project Management Team to answer the overall question of the types of habitat that can be restored, where, and how much of various types of habitat are feasible under various assumptions regarding sediment import. The technical topics to be addressed by the modeling of physical processes are shown in Table C.

Ecological modeling may also be required. Ecological modeling performed by the consultant would be qualitative, and would complement the ecological modeling already being performed by PRBO. Ecological models will show the qualitative causal linkages between physical processes and species or groups of species identified in the Conceptual Model as important restoration targets. Ecological processes such as primary productivity and nutrient cycling might also be the targets of modeling. The Conceptual Model is being developed by the Science Strategy Team and this model will determine the ecological modeling needed.

Modeling Reports or Technical Memoranda pertaining to modeling of physical processes will be generated by the consultant upon selection of the model(s) and modeling strategy (Technical Memorandum), completion of model set-up and calibration (Modeling Report 1), completion of Screening Level Modeling (Modeling Report 2), completion of Detailed Modeling for Alternatives Analysis (Modeling Report 3), and completion of Supplemental Modeling (Modeling Report 4). If multiple physical process models are used, set-up and calibration of models following the initial set-up and calibration phase will be documented in Technical Memoranda incorporated into later modeling reports. Ecological modeling efforts will also be documented in Technical Memoranda.

QA/QC will be on-going throughout the modeling process and will include review of model set-up and calibration (for each model used), and the various iterations of modeling runs. Independent technical review of the modeling effort will be provided by a designated working group of experts from the Science Team.

D. TASK 4: FLOOD MANAGEMENT, PROTECTION, AND ENHANCEMENT

Project implementation will affect existing flood protection levels in the South Bay. The project has committed to maintaining existing levels of flood protection to developed/urban areas and to seek opportunities to enhance flood protection, where feasible. The project presents a unique opportunity to restore historic connections to floodplains near the mouths of creeks and sloughs. Flood management needs may drive certain aspects of the design (e.g., placement of levees and trails) that will influence the overall restoration design.

Flood management and enhancement will include work with the ACFCWCD, SCVWD, San Mateo County Flood Control Agency, and the Corps. Because the project area consists of three geographically distinct regions, the work with each agency is relatively independent of the work with the other agencies. The Corps will be involved with the flood management component of the project, and will perform its own risk and economic analyses to assess the federal interest in flood control in the three geographic areas. The level of flood protection appropriate to each area will be defined in consultation with the flood agencies and the Corps.

This task includes four subtasks:

1. Needs Assessment
2. Opportunities and Constraints Assessment
3. Integration with Restoration
4. Preparation of Concept Plan

Evaluation of potential flood impacts resulting from the project will be conducted as part of the alternatives evaluation. The modeling task will include an assessment of the likely extent of tidal and fluvial flooding under various restoration alternatives, and will evaluate various alternative designs for flood management.

The needs assessment will build on the work currently being conducted by Moffatt & Nichol. The needs assessment will quantify the level of flood protection required for each geographic area, and identify standard levee design criteria that will result in a sufficient level of flood protection for each area. The consultant will also work with the flood management agencies to identify opportunities for combining restoration and flood management efforts, and constraints on restoration that may be imposed by flood management needs. ACFCWCD and SCVWD have already designed certain flood protection elements that relate to the salt ponds; other needs and opportunities may exist. The results of the needs and opportunities and constraints assessments will be used to identify the various options available for integrating restoration and flood management. The work completed under this task will be described in the Flood Management Concept Plan. The Flood Management Concept Plan will describe the project's proposed approach to flood management, flood management needs, constraints on flood management, and opportunities for integrating flood management and restoration. The Plan will describe both the fluvial and tidal flooding may occur in the project area. The Concept Plan will be used to provide input to the alternative formulation process.

E. TASK 5: DETAILED DESIGN AND COST ESTIMATING OF COMPONENT PROJECTS

The design for the project will consist of detailed design for Phase 1 of the project and preliminary design for the remainder of the project. The detailed design will begin after an alternative has been selected through the environmental review and Corps FS processes. As noted earlier, the goal of the design and cost estimating effort is to complete the detailed design and have a construction contract in place for Phase 1 of the restoration by March 2008. Sufficient time must be built into the schedule to allow for the contracting process to be completed by March 2008. The design effort will include developing an implementation plan that describes the proposed phasing of the project, environmental review and permitting of subsequent phases, and the adaptive management and monitoring process. The Project Management Team requires a cost estimate for the first phase of construction and an overall estimate of the implementation and maintenance and operating cost for the project, so that a funding strategy can be developed. As with modeling and alternative formulation, design and cost estimating will be an iterative process. The detailed design and cost estimate will build on the preliminary design and cost estimate completed as part of Alternative Development (Task 1). Construction access and staging areas must be clearly defined in the detailed design, to ensure protection of the sensitive habitats in the project area.

Detailed design will be required for Phase 1 of the project (the scope of Phase 1 and hence the extent of this detailed design effort has not been defined). The detailed design effort will culminate in the preparation of bid-ready plans and specifications. Interim deliverables for the detailed design will consist of a 35% level of design, 65% level of design, 95% level of design, and 100% level of design. A detailed cost estimate will accompany the plans and specification at each stage of the detailed design. The detailed design package will be reviewed at all four stages. Reviewers are likely to include interested stakeholders and technical experts. Each stage of the design is considered a major submittal.

The detailed design for Phase 1 will be accompanied by a refined preliminary design for the remainder of the project. The refined preliminary design will include more specific detail for the various unit features than was developed for the preliminary design. For example, channel designs may be refined and water control structures for managed ponds may be defined in greater detail. In addition, the consultant should expect that features that were not fully developed during the preliminary design (e.g., recreational features for certain areas) will be included in the refined preliminary design and cost estimate. As for the preliminary cost estimate, the consultant will generate an overall estimate of quantities, equipment use, personnel, and cost for the refined preliminary design. Construction access and staging area information may also be updated. The assumptions made and calculations completed for the detailed design and refined preliminary design will be presented in the Detailed Design and Cost Estimate Report.

Because the project will be phased, design will progress to different levels of completion for different phases. It is possible that the consultant will be asked to begin detailed design for other phases of the project, and develop, for example, a 35% level of design for features to be constructed several years after Phase 1. The precise requirements for the detailed design effort will be defined when that work is contracted.

The detailed design effort must be coordinated with the permitting effort to ensure that the proposed design can be permitted. Similarly, for any components to be constructed by the Corps, the review of the design documents must be coordinated with the Corps, and must include preparation of a Detailed Design Report (DDR) in Corps format to accompany the plans, specifications, and cost estimates. The DDR would be based on the Detailed Design and Cost Estimate Report, but may need to include information not required for the Detailed Design and Cost Estimate Report. Cost estimates for Corps-constructed features must be in MCACES format. Supplemental modeling may be required to define specific sizes of design features and quantities of materials.

Following award of the construction contract, the consultant will provide responses for requests for information (RFIs) from the contractor, conduct on-site inspections, and provide review and consultation as required.

F. TASK 6: FEASIBILITY REPORT FOR COMPONENTS TO BE CONSTRUCTED BY CORPS

If the project is to receive funding for restoration and/or flood management through the normal WRDA process, a Corps FS and Chief's Report are required in addition to the Final EIS/R and Record of Decision (ROD). The results of the FS are documented in the Feasibility Report (FR). Technical studies used in conducting the FS are included in an Engineering Appendix to the FR. This task consists of developing the Feasibility Report and Engineering Appendix. The FR will most likely address only a portion of the overall project; the project elements to be included in the FR will be determined once project goals and objectives and project alternatives have been formulated to a sufficient degree of detail.

The FR will provide, in accordance with standard Corps format and at the appropriate level of detail, sufficient information to allow submittal of a Chief's Report by Corps Headquarters to Congress. As discussed earlier, Corps will provide certain elements of the Feasibility Report that follow a unique Corps methodology. These items include:

- Real Estate Plan
- Cost Estimates (MCACES)
- Incremental Cost Analysis and Benefit/Cost Analysis (including determination of the NED for flood management and NER for restoration)

- Economic Assessment

Although the Corps will conduct the economic assessment (which will include development of benefit estimates for flood control), the consultant should be thoroughly familiar with the procedures used by the Corps to develop economic benefit estimates, and conduct the Incremental Cost Analysis (ICA) and benefit/cost analysis. The consultant will help the Project Management Team structure the project, including the potential project increments, so that project benefits can be fully accounted for and that logical project increments are analyzed in the ICA. To conduct the ICA, the Corps requires the habitat values from the Habitat Evaluation Procedure (HEP) conducted as part of the Coordination Act Report (CAR). The CAR will be prepared by the appropriate section within FWS.

The Conservancy anticipates that most of the information required to prepare the FR and Engineering Appendix will be developed by the consultant as part of other tasks. It is the consultant's responsibility to ensure that tasks such as the alternative development process are documented in sufficient detail for use in the FR, and that the FR is truly reflective of the technical work conducted for the project (i.e., there can be no discrepancies between the FR and other documents prepared for the project).

The consultant should expect to generally follow the standard Corps planning process, including QA/QC review at the District and Division levels of the Corps, milestone conferences, and regular project delivery team meetings. The consultant firm/team should anticipate Corps QA review for the Administrative Draft FR, Draft FR, Administrative Final FR, and Final FR, as well as an Independent Technical Review of the Final Feasibility Report. The consultant should plan on conducting a comprehensive without project conditions briefing (F3 conference) and an alternative formulation briefing (AFB/F4 conference) with Division and Headquarters staff from the Corps. An additional conference may be required to discuss conceptual alternatives and the proposed alternative evaluation process.

The Corps staff participating in the development of the FR will be fully integrated into the project delivery team. The consultant will be responsible for ensuring that QA/QC conducted for the FR and technical products included in the Engineering Appendix meets the Corps' QA/QC requirements, and for documenting compliance with QA/QC requirements.

G. TASK 7: NEPA/CEQA COMPLIANCE AND RELATED DOCUMENTATION

The EIS/R will be a joint federal-state document; the lead agencies will be FWS for NEPA and DFG for CEQA. The only potential cooperating agency for the EIS/R will be the Corps. The Corps is likely to participate in the EIS/R as a sponsor for a portion of the proposed project. Other regulatory, jurisdictional, and trustee agencies will provide input throughout development of NEPA/CEQA documentation. In addition, other agencies such as flood management agencies, cities and counties, and special districts may also tier off the programmatic EIS/R to conduct environmental review for related projects under their review. The Final Project Alternatives included in the Restoration Concept Plan will be analyzed in the EIS/R. The consultant is responsible for ensuring there is sufficient detail for each Final Project Alternative to allow analysis at the program and/or project level, as appropriate.

Document and notice preparation and distribution will be accomplished by the consultant. The EIS/R will be primarily a first-tier programmatic document assessing the Restoration Concept Plan, and will also

include project-level analysis for the 1 to 3 project components[2] comprising Phase 1 of the restoration project. The project components included in the EIS/R may include the following elements:

- modifying the water management regime(s) within ponds (e.g., opening ponds to the tides by breaching, increasing circulation in managed ponds, varying the water levels and salinities in existing ponds, converting existing ponds to seasonal wetlands)
- modifying the physical landscape (construction or removal of levees, construction of islands), and
- control of invasive species and/or predators, and related actions

While some of the project components listed above will also have been implemented for as part of the ISP, the EIS/R will focus only on activities that would be conducted as part of the long-term restoration effort.

Physical activities and facilities associated with Phase 1 may include earthwork on land or in the water, such as breaching and construction of levees; construction of starter channels, berms, or other features in one or more ponds; construction of trails or other public access features; installation or modification of water control structures; and possibly importing and placing sediment in one or more ponds. In addition, there will be an active monitoring and adaptive management program that will be implemented as part of the restoration effort.

The required public involvement under CEQA and NEPA will be integrated to the extent possible with the other public outreach activities, but it will be the responsibility of the consultant to ensure that public involvement requirements pertaining to NEPA and CEQA have been met. The PPO program includes an educational component designed to inform the public about the types of comments appropriate at each stage of the document, and how public input on the EIS/R can be provided. This portion of the PPO program will be implemented by the CCP.

Due to the large geographic extent and likely high visibility of the project, the public involvement effort will require a more extensive series of meetings and notifications than a typical NEPA/CEQA effort. This task includes preparing and publishing the required notices; conducting scoping meetings in the East Bay, South Bay, and Peninsula (and other locations as necessary); conducting public meetings for the draft EIS/R; and preparing the final EIS/R and associated documentation (e.g., draft findings, mitigation monitoring and reporting program). The consultant will file the notices and submit them for publication in the Federal Register. All notices will be provided in hardcopy to the entire address list, and may also be published electronically. All scoping meetings and public hearings should be recorded by a court reporter.

1. Task 7a: Scoping, Environmental Setting Report, and Data Gaps Memorandum

The consultant will implement the scoping effort. Scoping is to occur relatively early in the alternative development process to ensure ample opportunity for formal public input into the development of alternatives. Scoping comments will be compiled and sorted into topic categories for consideration in the alternatives development task.

Following the scoping period, the consultant will prepare an ESR, also referred to as a 50% administrative draft EIS/R [ADEIS/R]). The ESR will document existing conditions at the project site, as well as the regional and regulatory settings. Given the volume of available information, this will be a substantial effort, and will be completed while project alternatives are

[2] As used in this RFS, the term "project component" means a discrete restoration activity that is a logical part in a chain of contemplated actions.

under development. The other benefit of completing this report relatively early is that it allows further identification of data gaps, as well as further refinement of the opportunities and constraints analysis.

Once the ESR has been completed, it will be reviewed by the Project Management Team and select stakeholders, and QA/QC'd in advance of the complete ADEIS/R, reducing review and comment time on the Administrative Draft EIS/R. The ESR should contain the following elements for each resource area:

1. Study area
2. Regulatory setting
3. Physical setting
   a) Regional setting
   b) Local/project setting

The ESR should be formatted so as to facilitate its inclusion in the EIS/R. After completing the draft ESR, the consultant will also prepare a data gaps memorandum, which will summarize any data gaps identified while developing report, identify the high priority data needs, and describe the potential effects of not addressing each data gap. Other important data limitations (e.g., are the data old or suspect for some reason?) should also be identified. The ESR will be finalized after a determination has been made regarding the types and severity of the data gaps/limitations, and the need to resolve the data gaps/limitations at this stage of the project.

2. Task 7b: ADEIS/R

Once the project alternatives have been developed to a sufficient level of detail (i.e., after the Final Alternatives have been identified), the NEPA/CEQA consultant will conduct the impact analysis and prepare a complete ADEIS/R, including all appendices and related technical reports (e.g., traffic, biological surveys), if any. Significance criteria used in evaluating project impacts will be developed in draft form by the consultant, and must then be reviewed and approved by the Project Management Team (and other stakeholders, as appropriate) prior to being used to conduct the impact analysis. The Science Team may review the impact assessment methodology.

The Project Management Team and selected other stakeholders will review the complete ADEIS/R and provide comments. Note: the Project Management Team will not accept "working drafts" or "partial drafts" as a replacement for a complete ADEIS/R submittal. To expedite the document comment process, the reviewers have committed to reviewing the document quickly. The consultant will be responsible for developing a comment review process that provides for expedited resolution of conflicting comments. The EIS/R should be formatted in a manner that will facilitate preparation of the Findings and the Mitigation Monitoring and Reporting Plan (MMRP).

3. Task 7c: DEIS/R

Following receipt of comments on the ADEIS/R, the consultant will prepare a Check Copy Draft EIS/R. The Project Management Team will review the Check Copy DEIS/R to ensure all comments have been integrated/addressed to the Project Management Team's satisfaction. Once final changes are complete, the consultant will produce a camera-ready DEIS/R for final review. Upon Project Management Team approval, the consultant will produce and distribute the DEIS/R. The DEIS/R will be circulated to the appropriate local, state, and federal agencies and interested organizations and individuals. To allow adequate time for this complex project, the public review period will be 60 days.

To minimize the environmental impact of producing the EIS/R, the document will be provided to the public and others on CD-ROM; hardcopy documents will only be supplied to public information repositories and individuals specifically requesting hardcopy documents.

Comment responses will be included in the comment response document published as part of the final EIS/R.

4. Task 7d: AFEIS/R and FEIS/R

Once comment responses are developed, the consultant will prepare an administrative final (AF) EIS/R. The AFEIS/R will be reviewed by Project Management Team members and selected other individuals, and comments will be provided to the consultant in the same manner as for the DEIS/R. The comments will be incorporated by the consultant, and the consultant will produce a Check Copy final EIS/R and camera-ready FEIS/R as described for the DEIS/R. Following final QA and approval by the Project Management Team, the consultant will produce and distribute the final EIS/R, and prepare and file the appropriate notices. The FEIS/R will be a complete document, rather than a "response to comments" document.

Comments on the FEIS will be compiled into a master comment/response document and individual responses will be provided for each comment as for DEIS/R. Comments and comment responses will be reviewed with the Project Management Team in the same manner as for the DEIS/R comments. The comment response document will be provided to FWS and the Corps. Public distribution of the comment responses will be undertaken by FWS and the Corps, as appropriate.

5. Task 7e: FEIR Certification and Record of Decision

The consultant will compile the MMRP required for approval of the FEIR. Preparation of the MMRP will include preparation of a draft and final MMRP. DFG will prepare the findings. Once the FEIR has been completed and certified, DFG will submit a Notice of Determination.

Once the FEIS has been reviewed and approved, and the comment response document has been prepared, the FWS will prepare a ROD. The consultant will prepare an administrative draft ROD for use by FWS.

6. Task 7f: Biological Assessment and Section 404(b)1 Analysis

The Biological Assessment (BA) and Section 404(b)1 Analysis will be completed concurrently with the EIS/R; however, only summaries of these documents will be included in the EIS/R. The Draft BA and Section 404(b)1 Analysis will be reviewed by the Project Management Team, Science Team, and other stakeholders and then submitted to the agencies. The associated regulatory/trustee agency consultation will occur through the Trustee and Regulatory Agency Group (see Task 8, below).

H. TASK 8: REGULATORY COORDINATION AND PERMITTING

The Project Management Team will work closely with agencies that have potential regulatory or other approval authority for the project. The goal of the regulatory coordination and permitting effort is to ensure the project design can be permitted, and that permits are in place for Phase 1 of the project at the end of the 5-year planning period. As noted earlier, the Project Management Team has established a

Regulatory and Trustee Agency Group. The purpose of this group is to provide on-going regulatory/trustee agency input into the development of the Restoration Concept Plan, the EIS/R, Biological Assessment, Section 404(b)1 analysis, and permit applications, and to ensure that various agency requirements are met. The group also provides a forum for reaching consensus on potentially conflicting requirements.

The Project Management Team has worked with trustee and regulatory agencies to formalize the role of the agencies relative to the project. An interagency Memorandum of Understanding (MOU) is currently being signed by the participating agencies. The MOU includes a formal concurrence/nonconcurrence process at three major milestones in the project planning effort:

1. Pre-scoping/scoping consultation
2. Initial concurrence on the draft programmatic EIS/R preparation and potential Corps permit application development
3. Final programmatic EIS/R and Corps permit

There are multiple specific items for concurrence/nonconcurrence associated with each major milestone. At this stage, with the exception of the Corps (which is likely to be involved in a part of the project as a sponsor), the federal agencies involved in the Trustee and Regulatory Agency Group have declined to be Cooperating Agencies under NEPA.

The consultant selected for this RFS is expected to attend approximately six Regulatory and Trustee Agency Group meetings each year, provide project status briefings to the Group, and provide other information to the Group as needed to ensure that permits can be obtained. The Project Management Team has developed a draft strategy for obtaining permits and approvals; the next step in the process is to identify key data needs for the various permits that may be required and to develop a detailed schedule for obtaining permits and approvals.

The consultant will prepare the permit packages for submittal to the various federal and state agencies. In addition to actual permit applications, this task also includes coordination to obtain Biological Opinions from FWS and NOAA-Fisheries. Each permit package will include the permit application, supporting information, and draft permit language. The consultant will be expected to revise the permit applications as necessary to obtain agency approval. The consultant will be responsible for coordinating permit hearings, including preparation of any required presentations. A representative(s) from the consultant will accompany the Project Management Team representative(s) to the permit hearings.

The Project Management Team is seeking innovative ideas to minimize the permitting effort required in the long-term. Given the likely long duration of the implementation phase, and the on-going maintenance requirements for ponds retained as ponds, the permit approach must be planned carefully to ensure continuity over the long-term, while streamlining the actual permit renewal/amendment/preparation effort. The permitting effort should be coordinated closely with the development of the Monitoring and Adaptive Management Plan (MAMP) and the detailed design and specifications.

I. TASK 9: CULTURAL RESOURCES SURVEY AND CONSULTATION

The cultural resources analysis for the project poses unusual challenges due to the size of the project area, the lack of certainty regarding which areas may be impacted (for example, specific breach locations for levees breached in later phases of the project may not be know for many years), and the fact that the entire area may be considered a cultural landscape. In addition, should cultural resources mitigation be required, there could be many local historic preservation advisory boards that will need to be consulted.

For this task, the consultant will first develop a cultural resources assessment strategy designed to conduct the cultural resources survey(s) and consultation(s) in the most effective and efficient way possible. In addition, the strategy should describe how the cultural resources survey and consultation will be phased to coincide with the implementation of the project. Phased assessment/consultation may be preferable because the design for later phases of the project is subject to change based on the adaptive management program; however, it must be established up front whether or not the entire landscape is eligible. The strategy should reflect coordination with local advisory boards, Native Americans, and the State Historic Preservation Officer to ensure implementation of the strategy will meet the needs of these groups. The consultant will then conduct the cultural resources survey and consultation. The consultant will coordinate the cultural resources work with the EIS/R, design, and implementation schedule. The consultant will be responsible for all coordination and notifications required as part of the cultural resources survey.

J. TASK 10: MONITORING AND ADAPTIVE MANAGEMENT PLAN

The consultant will be responsible for preparing the Monitoring and Adaptive Management Plan for the project. The monitoring and adaptive management program is an essential part of the overall restoration planning effort and will guide later phases of project implementation. The MAMP will build on the monitoring currently being conducted for the Initial Stewardship Plan, as well as any other on-going data collection efforts that may be initiated as part of the project, or is occurring on a regional scale in the San Francisco Bay Area. The goal of the monitoring component of the MAMP is to develop a streamlined data collection/monitoring program that will support an implementable adaptive management program.

There will be two phases to the preparation of the MAMP. During the first phase, the consultant will develop a preliminary MAMP with a sufficient level of detail for environmental review and preliminary costing. The preliminary MAMP is also required to complete the FR. The goal of the monitoring component of the preliminary MAMP is to identify innovative technologies that could be used to monitor the project, improve our ability to track project progress and impacts, and reduce costs. In addition, as part of the developing the plan, the consultant will coordinate with other restoration projects and other data collection efforts occurring in the project area to identify opportunities for collaboration on monitoring. The goal of the adaptive management component of the preliminary MAMP is to define the types of adaptive management actions that could be implemented, and to describe the types of monitoring that would be required to identify the need for various adaptive management actions.

A detailed MAMP will be prepared as part of the permitting and design phases of the project. The detailed MAMP will provide specific information on the monitoring to be conducted for the entire project area, including information on the frequency and location of samples, monitoring/analysis methodology, data evaluation, and opportunities for collaborative data collection. It will also specify the triggers for adaptive management actions, and how the effectiveness of various adaptive management actions will be evaluated. In addition, the detailed MAMP will provide specific information on the adaptive management actions that may be required for Phase 1 of the restoration effort, and describe the types of actions that may be implemented during later phases of the project. As with the cost estimate for the later phases of restoration, the potential adaptive management actions for later phases of restoration will be delineated as "unit" actions with corresponding unit costs.

K. TASK 11: OPERATIONS AND MAINTENANCE PLAN

The consultant will be responsible for preparing the Operations and Maintenance (O&M) Plan for the project. The O&M Plan is an essential part of the overall restoration planning effort and will be

instrumental in ensuring the success of the restoration project over the long term. The O&M Plan will integrate O&M being conducted as part of the ISP with the O&M needs of the restoration project.

There will be two phases to the preparation of the O&M Plan. The first phase will consist of a preliminary O&M Plan with a sufficient level of detail for environmental review and preliminary costing. The detailed O&M plan will be developed during the detailed design phase. The preliminary O&M Plan will be used to complete the FR. The O&M Plan will clearly define the types of O&M that will be required for each part of the project (appropriate to the level of alternative development and design at the time the preliminary and detailed plans are prepared), and the organization responsible for the various activities. In addition, the O&M Plan will include a discussion of permits and other environmental approvals that may be required to executive the various activities contained in the Plan.

The detailed O&M Plan will specify the triggers/criteria for maintenance, and will include an operations manual for features (such as ponds) that require on-going maintenance. As with the cost estimate for the later phases of restoration, the potential operations and maintenance activities associated with later phases of restoration will be delineated as "unit" actions with corresponding unit costs.

L. TASK 12: RECREATION AND PUBLIC ACCESS PLAN

The recreation and public access elements of the project will most likely be defined through the project's collaborative public participation process. The consultant will identify 2 staff members to participate in any Public Work Group(s) created to address recreation and public access and their integration with wildlife and restoration objectives. The consultant firm/team will provide information to the Public Work Group(s) and the Stakeholder Forum as needed. This information may include a constraints and opportunities analysis targeted at recreation and public access issues, a literature survey regarding the effects of human/wildlife interaction, physical design techniques and management strategies that may be used to address opportunities and constraints, and related information. Initial Restoration Concepts and layouts may also be used to focus the effort of the Public Work Group.

The management of the Recreation and Access Public Work Group, including all administrative support, will be provided by the CCP; however, the consultant retained for this contract will prepare the written Recreation and Public Access Plan. The Recreation and Public Access Plan will serve as a blueprint for incorporating recreation and public access elements into the overall design effort, and describe the general public's and interested stakeholders' preferences for the types, distribution, and extent of recreation and access features. The Plan will reflect input from the Work Group, Stakeholder Forum, Science Team, and Project Management Team, as appropriate. The Plan will incorporate a summary of trade-offs that will be inherent in this component of the project, including trade-offs between different types of recreational interests and trade-offs between wildlife protection and recreation/access. The Recreation and Public Access Plan will also provide information about physical design techniques and management strategies that may be used to address opportunities and constraints. Finally, as part of the Plan, the consultant will provide siting, design, and management guidelines for recreation and public access features.

M. TASK 13: PROJECT MANAGEMENT

As discussed earlier, effective project management will be a critical factor in the success of this project. In general management activities related to a specific task should be included with that task. The project management task includes those activities that are not directly associated with a specific task. The activities will include schedule and budget management, overall consultation with the Project Management Team and other stakeholders (as directed by the project Management Team), internal coordination and communications (including overall coordination of QA/QC activities), staff allocation and management, and management-related meetings.

VI. PROJECT DELIVERABLES

A large number of documents will be generated as part of the work proposed under this contract. One of the challenges associated with the large number of deliverables is ensuring that the appropriate people and organizations are aware of the information and conclusions contained in these deliverables, especially given the time constraints experienced by many stakeholders. Maintaining consistency between documents is another challenge. The Project Management Team has identified a process for addressing these challenges, as described below. Deliverables are divided into two categories: major deliverables and other deliverables. Requirements for major deliverables and other deliverables are described below.

A. MAJOR DELIVERABLES

Major deliverables are reports and memoranda documenting the completion of key tasks or subtasks on the project.

1. Listing of Major Deliverables

Table D provides a list of the major deliverables identified for the proposed contract. This list of major deliverables should be considered preliminary. Some deliverables will be combined, if feasible. Major deliverables may include maps, graphics, or drawings, as well as appendices; the requirements outlined in Section VI.B apply to all components of the major deliverables. The deliverables are shown by task; the listing should not be construed as the sequence in which these documents will be delivered.

2. Requirements for Major Deliverables

a) *Key Components of Major Deliverables*

In addition to the body of the report, formatted in a way agreed upon between the Project Management Team and consultant, each major deliverable must include the following components.

- Executive Summary (due to the number of deliverables that will be generated, many people will only review the Executive Summary)
- Acronyms and Glossary (to enable the public to understand the deliverable)
- For internal and public review drafts: line numbers and comment format (line numbers will improve the reviewers ability to provide specific comments; the comment format will ensure that reviewers all use the same approach in providing comments). Line numbers and a comment format are not required for final documents that are not subject to further review.
- Revision Tracking (to ensure that all reviewers are reviewing the appropriate version of the deliverable).

All major deliverables must be provided in both hard copy and electronic format (on CD), and all public review drafts and final documents must be provided in pdf format, so that they can be easily posted on the project website. The deliverables will be posted by SFEI. An abstract will accompany the electronic deliverable for the website and will be used to announce the availability of the new deliverable on the website. All text will be printed single-spaced, double-sided, using a conventional report (11-inch by 8.5-inch) format. All hardcopy documents must be printed on recycled paper.

b) *Project Team Briefing*

At each significant review stage for major deliverables (e.g., administrative draft, public draft, administrative final draft, and final), the consultant will prepare and conduct a

Project Management Team briefing. The Project Management Team will generally allow one to two hours for the briefing. Other stakeholders, including the Science Team, may be present at the briefing. The briefings will typically occur as part of Project Management Team or other scheduled meetings. The location(s) for the briefings will be determined at the time they are scheduled. The briefing will include providing the appropriate presentation materials to the attendees.

The briefing should be in presentation format, and should provide a thorough overview of the deliverable. For drafts subsequent to the administrative draft, the consultant will identify important issues that have not been resolved, and list other components of the project that may be affected by any new conclusions/data that have resulted from the revisions made. Presentation briefings may be posted on the project web site.

c) *Public/Stakeholder Briefing/Presentation*
The consultant will also prepare a presentation for the general public for each public review draft and final deliverable. The briefing will include providing the appropriate presentation materials to the attendees. With the exception of the public hearings required for NEPA/CEQA compliance and permits, meeting logistics (i.e., such as obtaining a meeting room and providing audio-visual equipment) will be managed by CCP. The consultant should anticipate that multiple public briefings may be required for some major deliverables, and that public briefings may occur in the evening as well as on weekends.

d) *Abstract/Bibliographic Database*
Major deliverables will become part of the bibliographic database linked to the project website. The consultant will be responsible for entering the required information for the bibliographic database into the system. The required information includes the bibliographic information such as author(s) and title, an abstract of the deliverable, and key conclusions. The bibliographic information is organized according to key questions (as developed for the data gaps workshops); the consultant will identify the key questions to which the deliverable is relevant.

e) *File Retention/Project Library*
The consultant will house the project library at the consultant's project office, and will ensure that it is readily accessible to the public during normal business hours (for consultant teams, the project library should be housed at the lead firm's project office). Given the number of documents likely to be prepared, the consultant should maintain an appropriate index to ensure that documents are easy to find. The Conservancy will be responsible for providing a copy of the deliverable to the State Library; the consultant will provide 2 additional copies of all written materials and other documentation to the Conservancy for the project archives.

B. OTHER DELIVERABLES

Other deliverables are defined as all those deliverables not included in the above list. Other deliverables may include various memoranda documenting project activities, status reports, draft scopes of work for data collection, field data reports, and specific graphics or drawings requested by the Project Management Team. Other deliverables may require some or most of the features described for major deliverables; requirements will be defined when each deliverable is contracted.

C. REVIEW PROCESS AND QA/QC REQUIREMENTS FOR DELIVERABLES

Effective quality control and quality assurance procedures are essential for ensuring the technical integrity of the deliverables prepared for the project, and consequently, ensuring stakeholder confidence in the technical and scientific effort on which the project is based. QA/QC requirements for major deliverables and other technical products are outlined below. The consultant will develop a QA/QC plan for project as one its first deliverables. The QA/QC plan will include the information provided below, and provide a detailed process for ensuring that QA/QC objectives are met throughout the planning period.

1. QA/QC for Major Deliverables

Major deliverables will be QA/QC'd by the consultant. Independent technical review will be provided by the Science Team. Several technical experts from the Science Team will be selected at the start of the work on each major technical task, and will provide the appropriate level of on-going technical review, with a final independent technical review at the completion of the effort. In addition, all major deliverables are to be reviewed by a technical editor to ensure that they are concise and comprehensible to the public.

The consultant's QA/QC program must be documented; for example, comments on internal review drafts, and actions taken to address to those comments must be available for review by others. In addition, the QA/QC process must meet the requirements of the Corp's QA/QC process; for example, QC reviewers will have to have a minimum number of years of relevant experience.

2. QA/QC for Other Deliverables

The QA/QC process for other deliverables will be defined in the QA/QC Plan, and will be appropriate to the purpose and significance of the deliverable(s).

3. Review Process Requirements for Major Deliverables

Typically, drafts of major deliverables will be reviewed by a number of stakeholders in addition to the Project Management Team. The other reviewers will be determined on a case-by-case basis, depending on which stakeholders may be directly affected and/or have the technical expertise to review the deliverable. The consultant will compile all comments, group comments by topic, identify conflicting comments, provide proposed comment responses (except for conflicting comments), and options to address conflicting comments. The Project Management Team will resolve the conflicting comments identified by the consultant, modify the proposed comment responses as needed, and provide specific language and/or direction to the consultant for comment responses addressing conflicting comments.

4. Review Process Requirements for Other Deliverables

At a minimum, the review process for other deliverables will consist of review by one or more members of the Project Management Team. Scientific deliverables such as data reports may also be reviewed by members of the Science Team. Deliverables generated for distribution to the general public will be reviewed by CCP.

D. PROJECT MAPS, GRAPHICS, AND DRAWINGS

Project maps, graphics, and drawings will be delivered in either pdf format (for small graphics generated as part of reports and other deliverables), or in a format that will be compatible with the database. The consultant should anticipate that many of the graphics and drawings generated for the project will be

linked to a GIS database, and may be generated as layers of a GIS database. As noted earlier, electronic copies of all deliverables generated will be transmitted to SFEI for incorporation into the project database.

VII. INFORMATION TO BE INCLUDED IN SUBMITTAL

The total page limit for the body of the submittal is 42 pages, divided as follows and described below:

- Team Organization = 4 pages
- Approach = 30 pages
  - Understanding of Project/Key Issues = up to 5 pages
  - Technical Approach = up to 20 pages
  - Management Approach = up to 10 pages
- Qualifications = 8 pages

In addition, the submittal should include the following (described in more detail below), which do not count towards the 42 page limit:

- 2 Cost Tables (Year 1 and Remaining Scope)
- Up to 20 Resumes, no more than 2 pages each
- 20-25 Relevant Project Descriptions, 1 page each
- Rate Sheets
- Anticipated Utilization for Each Firm/Office

Submittals should be single-spaced and double-sided (oversize pages and figures excepted) on 8.5-inch by 11-inch format, in Times New Roman or Tahoma font. Oversize pages should not exceed 11-inch by 17-inch format, and should be folded to fit the 8.5-inch by 11-inch overall format. Page limitations are based on each side of a sheet of paper counting as one page (i.e., a 10-page double-sided section consists of 5 sheets of paper). All oversize (greater than 8.5-inch by 11-inch) pages count as 2 pages.

The submittals should be organized so that the information requested below is clearly identified for the reviewer, however, the submittals need not present the information in the order provided below. The organization of the requested sections is left to the consultant's discretion. Incomplete submittals (i.e., submittals not providing all of the information requested below) and incorrectly formatted submittals (i.e., submittals that do not follow the requirements established for certain items such as project descriptions, and cost summaries) shall be deemed non-responsive.

A. TEAM ORGANIZATION

The page limit for this section, including the project organization chart, is 4 pages. This section should include the following information:

- Description of how your project team (whether consisting of staff from one firm exclusively, or of multiple firms) will be organized. Please identify the Project Manager and key staff by name and physical location (and firm affiliation, if appropriate), and provide a project organization chart showing how your team is organized. Specific roles to be included in this discussion include the Project Manager, major task managers, and critical technical experts. Key staff may include the major task managers and critical technical experts. Please identify individuals you consider to be key staff, and name at least one staff person who will act as a back-up for each key staff person (while

these back-up individuals are not considered key staff, and are not required to be committed to the project in the long-term, the Project Management Team emphasizes that there will be a great need for continuity on this project).

- Three references for the Project Manager who can substantiate the Project Manager's ability to deliver a complex, multi-stakeholder schedule on a compressed schedule on time and within budget. The Project Manager need not be a technical expert, but must be an expert Project Manager.

- For consultant teams, please specify whether/which team firms have worked together on projects in the past, and provide a brief listing of the projects and the firms that worked on the projects.

- Longevity of firm and amount of turnover (for teams, please provide this information for each member firm of the team). Indicate the length of time Project Manager and key staff have been with the firm.

B. APPROACH

The page limit for this section is 30 pages. Please describe your firm's/team's approach to addressing the technical and logistical challenges posed by this project. You must describe your:

1. Understanding of the Project/Key Issues
2. Technical Approach, and
3. Management Approach

Please include the information requested in the subsections, below. Please note that using the maximum number of pages allowable for each subsection will exceed the overall page limit the page for this section; you must determine how to balance your page count without exceeding the subsection page limits.

1. Understanding of the Project/Key Issues

Please describe your understanding of the long-term restoration planning project and the key issues driving the project and the long-term restoration effort. Please include both technical and logistical issues in your discussion, and describe why you believe these issues are the critical issues. You must limit your discussion to no more than 5 pages.

2. Technical Approach

This section of the response is limited to 20 pages. Please describe how you would accomplish the technical work to be conducted as part of this contract. Please address the following general issues as part of your response:

1. How would you sequence and coordinate the work that needs to be accomplished to meet the goals of the project? (While the Project Management Team has developed a project management plan and schedule, we are very open to other approaches that would also meet the budget, schedule, and stakeholder involvement criteria governing this project.)
2. Is the scope of work as outlined in Section V adequate to accomplish to the goals of the project? Are there tasks or activities that should be added or deleted?
3. How can the technical effort be streamlined?

In addition, please address the specific questions for each of the tasks, provided below. Questions pertaining to Task 13 (Project Management) are discussed in Section VII.B.3.

a) *Task 1: Alternative Development*

1. How will alternatives be defined and organized to make them comprehensible and allow effective comparison between the alternatives?
2. What is the most efficient way to evaluate alternatives?
3. What should be the evaluation criteria for alternative screening?
4. How will you determine the requirements for managed ponds?
5. How will you assess existing conditions?

b) *Task 2: Information Gathering*

1. What is your approach to literature review/existing data collection? What data are needed when?
2. What is/are the most efficient means of compiling and integrating the vast amount of existing data?

c) *Task 3: Modeling of Physical and Ecological Processes*

If you are proposing to use multiple models, please provide the requested information for each of the models.

1. Modeling philosophy: What do you see as the benefits of modeling versus collection of field data/empirical analysis. How does your philosophy support the needs of the long-term planning effort?
2. Specific Model Information: Should the modeling effort use only one model or are multiple models required to be developed to encompass all areas of physical processes? Describe whether the model(s) you propose to use is/are proprietary or generally available. Will the model(s) require customization? Has/have the model(s) been applied to the Project area? What is the initial effort required to calibrate for local conditions? If you are proposing to use multiple models, please provide the same information for all models.
3. Sequence of Data Collection and Model Development: Please describe your proposed approach and schedule to data collection (if needed) and model development, keeping in mind that initial (screening) and preliminary-level model runs must be completed by September 2004, and detailed modeling runs of Final Alternatives must be completed in April 2005.
4. How would you integrate the use of GIS into the data management and presentation effort? How would you link modeling and GIS?
5. Please describe your approach to quantifying, managing, and disclosing uncertainties inherent in the modeling process.

d) *Task 4: Flood Management, Protection, and Enhancement*

1. Please describe your understanding of the tidal flooding issues.
2. What are the opportunities for integration of the project with existing flood control projects and/or enhancement of flood capacity?
3. How should sea-level rise be addressed?

e) *Task 5: Detailed Design and Cost Estimating*

1. What are the most significant technical challenges likely to be encountered during design?
2. Given the likely challenging construction environment, how can the potential for change orders be minimized?
3. How can the design be modified to improve/preserve the operational life of newly-constructed managed pond features?

4. How can the design effort be structured to encourage both long-term consistency in approach and allow for improvements to existing construction methods in the future?

f) *Task 6: Feasibility Report for Components to be Constructed by Corps*

1. Provide a list of the key milestones in the Corps planning process.
2. List the major elements/sections of a Feasibility Report, and describe which portions (if any) of the report may require specific work tasks that are not already included in the scope of services described in Section V.
3. Describe the review process once the Feasibility Study has been completed at the District level, and your experience in managing the schedule during this process.
4. How can the Corps planning process (including internal Corps reviews of various documents) be expedited? What are your recommendations for controlling the schedule for those portions of the project requiring Corps review/approval?

g) *Task 7: NEPA/CEQA Documentation*

1. Describe the best way you see to ensure long-term relevance for the programmatic document and long-term consistency in the tiered document. What is the optimal way to use the programmatic document for a project of this nature?
2. How will you determine the baseline for the environmental review?
3. Do you foresee the need to involve local agencies (cities, counties, and special districts) in the development of the CEQA document? Why or why not? If you think they should be involved, how (in what capacity) do you think they should be involved?
4. Provide a detailed list of notices and other filings, along with a proposed schedule for fulfilling these requirements.

h) *Task 8: Regulatory Coordination and Permitting*

1. Provide a detailed list of required permits and approvals that are likely to be required to implement Phase 1 of the project.
2. What is your proposed strategy and timeline for obtaining the required permits and approvals?

i) *Task 9: Cultural Resources Survey and Consultation*

1. What are the major challenges and opportunities with respect to the cultural resources survey and consultation?
2. What is/are the best way(s) to ensure that cultural resource issues do not present a roadblock to project implementation (e.g., should all of the area by surveyed now, or just Phase 1, or a combination? How will your proposed approach be integrated with the NEPA/CEQA activities?)?

j) *Task 10: Monitoring and Adaptive Management Plan*

1. How would you establish and measure success criteria for a project of this scale?
2. How would you link monitoring and adaptive management actions?
3. What regional monitoring efforts should be coordinated with project?

k) *Task 11: Operations and Maintenance Plan*

1. What are the likely major types of operation and maintenance activities that will be required?
2. How can long-term O&M activities and costs be minimized?
3. Please comment on how you think O&M costs will compare to construction costs?

l) *Task 12: Recreation and Public Access Plan*

1. What are the major types of public access likely to be desired, and can they be accommodated by the project?
2. How can meaningful public access be provided by the project, while still ensuring wildlife protection?

3. Management Approach

The discussion of your Management Approach must address the project management considerations associated with this project. It should also discuss project communications, and your proposed approach to QA/QC. This subsection is limited to a maximum of 10 pages.

a) *Project Management*

Please describe your overall project management approach. This should include a description of the process you intend to use to ensure that schedules are met, and budgets are effectively controlled. Please provide any examples of how you have met this challenge in the past on complex projects, especially projects that were subject to extensive stakeholder involvement and conflicting project objectives.

Please address the following points in your submittal:

1. Please review the schedule provided on the web site, and comment on the following: 1) any concerns and difficulties that you foresee in meeting the schedule, 2) how such potential difficulties can be managed, and 3) any opportunities that may exist to trim the schedule.
2. How will you ensure that the Project Management Team is kept fully informed of relevant information and has a full understanding of the key issues affecting each decision? How frequently are face-to-face meetings with the Project Management Team required?
3. How will you ensure continuity of project staff for this project?
4. Who will act as a back-up for the Project Manager if s/he is unavailable (e.g., due to vacation, illness, or a personal emergency?)
5. How do you currently track budgets? Do you propose to make any changes to that system for this project?
6. How will you ensure that the needed schedule (i.e., the construction start date for Phase 1 in March 2008) can be met? How do you track project schedules, and forecast changes to the project completion date resulting from changes in completion dates for interim deliverables?
7. What is your estimate of the time required to conduct internal coordination, coordination with the Project Management Team, and coordination with other stakeholder groups?

b) *Communications*

For the communications discussion, please explain how you plan to ensure effective intra-team communication, and your approach to communicating with the Project Management Team and other stakeholder groups shown on the project organization chart. Please describe both day-to-day communications, and any suggestions you have for most effectively communicating the content of major deliverables. Please specifically discuss the following:

1. How will your firm/team ensure that all staff working on the project are kept fully informed of relevant information? What are the internal communication protocols/processes?
2. How does your firm/team propose to communicate with the Project Management Team, Science Team, Public Outreach Team, Regulatory and Trustee Agency Group, and Stakeholder Forum? What is the most effective means of ensuring that communications are timely and comprehensive, yet concise?

c) *Quality Assurance and Quality Control*

The QA/QC discussion should spell out your firm's/team's QA/QC process, including who will conduct QC and QA. Please provide any suggestions you have about how to effectively integrate outside QA/QC review (e.g., by the Science Team) with your existing QA/QC process.

C. QUALIFICATIONS

The page limit for this section is 8 pages. Please describe the qualifications of your firm/team as they apply to this contract. Explain how the firm/team has obtained the required expertise relevant to the various technical tasks. This section should include a brief overview of the firm/each firm on the team and a biographical sketch for the Project Manager and all key staff. Please provide an overview of the Project Manager's and key staff's experience in a format similar to that shown in Attachment B of the RFS Announcement at http://www.southbayrestoration.org/pdf_files/EnvEngServices.pdf. This overview counts towards the 8 page limit (i.e. it should not be an appendix). Please use the updated list of Technical Skills and Experience that begins on page 10 of this RFS, in place of the list currently in Attachment B of the RFS announcement. Additional skills or subcategories of skills can be added to the list.

Resumes and relevant project descriptions should be provided in an appendix. Resumes must be provided for the Project Manager, principal-in-charge, and all key staff. Resumes for other staff are optional. Individual resumes must be no more than 2 pages in length, and no more than 20 resumes may be included in the submittal.

Please include 20 to 25 relevant project descriptions (if the submittal is by a consultant team, this limit applies to the total number of all project descriptions from the entire team). Each project description is limited to one page or less. Consultant teams are encouraged to provide project descriptions for projects that included work by two or more firms on the team.

The project descriptions must contain the following information:

- value of contract to consultant(s)
- dates of services
- approximate cost of entire project
- specific description of what the firm(s) did on the project
- client name and contact information
- project description/background
- how the project relates to long-term restoration planning effort
- staff who worked on project who are key staff identified in the submittal (including the Project Manager), and firm office(s) conducting the work.

An example format for the project descriptions was provided in Attachment B of the RFS Announcement at http://www.southbayrestoration.org/pdf_files/EnvEngServices.pdf. Where multiple offices of one firm or multiple firms on a consultant team worked on one project, please identify which services were contributed by which office/firm, and the approximate contract value to each office/firm.

D. COST INFORMATION

This section will consist of the two tables summarizing estimated Year 1 costs, and costs for the remaining period (Attachment B of this RFS). All other information will be included as appendices. Cost information to be provided with the submittal consists of the following items:

1. Detailed proposed budget for Year 1 of the contract and a general budget to accomplish the other portions of the scope (see Attachment B of this RFS).
2. Rate Sheets for all team members for calendar year 2004 and calendar year 2005 (including proposed mark-up rates/handling charges; please note that limits on mark-up rates/handling charges are provided in Section VII.D.2).
3. Anticipated level of effort (utilization) for each Team Firm (%) over the life of the contract (see Attachment C of the RFS Announcement).

1. Cost Estimate for Year 1 and Remaining Scope

As noted in the introduction, the initial contract period will be one year. The submittal should include a detailed budget for Year 1 of the contract (calendar year 2004), and a general budget for the remaining scope. The Year 1 estimate should include detailed information on the number of hours (by category) required for each task and subtask, and estimated expense information. The Year 1 detailed cost estimate breakdown and general budget for remaining scope must be summarized into the format provided in Attachment B of this RFS. The cost estimates prepared for the RFS submittal should not be considered price quotes, as the actual scope to be contracted may differ from the tasks outlined here.

Please note that all information outlined in Attachment B of this RFS must be provided for the Year 1 cost estimate. The detailed cost estimate breakdown that supports the information included in Attachment B of this RFS should be provided in an appendix; there are no page limits or specific format requirements for the detailed breakdown; however, it should be easy to track the detailed estimate to the summary. Assumptions made in developing the Year 1 detailed cost estimate should be clearly stated and included in the appendix with the detailed breakdown. In your assumptions, please clearly distinguish between activities that you consider to be coordination and those that are project management. Management activities and meetings associated with a specific task should be included in the budget for that task.

The Project Management Team expects the following tasks to be underway and/or completed in Year 1:

1. Alternative Development through Development of Preliminary Alternatives and start of Preliminary Design and Cost Estimating (Tasks 1a, 1b, 1d, 1e, and portions of Tasks 1c and 1f)
2. Information Gathering (Task 2)
3. Model Set-up, Calibration, and Initial and Preliminary Model Runs (portions of Task 3)
4. Flood Management Needs Assessment, Opportunities and Constraints, and Integration with Restoration (portions of Task 4)
5. EIS/R Scoping and ESR (portions of Task 7a)
6. Regulatory Coordination and Permitting (portion of Task 8)
7. Cultural Resources Survey and Initial Consultation (portions of Task 9)
8. Preliminary Monitoring and Adaptive Management Plan (portion of Task 10)
9. Recreation and Public Access Planning, including Initial Scenarios and Draft Recreation and Public Access Plan (portions of Task 11)

10. Project Management for Year 1 (portion of Task 12)

In addition, please include in your cost estimate any other activities that you foresee conducting in Year 1 of the contract.

Cost estimates for the remaining scope (to be completed in Years 2 through 4 of the contract, calendar years 2005 through 2007) should simply consist of general estimates by task. The estimates may be shown as one cost for each task for the 3 years; there is no requirement to break these general estimates down by year. In addition, estimates should only be provided for major tasks, estimates for subtasks need not be shown.

2. Rate Sheets

Please provide Rate Sheets for all team members for calendar year 2004 and calendar year 2005. Rate sheets should be provided in an appendix. Rates shown must be fully burdened rates, including all overhead costs. In addition, rates should include any other charges that the consultant may normally charge as a percentage fee on labor (e.g., computer use, health and safety fees, communication charges, etc.).

Rate sheets should include the handling charges or mark-up rates (in percent) charged for expenses and subcontractors, and standard charge rates for such items as reproduction. Handling charges/mark-ups on expenses and subcontractors can only be charged once (e.g., the prime consultant cannot charge a handling charge on a handling charge billed by a subconsultant), and travel expenses are reimbursed at actual costs not to exceed the rates provided in Title 2, Division 1, Chapter 3, Subchapter 1, Article 2 of the California Code of Regulations. For this contract, the maximum allowable handling charge/mark-up rate for expenses is 10%; the maximum allowable handling charge/mark-up for subcontractors is 8%.

3. Anticipated Utilization of each Team Firm/Office (%)

Describe the anticipated level of effort (utilization) for each firm's office that will be used on this contract, in percentages. The information should represent the consultant's estimate for the first year, and over the remaining planning period, and should be presented in a table format similar to that shown in Attachment C of the RFS Announcement at http://www.southbayrestoration.org/pdf_files/EnvEngServices.pdf. Consultant teams should provide this information for the entire team, as well as for each firm individually. The table should be included in an appendix.

TABLES

Request for Environmental and Engineering Services
SOUTH BAY SALT POND RESTORATION PROJECT

TABLE A: GENERAL BUDGET SUMMARY FOR RESTORATION PLANNING PERIOD

Category	Start-up Period (6/2002 – 9/2003)	9/2003 – 6/2004	7/2004 – 6/2005	7/2005 – 6/2006	7/2006 – 6/2007	7/2007 – 6/2008	Total Estimate for Category
Public Outreach Program ***	$200,000	$300,000	$275,000	$275,000	$275,000	$100,000	$1,425,000
Science Review and QA/QC Process***	$50,000	$300,000	$300,000	$300,000	$250,000	$100,000	$1,300,000
Data Collection and Management**	$300,000	$800,000	$900,000	$350,000	$350,000	$50,000	$2,750,000
Restoration/ Access Alternatives*	$50,000	$500,000	$500,000	$350,000	$500,000	$500,000	$2,400,000
Modeling of Physical Process/ Feasibility Analysis*	$100,000	$350,000	$1,000,000	$100,000	$0	$0	$1,550,00
Compliance (NEPA/ CEQA and Permitting)*	$25,000	$50,000	$275,000	$300,000	$225,000	$25,000	$900,000
Flood Management ***	$50,000	$400,000	$500,000	$500,000	$400,000	$200,000	$2,050,000
Other Tasks (incl. Project Management and Corps Work)***	$200,000	$400,000	$400,000	$400,000	$200,000	$25,000	$1,625,000
TOTAL ANNUAL BUDGET ESTIMATE	$975,000	$3,100,000	$4,150,000	$2,575,000	$2,200,000	$1,000,000	$14,000,000

* Tasks wholly the subject of this RFS
** Tasks partially the subject of this RFS
*** Tasks outside the scope of this RFS (to be conducted by others)

Request for Environmental and Engineering Services
SOUTH BAY SALT POND RESTORATION PROJECT

TABLE B: INFORMATION TO BE COLLECTED

Topic No.	Topic	General Description of Information Sought
1	Wildlife Use of Ponds, Marshes, Mudflats, and Bay	Species range, distribution, and density, and species use of the applicable South Bay habitats. Species/area relationships. Presence/absence of key species. Population trends for key species. Local, regional, and national/international significance of species use of South Bay/San Francisco Bay habitat.
2	Vegetation/Plankton in Ponds, Marshes, Mudflats, and Bay	Types and distribution of vegetation and plankton present in the applicable South Bay habitats
3	Design of Habitat and Landscape	Wildlife dependence on specific plant species; nutrient cycling; optimal design of landscape features such as levees, islands, salt pannes, uplands; desired channel characteristics/viability of relict channels; characteristics of effective corridors. Presence of relict channels. Topographical information land-side of urban levees.
4	Lesson Learned from Prior Restoration Projects	Successful and unsuccessful elements/approaches from past restoration projects, and how the successful elements can be duplicated for this project (case study review). Identification of potential reference sites.
5	Hydrodynamics and Related Data	Building on existing efforts by Moffatt & Nichol and USGS, complete the compilation of existing hydrodynamic and related (e.g., wind/wave) data, collect information on long-term water management plans for the Bay, and assess historic changes.
6	Invasive Species	Options for managing/controlling Spartina (build on Conservancy's Invasive Spartina Project), other invasive species. Assess threat from new non-native species. Invasive species effects on native wildlife. Options for encouraging colonization by native species.
7	Species-Specific	
7a.	Wildlife/Human Interaction Effects	Wildlife tolerance of and sensitivity to human activities. As much as possible, information on specific types of activities that may occur in the project area. Differentiate between feeding and nesting/reproductive effects, if possible.
7b.	Species Resilience/ Response of Species During Restoration	Ability of key species to adapt to restoration. What species can find habitat elsewhere? How will phasing of restoration affect species?
7c.	Predation	Predator presence and distribution in the project area (including population trends), most important/significant predators, effects of predation on key species, and options for predator/predation control, including marsh design features and buffer corridors. Effects of landfills on predators.

TABLE B (Cont.): INFORMATION TO BE COLLECTED

Topic No.	Topic	General Description of Information Sought
7d.	Contaminants in Wildlife	Contaminant concentrations in various types of wildlife in the project area, with a special emphasis on mercury.
7e	Food Resources	How to maintain food resources of ponds
8	Water and Sediment Quality	
8a.	Physical distribution of Mercury and Other Contaminants in Project and Adjacent and Upstream Areas	Compile information on known contamination in and around the project area, with a special emphasis on the distribution of mercury. Compile the information into a data table, and provide the information on a GIS layer in the project database.
8b.	Mercury Methylation	Information on mercury methylation, including available information on mercury cycling and factors affecting mercury cycling.
9	Effects of Cargill Operations	Likely long-term operations by Cargill (i.e., likely pond salinities, depths), and economic forecast to assess the probability of Cargill continuing its Bay Area salt-making operations.
10	Seasonal Pond/Groundwater Interactions	Infiltration rates, depth to groundwater, water sources for potential seasonal pond areas, soil characteristics
11	Infrastructure Assessment	Building on work already performed, identify all infrastructure within the project area and infrastructure that could be affected by the project that is located outside of the project area. Plot infrastructure location on GIS layer(s) for the project database.
12	Sediment	
12a.	Imported sediment supply and quality	Compile existing information on potential sediment sources for imported sediment, including location of source, amount typically dredged, frequency of dredging episodes, geotechnical characteristics of sediment, and chemical content. Provide information in matrix format and on GIS layers for the project database.
12b	Literature survey on in-place sediment quality (ponds, sloughs, bay)	Compile existing information on sediment quality in and around the salt ponds. Plot information on sediment types (e.g., mud, sand) and chemical content on GIS layers for the project database.
12c	Sediment characteristics for imported sediment	Sediment characteristics that foster vegetation growth, and minimize invasive species colonization
13	Vector Control	Factors that influence mosquito production, design elements to help control or reduce mosquito populations, effects of mosquito control projects on other species

TABLE B (Cont.): INFORMATION TO BE COLLECTED

Topic No.	Topic	General Description of Information Sought
14	Flood Protection	Existing level of flood protection, areas subject to tidal flooding and associated economic damages, existing levee conditions and required maintenance to support existing conditions.
15	Other Literature Surveys	Other literature surveys (if required as the project progresses and additional data needs are identified).

TABLE C: PRELIMINARY RECOMMENDATIONS FOR MODELING EFFORT

TYPE OF MODEL	CHARACTERISTICS OF NUMERICAL MODEL(S)
Hydrodynamic Model	Water Levels and Velocity
	Control Structures
	Wind/Wave Currents
	Wetting and Drying
	Evaporation/Precipitation
	Source/Sink Terms
	Temporal Variation (Unsteady Flow)
	Spatial Variation (Two-Dimensional)
	Watershed Inputs
	Vertical Stratification (Three-Dimensional)
Wave Model	Wind-Generated
	Bottom Shear Stress
Sediment Transport Model	Coupling with HD Model
	Cohesive Processes
	Bed Load Transport
	Spatial Variation (Two-Dimensional)
	Vertical Stratification (Three-Dimensional)
	Wind Driven Wave Re-suspension
	Source/Sink Terms
	Dynamic Bed Morphology
	Watershed Inputs
	Channel Migration
Water Quality Model	Solute Transport (Advection-Diffusion)
	Particle Tracking
	Temperature Model
	Biochemical Processes
	Heavy Metals (Adsorption/Desorption)
	Vertical Stratification
Ground Water Model	

Request for Environmental and Engineering Services
SOUTH BAY SALT POND RESTORATION PROJECT

TABLE D: LIST OF MAJOR DELIVERABLES

Item No.	Task No.	Deliverable Name	Comments
1	1a	Opportunities and Constraints Summary Report	Initial analysis; refinements may be made later
2	1b	Initial Restoration Concepts Memorandum	
3	1c	Existing Conditions Report	Will require modeling.
4	1c	Without Project Conditions/ "No Project Alternative" Report	This may be limited to specific features that will be cost-shared by the Corps. Will require modeling.
5	1e	Preliminary Restoration Alternatives Memorandum	
6	1f	Preliminary Design and Cost Estimate Report	
7	1g	Restoration Concept Plan	Serves as the basis for the impact analysis in the EIS/R and will be released to the public. Documents conceptual design
8	2	Data Summary Memoranda or Reports	Memoranda or Reports documenting the results of literature searches on various topics.
9	3	Modeling Report 1	Model Set-up and Calibration
10	3	Modeling Report 2	Initial and Preliminary Modeling Runs
11	3	Modeling Report 3	Modeling Runs for Final Alternatives
12	3	Modeling Report 4	Supplemental Modeling
13	4	Flood Management Concept Plan	
14	5	Detailed Design and Cost Estimate Report	
15	5	Plans and Specification for Phase 1	35% level of design
16	5	Plans and Specification for Phase 1	65% level of design
17	5	Plans and Specification for Phase 1	95% level of design
18	5	Plans and Specification for Phase 1	100% level of design
19	6	Administrative Draft Feasibility Report	Includes Engineering Appendix
20	6	Draft Feasibility Report	Includes Engineering Appendix
21	6	Administrative Final Feasibility Report	Includes Engineering Appendix
22	6	Final Feasibility Report	Includes Engineering Appendix
23	6	Draft Chief's Report	Final Chief's Report prepared by Corps

TABLE D: LIST OF MAJOR DELIVERABLES

Item No.	Task No.	Deliverable Name	Comments
24	7a	Environmental Setting Report	
25	7a	Data Gaps Memorandum	
26	7b	ADEIS/R	
27	7c	DEIS/R	
28	7d	AFEIS/R	
29	7e	FEIS/R	
30	7e	Administrative Draft ROD	Final ROD prepared by FWS, Corps
31	7f	Biological Assessment	
32	7f	404(b)(1) Analysis	
33	8	Permit Applications (BCDC, RWQCB, Corps, local)	
34	9	Cultural Resources Survey Report	
35	10	Preliminary Monitoring and Adaptive Management Plan	
36	10	Detailed Monitoring and Adaptive Management Plan	
37	11	Preliminary Operations and Maintenance Plan	
38	11	Detailed Operations and Maintenance Plan	
39	12	Recreation and Public Access Plan	
40	N/A	Other studies as identified (e.g., field data collection efforts)	

FIGURES

Request for Environmental and Engineering Services
SOUTH BAY SALT POND RESTORATION PROJECT

CALIFORNIA STATE COASTAL CONSERVANCY—SOUTH BAY SALT POND RESTORATION PROJECT
REQUEST FOR ENVIRONMENTAL AND ENGINEERING SERVICES

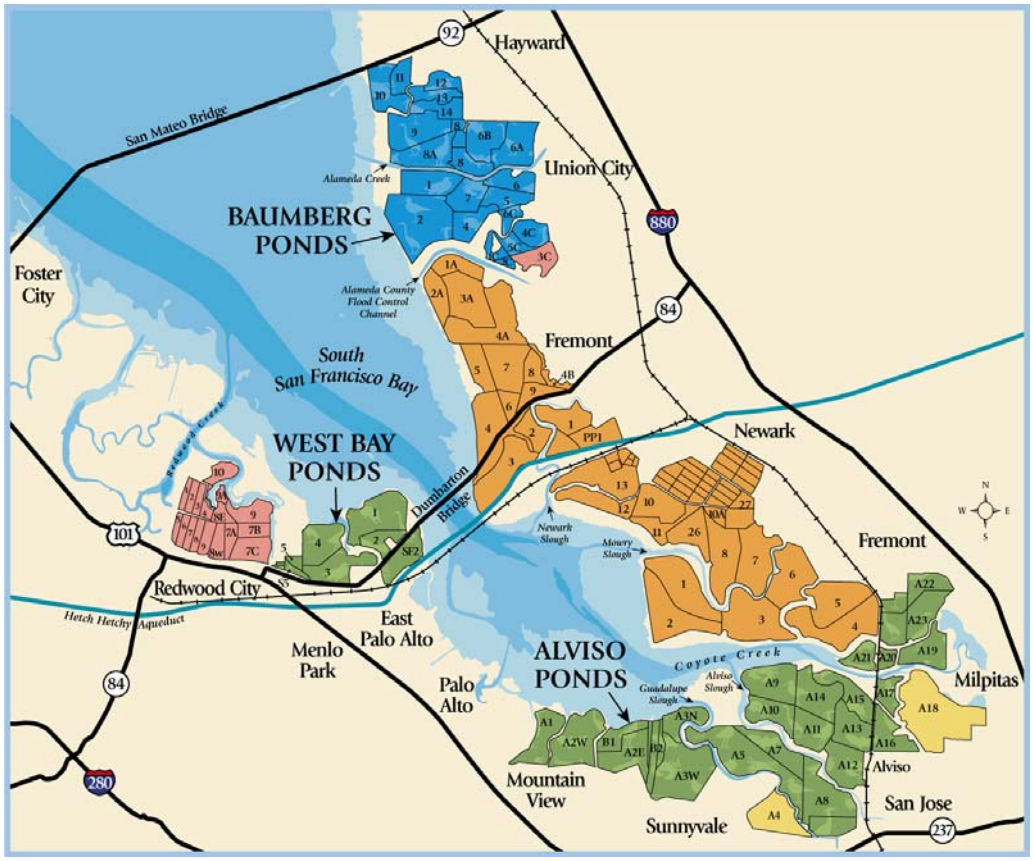

FIGURE 1
PROJECT AREA

FIGURE 2
PROJECT ORGANIZATION

ATTACHMENT A

DETAILED SCOPE INFORMATION FOR RELATED CONTRACTS

Request for Environmental and Engineering Services
SOUTH BAY SALT POND RESTORATION PROJECT

A. MODELING SCOPE DEVELOPMENT/INITIAL ASSESSMENT OF FLOOD MANAGEMENT ISSUES

The Conservancy has retained Moffatt & Nichol Engineers to conduct three tasks pertaining to modeling and flood management:

1. Infrastructure Assessment/Interactions Assessment
2. Modeling Needs Assessment, and
3. Preliminary Levee Conditions Assessment

Tasks 1 and 2 have been completed; Task 3 is scheduled to be completed by January 2004. The work conducted or to be conducted as part of these scopes of work is described in more detail below.

1. Infrastructure Assessment/Interaction Assessment

a. Infrastructure Assessment

All work below is described in technical memoranda prepared by Moffatt & Nichol, and all data are compiled in a Microsoft Access database and presented graphically. Hardcopy and electronic data obtained (raster images, CAD files, reports, data, links) have been provided to the Conservancy. This task consisted of identifying and inventorying tidal sloughs, rivers, flood control channels, creeks, and other waterways that drain through the project area to the South Bay including their geographic boundaries and hydraulic characteristics. Characteristics documented included watershed boundaries, flow variability, and history of flooding and water quality problems.

There are several sanitary districts and cities which discharge stormwater and wastewater within the project area. This task included identifying the major dischargers, jurisdictional boundaries of the dischargers, regulatory bodies which govern their operations, and the type of monitoring data that is reported on a regular basis (physical and water quality parameters reported and reporting frequency). Information in the database includes contact information, references, jurisdictions, and type of monitoring data.

Moffatt & Nichol obtained information on existing outfalls, and proposed major improvements to systems. The Counties of Alameda, San Mateo, and Santa Clara, Sanitary Districts and Wastewater Treatment Plants, City Public Works Departments, SFEI, and the RWQCB were contacted. The database also includes a description of the facility, links to online information, and a bibliography of maps, reports, and available data. Moffatt & Nichol also obtained information from Cargill on existing hydrologic connections between the various ponds (weirs, gates, tunnels, etc). Information on new connections being proposed during the interim management period was also documented to the extent available.

b. Interactions Assessment

Moffatt & Nichol performed an assessment of the constraints related to discharge facilities that the restoration project may encounter, and the potential opportunities that the restoration may present to discharge operations. Potential interaction between facility operations and the restoration project were analyzed qualitatively. The assumptions and results of the analysis are provided in a report and include evaluation criteria, a matrix of opportunities and constraints, and graphics describing the results of the evaluation process.

2. Modeling Needs Assessment

The objective for this task was to identify data that will be needed for early numerical modeling or other computations, to determine the modeling needs, and to develop a modeling strategy. All work is documented in technical memoranda. The results of this task were used to determine modeling needs, such as required outputs. The modeling component of the scope of services is based in part on the modeling needs assessment.

Moffatt & Nichol addressed tidal hydrodynamics, hydrology and flooding, sedimentation, and water quality (Specific decisions 10 through 20 identified at the Data Gaps Workshop). Each of the decisions was evaluated to identify the key issues, and develop a strategy and technical approach for the key questions that need to be answered. A qualitative discussion including methods to estimate changes, and the significance of each parameter included in the evaluation is provided in a technical memorandum.

Moffatt & Nichol also evaluated the suitability of various models for the project. This step consisted of a literature search (an inventory) of industry standard hydrodynamic analysis tools including numerical, physical, and analytical tools, along with specific case studies of projects where they were implemented. The technical memorandum includes a matrix that documents model type, type of input and output, strengths and limitations, and appropriateness for the project.

Finally, Moffatt & Nichol assessed the extent and type of available data for model setup and analysis, and the need for additional data to conduct the preliminary (existing conditions) modeling. The emphasis of this evaluation was on hydrodynamics, hydrology, water quality, and sedimentation, and the evaluation was based on the modeling strategy developed. Identification of additional data needs considered the need for future modeling, including duration of data acquisition, and location of instruments. The Conservancy has contracted for acquisition of data identified as immediate needs. The data needs are documented in a technical memorandum.

3. Preliminary Levee Conditions Assessment

The overall scope of this task is to identify, at a conceptual engineering level, the flood management requirements for the inboard salt pond levees which could function as perimeter levees after implementation of the proposed restoration project, and to provide a preliminary feasibility analysis including levee improvements and basic unit cost estimates that could be used for planning a continuous perimeter flood protection barrier. Results of the analysis will be provided in a report. Existing levee conditions, including topographic data and the pond levee segments that may function as future flood protection levees, will be provided as a GIS layer(s). Hardcopy and electronic data obtained as part of this task (raster images, CAD files, reports, data, links) will be included in the project library.

Because there are many miles of levees, including Bayfront and interior levees, the levee assessment focuses on existing *urban levees*, which are defined as interior levees along the boundary between salt ponds and upstream urban developments. Levee segments along a specific salt pond boundary that could become part of a continuous urban flood barrier have been identified and numbered per Cargill's pond numbering system.

This task will conclude with preparation of a scope of work for an initial geotechnical assessment of the condition of the urban levees and non-flood protection levees in the project area. The geotechnical assessment may be implemented by the consultant chosen for the RFS, or another organization. The work under this task is expected to be completed by January 2004, and includes the following 4 tasks:

a) *Criteria and Standards For Flood Control Levees*

Moffatt & Nichol will compile existing criteria for flood control levees. Standards to be considered include Corps, BCDC, FEMA, and local agency requirements.

b) *Data Collection*

Moffatt & Nichol will collect existing data and supplemental field data to aid in the assessment of the urban levees. Existing data to be obtained include:

- As-built levee geometry (elevation and side slopes);
- Original levee construction methodology;
- Physical condition of levee; and,
- Proposals for flood control projects that will change levee conditions when restoration project is implemented (assuming 2008 implementation).

Because crest elevations for several sections of the urban levees are not known, Moffatt & Nichol will perform a limited survey (spot elevations using kinematic GPS) to determine average elevation of each urban levee segment. In addition, a geotechnical engineer will perform a reconnaissance survey of each urban levee segment to assess levee crest width, geometric irregularities, crest surface condition, levee height above pond surface, side slopes, erosion, material types, nature of toe areas, distance to ditches, apparent drainage on landside of levee, and existing vegetation.

c) *Reconnaissance-Level Geotechnical Assessment*

Moffatt & Nichol will conduct a reconnaissance level geotechnical assessment to identify the deficiencies in the urban levees once their flood protection requirements change as a result of the restoration project. Broad classifications of levee stability, potential settlement and liquefaction potential will be developed for each levee section.

d) *Feasibility of Continuous Flood Protection Levee*

This task includes an engineering feasibility analysis of providing a continuous perimeter flood protection using selected urban levee segments. The analysis will identify opportunities and constraints for each urban levee segment assuming a range of tidal restoration alternatives from full tidal to partial tidal restoration.

The feasibility analysis will include conceptual sketches of levee modifications, including typical cross-sections based on a parametric analysis of levee improvements (such as raising and/or widening crest, flattening slope, armoring, etc.) and a range of construction costs. Because the flood level, and therefore, the required levee crest elevation, will depend on the restoration alternative selected, the parametric evaluation will yield unit costs per foot of levee improvement. Improvement costs will be provided for incremental increases in levee crest height, and will include allowances for armoring (based on wave exposure), and widening (based on habitat requirements and seepage potential) should they become necessary for certain restoration alternatives.

B. DATA COLLECTION

The Conservancy has retained USGS to perform initial data collection for known, critical data gaps. The USGS scope includes 6 tasks to address data needs in the salt pond and sloughs, as follows:

1. Map the bathymetry of the 53 South Bay salt ponds in the purchase agreement for interim management and hydrological modeling of restoration scenarios.
2. Characterize water chemistry, sediments, primary productivity, invertebrate composition, and fish in ponds for consideration in initial salinity reduction and interim management.
3. Conduct monthly surveys of birds in all ponds to document baseline resources, track initial changes, and determine site fidelity of birds to certain ponds.
4. Assess the hydrology and present morphology of the South Bay sloughs by analyzing existing data augmented with new data.
5. Characterize invertebrate and fish communities in the slough systems and compare with South Bay pond communities.
6. Develop a land surface elevation map for the South Bay.

Work on these tasks began in Summer; the projected availability of data varies, as described below.

1. Task 1: Bathymetry of Ponds

USGS has developed a shallow-water sounding system comprised of an echosounder, differential global positioning system unit (DGPS), and laptop computer affixed to a shallow-draft kayak with a salt water trolling motor. This system is effective in measuring water depths once each second with a precision of 1 cm. A field crew is measuring depths along survey transects across the length or width of the ponds at 100 m intervals. All 53 ponds will be surveyed. Bathymetry data for most ponds will be available by Spring 2004; bathymetry data for certain dry ponds or ponds with low or fluctuating water levels will be available in Summer 2004.

Water depths measured with the system will be converted to NGVD29 by surveying the staff gauge at each pond and adjusting water depth to the water level of the pond during the survey. Program Topogrid (ArcInfo, ESRI, Inc.) will be used to create a 50-m bathymetric grid interpolated from the 100-m sample transects. The pond coverages will be made into geographic information system (GIS) grids in NAD83, with NGVD29 depth datum in Universal Transverse Mercator (UTM) coordinates. The GIS grids will be available in Fall 2004.

2. Task 2: Biological and Chemical Conditions in Ponds

This task consists of a baseline characterization of the physical and biological aspects of all 53 ponds. Complementary sampling will be conducted in the slough system (see Task 5). Water, sediment, primary production, and invertebrates from all 53 ponds were sampled in late spring and early summer of 2003. Fish sampling will be conducted in a subsample of ponds in each system in Spring 2004. In addition, samples were collected for initial mercury analysis; these samples have been archived and will be analyzed when funding becomes available.

Water samples were taken at 4 locations in each pond; each location is in a separate quadrant of each pond. Water sample analytical parameters include salinity, pH, temperature, turbidity, dissolved oxygen, chlorophyll, nitrogen (NH4-N and NO3-N), total and soluble phosphorus, and sulfur. Samples are currently undergoing analysis, and data are expected in December 2003.

A sediment sample was also collected from each quadrant, dried, and analyzed for salt content, composition (sand/silt/clay), and bulk density. Sediment composition, salt content, and bulk density data are expected in December 2003.

Three sediment samples per quadrant (total 648 samples) were sieved through 1.0 mm mesh screens to determine invertebrate composition and abundance. One sample of each set of 3 samples was further sieved through a 0.5 mm mesh screen. Invertebrate samples were preserved and stored. Invertebrates from these samples will be sorted and identified at the UC Davis invertebrate lab, and then a subsample dried and weighed to estimate total biomass. In addition, 4 pelagic sweep samples per pond (one per quadrant; total 216 samples) were collected for invertebrates, and processed as above. Invertebrate samples are currently undergoing analysis, and results are scheduled to be available Spring 2004.

Fish sampling will be conducted seasonally from 6-10 representative ponds with salinities below 80 ppt (specific ponds are still to be determined). Fish will be collected from 3-5 fixed sampling sites in each pond with standard bag seine and with net sets with monofilament gill nets of variable mesh. Captured fish will be identified to species, or if needed, voucher specimens will be submitted to taxonomic specialists. All captured fish will be counted, and the first 25 of each species measured for total length. Habitat characteristics will be quantified in the capture locations. Fish assemblages will be characterized and related to environmental variables with cluster or multivariate analyses (Green and Vascotto 1978, Ludwig and Reynolds 1988). Fish sampling is scheduled to begin in Spring 2004, and data will be available within approximately 4 to 6 months.

The mercury assessment will be conducted when funding becomes available. As an initial step in assessing mercury in the Alviso system, 4 sediment samples (1 per quadrant) from each of the 15 most biologically active ponds will be homogenized and the 15 composite samples analyzed for total and methyl mercury. Sediment samples will also be collected in the adjacent sloughs (see Task 6). A composite invertebrate sample from each pond, augmented by separate sampling when necessary, will be used to estimate methyl mercury in the major invertebrate species or next higher taxa by pond. This work will be integrated with existing (T. Maurer, FWS, unpubl. data) or new contaminant data on fish and wildlife.

Single season water, sediment, invertebrate, and fish sampling will be interpreted with respect to physical or biological changes among seasons from the ongoing seasonal USGS Place-based study of 6 ponds (Ponds A9-A15) initiated in 2002.

3. Task 3: Bird Surveys in Ponds

Bird surveys are being conducted monthly in all ponds following existing protocols (Miles et al. 2000, Takekawa et al. 2001a). Monthly monitoring of bird populations in the ponds is designed to provide an estimate of baseline reference conditions, as well as document changes in the bird community as early management actions are taken.

Each month, all birds are counted within 3 hours of high tide on each pond from the middle of the pond to the crown of the levee. Ponds are divided into 250 m x 250 m grids. Birds are identified to species, enumerated, and recorded in a grid square within a pond. Birds are analyzed by month, grid, foraging guild, and behavior. The behavior of birds is divided into feeding and non-feeding activities to estimate mean diurnal foraging rates. Water temperature, salinity, and water

depths are being measured during each survey. Monthly bird survey data for all ponds are available starting with October 2002.

Habitat use and foraging activity will be related to open water depth (see Task 1) to suggest optimal management for diving species by water depth.

4. Task 4: Hydrology and Morphology of South Bay Sloughs

Existing hydrologic and sediment datasets are being obtained from all available sources in the South Bay (including CTD data from Mud Slough, Old Coyote Creek and Artesian Slough gathered by the San Jose Environmental Services Department, flow and sediment data from input streams collected by the USGS, and a study on velocity and salinity gradients in Coyote Creek conducted by Stanford University). Review and compilation of the data should be completed by early 2004, and a summary report will be available approximately 4 to 6 months later, contingent upon funding.

One known data gap is measurement of the major sediment loads from the South Bay watershed. The USGS measures water discharge in five South Bay tributaries; Alameda Creek, Coyote Creek, and the Guadalupe River are the largest sources of freshwater to South Bay (Friebel et al. 2002). Of these three, sediment load is measured on the Guadalupe River and Alameda Creek but not Coyote Creek. A sediment station (measuring daily seasonal suspended sediment load) at the Coyote Creek flow station will be installed to provide more accurate assessment of the sediment inflow to South Bay and boundary condition data for numerical models of sediment dynamics in South Bay.

This task also includes developing a sediment budget (sediment sources, sinks, and deposition) for the South Bay. Some of the South Bay sloughs are filling with sediment according to several observations, perhaps because subsidence caused by groundwater overdraft has ceased. Sediment input would be estimated from the local watersheds. This work will be conducted in partnership with the Regional Monitoring Program. Jaffe *et al.* (unpubl. data) are developing an estimate of sedimentation rates in the open waters of South Bay with support from the Regional Board. Previous USGS analyses of sediment transport in the South Bay (Lacy et al. 1996, Cheng et al. 1998) and a daily numerical box model of sediment transport being developed (M. Lionberger, pers. comm.) will be used to estimate sediment flux between the South Bay and the rest of San Francisco Bay at the San Mateo Bridge. Sediment volume being deposited or eroded from the South Bay sloughs would be estimated by taking the difference between a 1990 bathymetric survey with the measured slough bathymetry data and the planned survey of land surface elevation that will be conducted in May 2004 (Task 6).

5. Task 5: Invertebrate and Fish Communities in the South Bay Sloughs

Pond restoration will require biological colonization from adjacent sloughs and bay mud flats. This task supplements the in-pond surveys of invertebrates and fishes in salt ponds (Task 2) with data from adjacent sloughs. Surveys will be conducted in the major sloughs of the Alviso (Stevens Creek, Guadalupe Slough, Alviso Slough, Coyote Creek, and Mud Slough), and Baumberg (Mt. Eden Creek, Alameda Creek, and Alameda Flood Control Channel) systems. This task also includes summarizing the available existing invertebrate surveys from South Bay mud flats (e.g., J. Thompson, USGS, unpubl. data). This task is currently slated to begin in Spring 2004.

Three invertebrate sweep and three benthic samples will be collected in the main sloughs in 3 locations (below, adjacent, above) relative to the ponds. In the Alviso system, 5 replicate sediment samples will be collected and composited from 3 locations (below, adjacent, and above the ponds) in 4 sloughs (Guadalupe, Alviso, Mallard, and Mud sloughs), for a subtotal of 12 samples. An evaluation of Coyote Creek will be compiled from the lower slough samples. At each of the 12 locations, 2 sediment samples will collected (one at the edge of the mud flats and one within the marsh lining the sloughs) for total mercury analysis (24 samples total). Twelve of these samples (6 from the mudflats, 6 from the marsh lining) will be randomly selected and analyzed for methyl mercury. Data from these samples will be compared to levels within the ponds. To expedite the project work, samples for mercury may be collected separately (before the invertebrate sweep and benthic samples).

Fish surveys will be conducted seasonally (once every three months) in the major sloughs surrounding the salt ponds. Fish collections will be made from 3-6 fixed sampling sites including locations below, adjacent, and above the ponds. Fish collections in sloughs will include use of seines and gill nets; however, fishing time for gill nets is limited to 2-hr sets during slack tide. If seining and gillnetting are not feasible in sloughs, other methods (e.g., fyke nets or trap nets, bottom trawling) may be attempted. Captured fish will be identified to species. If fish cannot be reliably identified, voucher specimens will be submitted to taxonomic specialists for identification. All captured fish will be counted, the first 25 individuals of each species will be measured for total length, then all fish will be released in the vicinity of capture.

Water quality data (water temperature, dissolved oxygen, pH, salinity, and turbidity) will be measured concurrently with the fish sampling. Other habitat characteristics will be measured as needed. Fish species assemblages and their relation to environmental variables will be tested for significance with cluster analyses and discriminant analyses (Green and Vascotto 1978) or other appropriate multivariate statistical procedures (e.g., Ludwig and Reynolds 1988).

6. Task 6: Land Surface Elevation Map for the South Bay

A remotely sensed measurement of the land surface elevation will be made in May 2004 using the NASA EAARL (Experimental Advanced Airborne Research LIDAR [Light Detecting and Ranging] system). The NASA EAARL combines a hyperspectral imaging sensor (passive) with a bathymetric LIDAR (active). This system maps topography and very shallow (depths < 1.5 sechi discs) bathymetry. Mapping will be done at low tide to maximize information return. The hyperspectral signal will also be useful for classification of vegetation. Data will be available in June 2004, and a data report is expected in Fall 2004.

ATTACHMENT B

COST ESTIMATE FORMAT

(Note: the first page of "Attachment B Cost Estimate Format" is also available as an Excel file on web site)

Request for Environmental and Engineering Services
SOUTH BAY SALT POND RESTORATION PROJECT

South Bay Salt Pond Restoration Project Long-Term Planning
Cost Estimate Summary (Year 1)

Task	Principal in Charge (Rate = $__/hr)	Project Manager (Rate = $__/hr)	Key Staff #1 (Name & Firm) (Rate = $__/hr)	Key Staff #2 (Name & Firm) (Rate = $__/hr)	Key Staff #3 (Name & Firm) (Rate = $__/hr)	Key Staff #4 (Name & Firm) (Rate = $__/hr)	Key Staff #5 (Name & Firm) (Rate = $__/hr)	Other Staff (Team 1)					Other Staff (Team 2)					Other Staff (Team 3)					Subcontractor Mark-up	TOTAL	Printing/ Mailing Cost	Travel Cost	Other Direct Costs	Other Direct Costs	Other Direct Costs	Mark-up on Expenses	Total Expenses	GRAND TOTAL Labor and ODCs
								Category 1 (Name) (Rate = &__/hr)	Category 2 (Name) (Rate = &__/hr)	Category 3 (Name) (Rate = &__/hr)	Category 4 (Name) (Rate = &__/hr)	Category 5 (Name) (Rate = &__/hr)	Category 1 (Name) (Rate = &__/hr)	Category 2 (Name) (Rate = &__/hr)	Category 3 (Name) (Rate = &__/hr)	Category 4 (Name) (Rate = &__/hr)	Category 5 (Name) (Rate = &__/hr)	Category 1 (Name) (Rate = &__/hr)	Category 2 (Name) (Rate = &__/hr)	Category 3 (Name) (Rate = &__/hr)	Category 4 (Name) (Rate = &__/hr)	Category 5 (Name) (Rate = &__/hr)										
	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $	Total Cost $
Cost Estimate TASK 1 (partial) - Alternative Development (through Development of Preliminary Alternatives and start of Preliminary Design and Cost Estimating)																														
Task 1a Opportunities and Constraints																														
Task 1b Detailed Project Goals, Initial Restoratin Concepts, and Alternative Evalutation Criteria																														
Task 1c (partial) Existing Conditions and "Without Project" Conditions/No Action Alternative																														
Task 1d Develop Initial Restoration Alternatives and Project Phasing																														
Task 1e Develop Preliminary Restoration Alternatives																														
Task 1f (partial) Preliminary Design and Cost Estimating/Define Final Project Alternatives																														
Total Task 1:																														
Cost Estimate TASK 2 - Information Gathering																														
Total Task 2:																														
Cost Estimate TASK 3 (partial) - Physical Modeling (Including Model Set-up, Calibration, and Preliminary Model Runs)																														
Total Task 3:																														
Cost Estimate TASK 4 (partial) - Flood Management, Protection, and Enhancement (Including Flood Management Needs Assessment, Opportunities and Constraints, and Integration with Restoration)																														
Total Task 4:																														
Cost Estimate TASK 7 (partial) - NEPA/CEQA Compliance and Related Documents																														
Task 7a (partial) Scoping, Environmental Setting Report, and Data Gaps Memorandum																														
Total Task 7:																														
Cost Estimate TASK 8 (partial) - Regulatory Coordination and Permitting																														
Total Task 8:																														
Cost Estimate TASK 9 (partial) - Cultural Resources Survey and Initial Consultation																														
Total Task 9:																														
Cost Estimate TASK 10 (partial) - Monitoring and Adaptive Management Plan (Including Preliminary Monitoring and Adaptive Management Plan)																														
Total Task 10:																														
Cost Estimate TASK 11 (partial) - Recreation/Access Plan																														
Total Task 11:																														
Cost Estimate TASK 12 (partial) - Project Management for Year 1																														
Total Task 12:																														
Grand Total Tasks 1 through 12:																														

Please Note: The format provided is not intended to suggest that the Conservancy expects team submittals, or that only 6 firms can be on a team, or that only 5 rate categories are allowed for each team. The format should be expanded or compressed as appropriate to reflect the composition of the firm/team submitting the estimate.

South Bay Salt Pond Restoration Project Long-Term Planning
Cost Estimate Summary (Years 2-4; Calendar Years 2005-2007)

Task	Estimated Budget $
Cost Estimate TASK 1 - Alternative Development	
Cost Estimate TASK 2 - Information Gathering	
Cost Estimate TASK 3 – Modeling of Physical and Ecological Processes	
Cost Estimate TASK 4 - Flood Management, Protection, and Enhancement	
Cost Estimate TASK 5 - Detailed Design and Cost Estimating of Component Projects	
Cost Estimate TASK 6 - Feasibility Report for Components to be Constructed by Corps	
Cost Estimate TASK 7 - NEPA/CEQA Compliance and Related Documents	
Cost Estimate TASK 8 - Regulatory Coordination and Permitting	
Cost Estimate TASK 9 - Cultural Resources Survey and Consultation	
Cost Estimate TASK 10 - Monitoring and Adaptive Management Plan	
Cost Estimate TASK 11 – Recreation and Public Access Plan	
Cost Estimate TASK 12 – Operations and Maintenance Plan	
Cost Estimate TASK 13 - Project Management	
Grand Total Tasks 1 through 13:	