

**SOUTH BAY SALT POND RESTORATION PROJECT  
REPORT OF ANNUAL ACTIVITIES  
MARCH 2003 – MARCH 2004**

**I. INTRODUCTION**

Acquiring the South Bay salt ponds has offered an unprecedented opportunity for substantial wetlands restoration of the southern end of the Bay-Delta Estuary, improving the physical, chemical and biological health of the San Francisco Bay.

The California Department of Fish and Game (DFG) and U.S. Fish and Wildlife Service (USFWS) acquired title to the Cargill salt ponds, pursuant to purchase and phase-out agreements. Escrow closed on March 6, 2003. The purchase price was \$100 million, with funds coming from the Wildlife Conservation Board (WCB), USFWS, the Richard and Rhoda Goldman Fund, the William and Flora Hewlett Foundation, the Gordon E. and Betty I. Moore Foundation, and the David and Lucile Packard Foundation.



Photo Courtesy NASA

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The USFWS and DFG, with Cargill's technical assistance, are currently planning and preparing for the initial stewardship of the salt ponds (maintenance of levees and management of water). The State Coastal Conservancy (SCC) will facilitate long-term restoration planning in partnership with DFG and USFWS. Expected to take five years and cost approximately \$14 million, planning will be funded by the private foundations, SCC, WCB, and the federal government. The SCC is working closely with USFWS and DFG staff, is using consultants to assist with technical work and environmental compliance, and is engaging regulatory agencies, federal, state, and local agencies, non-governmental organizations, scientists, and the public in the restoration planning process.

Please also see Exhibit 2: Project Location and Site Map, Exhibit 3: Habitat Map, Exhibit 4: Project Goals and Objectives, Exhibit 5: Organizational Structure, and Exhibit 6: Schedule.

## II. ISSUES TO BE CONSIDERED

Having acquired the 15,100-acre South Bay Salt Ponds, the State of California and United States propose to restore these purchased properties to a mix of tidal habitats and managed shallow open water regions, enhance wetland habitats for migratory birds, special status, and native species, and provide for flood management and wildlife-oriented public access/recreation for South Bay communities. Based on current knowledge, the following key issues need to be addressed, and any problems resolved, to insure that restoration goals are achieved, and long-term management planning efforts realized.

- *Mix of Habitats and Protection of Existing Resources:* The Project Management Team will need to establish which ponds to restore to tidal habitats, which will remain managed salt ponds, how to manage the remaining ponds to maximize benefits for shorebirds and waterfowl, and how the apportionment and the phasing of restoration will affect existing resources. Numerous published reports, plans, and studies have developed goals for habitat restoration; these will be considered when restoration goals are developed.
- *Sediment Supply and Dynamics:* Soil compaction and groundwater extraction have caused sediment deficits in many of the South Bay Salt Ponds. The success of restoring these subsided ponds, allowing them to evolve into tidal marsh, depends on several factors incorporated into the restoration planning process. These include analyzing the rate at which ponds evolve to tidal marsh under various conditions, assessing the topography/ bathymetry of the ponds, tracing the hydrologic connections between restored ponds and the Bay, measuring the suspended sediment concentrations in the South Bay, and determining what other sources of





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sediment, such as dredged material, can be made available to accelerate the restoration process.

- *Flood Management:* Bayfront levees surrounding the South Bay salt ponds afford flood protection for many South Bay communities, the most critical protection being the corridor from Mountain View to San Jose, where groundwater extraction has caused extensive subsidence. As these bayfront levees are breached to restore tidal in-



flow, flood management plans will have to incorporate either reinforcement or replacement of levees on the upland side of the salt ponds to insure continued protection for the affected communities. In addition, there may be opportunities to enhance fluvial flood protection on local creeks and rivers, including the Guadalupe River, Alameda Flood Control Channel, and Coyote Creek, as salt ponds at the mouths of creeks are opened to the tide.

- *Public Access and Recreation:* Birdwatchers, kayak and canoe paddlers, anglers, nature photographers, waterfowl hunters, environmental educators and their students, hikers, and tourists from around the world enjoy what the San Francisco Bay wetlands and related habitats offer. Because of the fragility of the Estuary's wetland ecosystems, public access and recreation opportunities will have to be carefully planned, and interaction coordinated between wildlife and humans.



- *Existing Infrastructure:* The urban areas surrounding San Francisco Bay present restoration planners with numerous infrastructure constraints. The Hetch Hetchy Aqueduct, Pacific Gas & Electric distribution lines both overhead and underground, sewage mains, roads, wastewater discharge plants, marinas and ports, railroad lines, and other infrastructure either pass through or exist in proximity to the South Bay salt ponds. Restoration planners must identify the existing infrastructure, as well as offer general and specific strategies for addressing common infrastructure constraints.



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- *Introduced Cordgrass:* Highly aggressive invasive species, such as introduced Cordgrass (*Spartina alterniflora*), can drastically alter both the physical structure and biological makeup of tidal marshes, mudflats, and creeks. These invasive species could seriously hinder restoration efforts and hamper progress toward reaching our

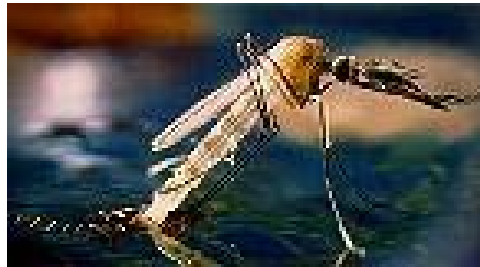
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ecological goals. The Conservancy is coordinating the Introduced Spartina Project and is the state lead on the EIR/EIS. USFWS is the federal lead. Restoration design will integrate the preferred control methods from the EIR/EIS into the South Bay Salt Pond restoration plans.

- *Cultural Resources:* People living in or near the South Bay Estuary have long used these abundant wetlands as a resource. Native Americans, who had lived near the Estuary for thousands of years, sustained themselves on mussels, clams, oysters, fish, waterfowl, and mammals found in the area. Missionaries in the early 1800s used lands around the Estuary for grazing cattle and sheep. In the 1850s, after the onset of the Sierra Nevada Gold Rush, tidal marshes and mudflats were diked and drained or filled to provide increasing populations with agricultural property, roads, rail lines and ports. Gathering salt from the Bay for commercial use began in the South Bay as far back as 1854. A thorough study of the cultural resources in the areas under consideration for acquisition and restoration will be undertaken to both document significant historical resources and determine what effect restoration activities will have on these resources.
- *Contaminants:* Tidal marsh restoration could result in the mobilization of existing contaminants in salt ponds and bay mudflats as ponds are opened to tidal action. Furthermore, restoration planners should determine whether restoration will generate environmental conditions suitable for mercury methylation and/or contribute to the increased bioavailability of other compounds, and, if so, how to address this potential concern.
- *Public Health:* Vector control, especially mosquito control, will also be an important consideration in the design of the restoration project. Mosquito breeding can be curtailed by ensuring adequate water circulation and tidal inundation.



### III. LONG-TERM RESTORATION PLANNING PROGRESS

The Conservancy, DFG, and USFWS have undertaken the following tasks to date:

#### *Project Management Team*

- A Memorandum of Understanding between DFG, FWS, and Conservancy describing roles and responsibilities regarding the Long-Term Restoration Planning has been signed.
- The Santa Clara Valley Water District, Alameda County Flood Control District, and U.S. Army Corps of Engineers have been formally added to the Project Management Team, which meets bi-weekly.
- A Workplan, Budget, and Schedule for the planning process have been written.

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- The U.S. Army Corps of Engineers was authorized to revisit the *South Bay Shoreline Study* and was funded in 2004 to conduct a Reconnaissance Study and write a Project Management Plan. These are being written in coordination with the Project Management Team and technical consultants.
- The Executive Leadership Group, made up of the Executive Director of DFG, the Executive Officer of the Conservancy, and the California/Nevada Operations Manager of FWS, has convened twice.
- The State Library is acting as a repository for all project documents. An archive of the project is being maintained in order to serve as a model for other projects and to provide some continuity even if there is staff turnover.

### *Technical Work*

- An on-line bibliographic database, with over 270 studies, has been set up on the project web site.
- Consensus has been reached on the project mission statement, guiding principles, goals, and objectives (Exhibit 4).
- A consulting team was selected to conduct the restoration, flood management, and public access alternative development and analysis. Philip Williams and Associates, with EDAW, H.T. Harvey, and Brown and Caldwell, were selected after a lengthy, open process. These consultants are now under contract for their first year of work.
- Moffatt and Nichol was contracted to conduct three tasks: an Inventory of Water Conveyance Facilities in the South Bay (urban runoff and wastewater discharge facilities), a Hydrodynamic Modeling Tools and Techniques report, and an analysis of the Perimeter Levee. These three reports are nearing completion and will feed into alternative development.
- U.S. Geological Survey (USGS) is conducting baseline, interdisciplinary monitoring. USGS is monitoring birds, fish, invertebrates, and water quality in all of the acquired ponds and fish, invertebrate, and hydrology in the neighboring sloughs. In addition, USGS is collecting bathymetric information for the ponds and topographic information for the levees, mudflats, and neighboring upland areas.
- Point Reyes Bird Observatory (PRBO) has developed a Habitat Conversion Model. PRBO will be able to model predicted bird densities for restoration alternatives as they are proposed and make recommendations on the amount, configuration, and characteristics of tidal marsh and managed ponds in the South Bay that will maximize bird species diversity and density. PRBO will help determine how much pond habitat is needed to support the U.S. Fish and Wildlife Service's recovery plan objective of maintaining 500 Western snowy plovers in the South Bay.
- Hydrologic data collection has begun in the South Bay, to measure water level and water quality parameters. This data will feed into numerical modeling efforts to analyze restoration impacts on such things as flooding and water quality. The data collection plan was coordinated with the City of San Jose and the U.S. Geological Survey and is being conducted by Environmental Data Systems.

## EXHIBIT 1

### *Regulatory and Trustee Agency Involvement*

- Each Regulatory Agency has assigned at least one representative to the project and quarterly update meetings were held in 2003.
- Presentations by Project Management Team representatives were made to the San Francisco Bay Conservation and Development Commission and the San Francisco Bay Regional Water Quality Control Board.
- A Memorandum of Understanding describing an environmental regulatory integration process for the environmental review of the project was written, reviewed, and signed by all parties. The MOU will help facilitate interagency coordination and provide for early identification and resolution of issues.
- The Conservancy has entered into interagency agreements with the San Francisco Bay Regional Water Quality Control Board and San Francisco Bay Conservation and Development Commission to ensure that staff are available to actively participate in the restoration planning.

### *Scientific Oversight and Involvement*

- A Datagaps Workshop was held in March of 2003. Key Decisions and Questions were written up in order to discuss the datagaps that exist regarding biological, physical, and water quality issues. Approximately 75 scientists and resource managers participated in the workshop.
- A National Science Panel was established and met in July of 2003. Most of their initial recommendations for ensuring scientific rigor have been implemented. The National Science Panel is chaired by Dr. Denise Reed and has the following members: Dr. R. Michael Erwin, Dr. Jorg Imberger, Dr. Samuel N. Luoma, Dr. Jerry Schubel, Charles A. "Si" Simenstad, and Dr. John Teal.
- A Lead Scientist, Dr. Lynne Trulio of San Jose State University, has been selected. Dr. Trulio sits on the Project Management Team and leads the Science Team, which is currently made up of Dr. John Callaway, Dr. Edward S. Gross, Dr. Jessica Lacey, Dr. Frederic H. Nichols, and Dr. John Takekawa. The Science Team will be expanded in the spring of 2004, after development of the Science Strategy and Conceptual Models, which will be presented at the April, 2004 National Science Panel meeting.

### *Public Involvement*

- A project web site, [www.southbayrestoration.org](http://www.southbayrestoration.org), a database of over 1,500 interested people, and two email newsletters have been produced. Email newsletters will be sent out frequently to keep people updated of progress and upcoming meetings.
- Three Public Meetings were held in April of 2003. These meetings kicked-off the public process and included presentations and opportunity for discussion.
- A Stakeholder Assessment was completed by the Center for Collaborative Policy during the summer of 2003. Nearly 70 people were interviewed and major findings and recommendations were summarized. The structure for the collaborative planning process is attached as Exhibit 5.

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- A Stakeholder Forum has been established, made up of 28 local businesspeople, elected officials, environmental advocates, recreation/access advocates, community advocates, and public works/public health agency staff. The Forum is being facilitated by the Center for Collaborative Policy and has public meetings on a monthly to quarterly basis. Work Groups on such topics as habitat restoration, flood management, public access, and funding will be open to everyone and will meet approximately monthly. The Stakeholder Forum will consider the recommendations of the Work Groups and provide advice to the Project Management Team.
- A Local Government Forum, made up of staff and elected officials, has been convened and will meet three to four times per year to get updates on project planning.
- A 16-page insert in *Bay Nature* Magazine focused on the project is being planned for the summer of 2004.
- The Moore Foundation is separately funding a film of the restoration project by Pelican Media, the producers of *Secrets of the Bay*. This is a ten-year endeavor, but short films will be produced over the next couple years to assist with public outreach.

### IV. REMAINING WORK ELEMENTS

Major work elements that remain to be completed are listed below (and are shown on Exhibit 6: Schedule). These work elements will be conducted within the framework of the collaborative planning process that has been established, and work products will be developed with the input and review of the Project Management Team, Stakeholder Forum, Science Team, National Science Panel, and Local Government Forum.

- Continued Data Collection
- Ongoing Technical Analysis of Issues
- Opportunities and Constraints Analysis
- Development of Alternative Selection Criteria
- Definition of Without Project Conditions/No-Action Alternative
- Development of Restoration, Flood Management, and Public Access Concepts and Alternatives
- Analysis and Modeling of Physical and Ecological Processes
- Cultural Resources Work
- National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) Compliance and Selection of a Preferred Alternative
- U.S. Army Corps of Engineers Reconnaissance Study, Feasibility Report, and Chief's Report
- Monitoring and Adaptive Management Plan
- Operations and Maintenance Plan
- Regulatory Coordination/Permitting of Phase 1

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- Detailed Design and Cost Estimating for Phase 1
- Implementation Funding Strategy
- Construction of Phase 1

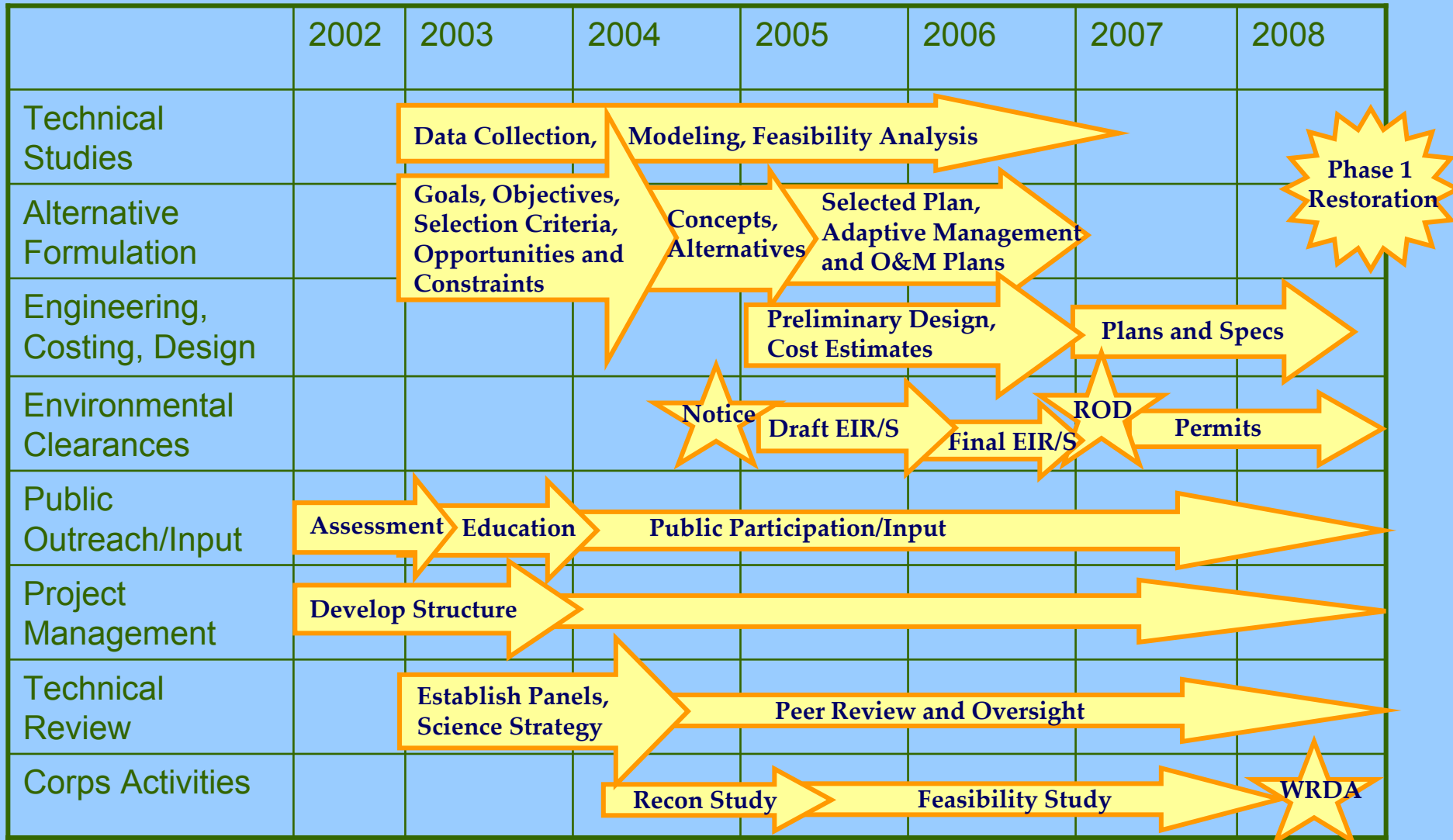
The following will be the major products of the planning process and will be developed in cooperation with Stakeholders:

- Restoration, Flood Management, and Public Access Plan for South Bay Salt Pond project area
- Programmatic EIR/EIS, with project levels components
- Implementation/Funding Plan
- Monitoring and Adaptive Management Plan
- Operations and Maintenance Plan
- Phase 1 Project Components “Ready to Go”: analyzed in EIR/S, designed, permitted, funded
- Feasibility Report(s) produced for components to be implemented by U.S. Army Corps of Engineers

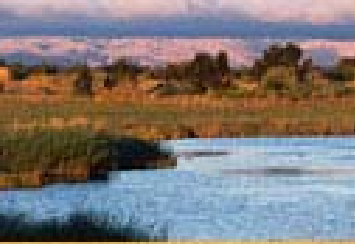




# South Bay Salt Pond Restoration Project



EIR/S = Environmental Impact Report/Environmental Impact Statement; ROD = Record of Decision; O&M = Operations and Maintenance; WRDA = Water Resources Development Act



# South Bay Salt Pond Restoration Project



## Alternatives Development Process

(dates approximate)

- Round 1  
Apply  
criteria
- Round 2  
Model
- Round 3  
Model
- Round 4  
Model  
Public  
comments

**Concepts (Dec 04)**

**Initial Alternatives (Feb 05)**

**Preliminary Alternatives (May 05)**

**Final Alternatives (Nov 05)**

**Recommended Alternative**

**NOI/NOP (Oct 04)**

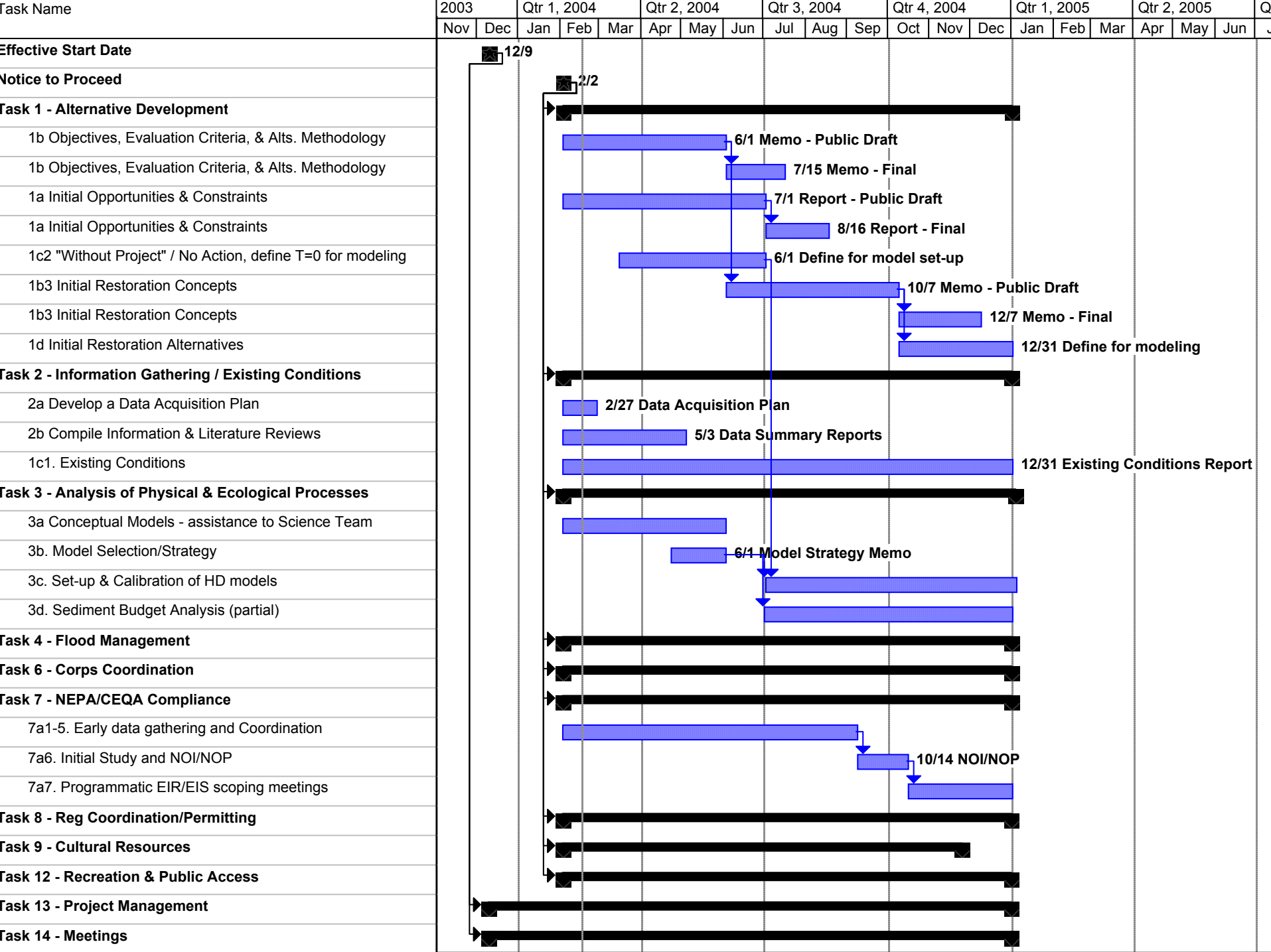
**Scoping Meetings (Nov/Dec 04)**

**DEIR/S (Jun 06)**

**FEIR/S (Dec 06)**

**ROD (Apr 07)**



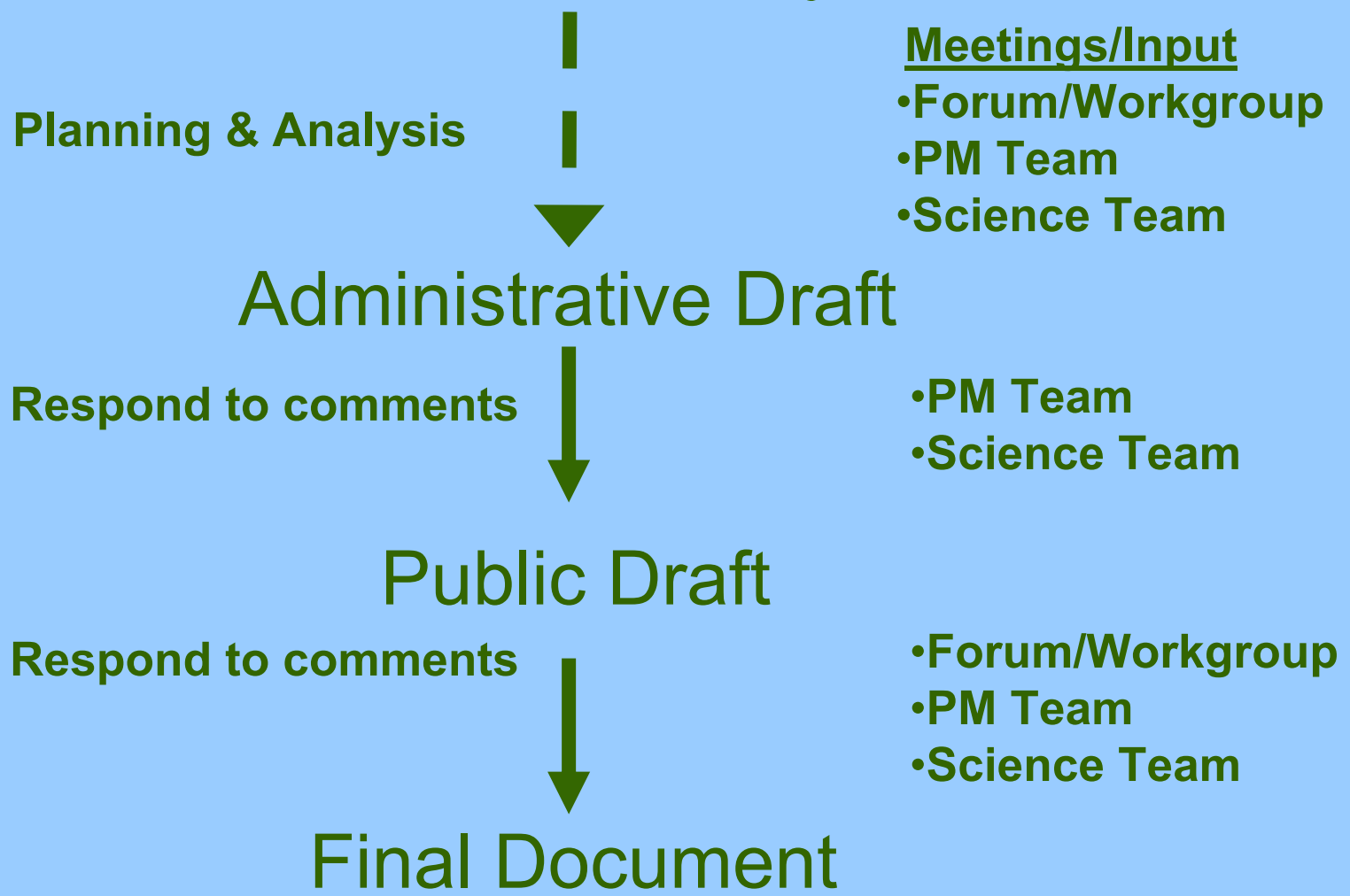




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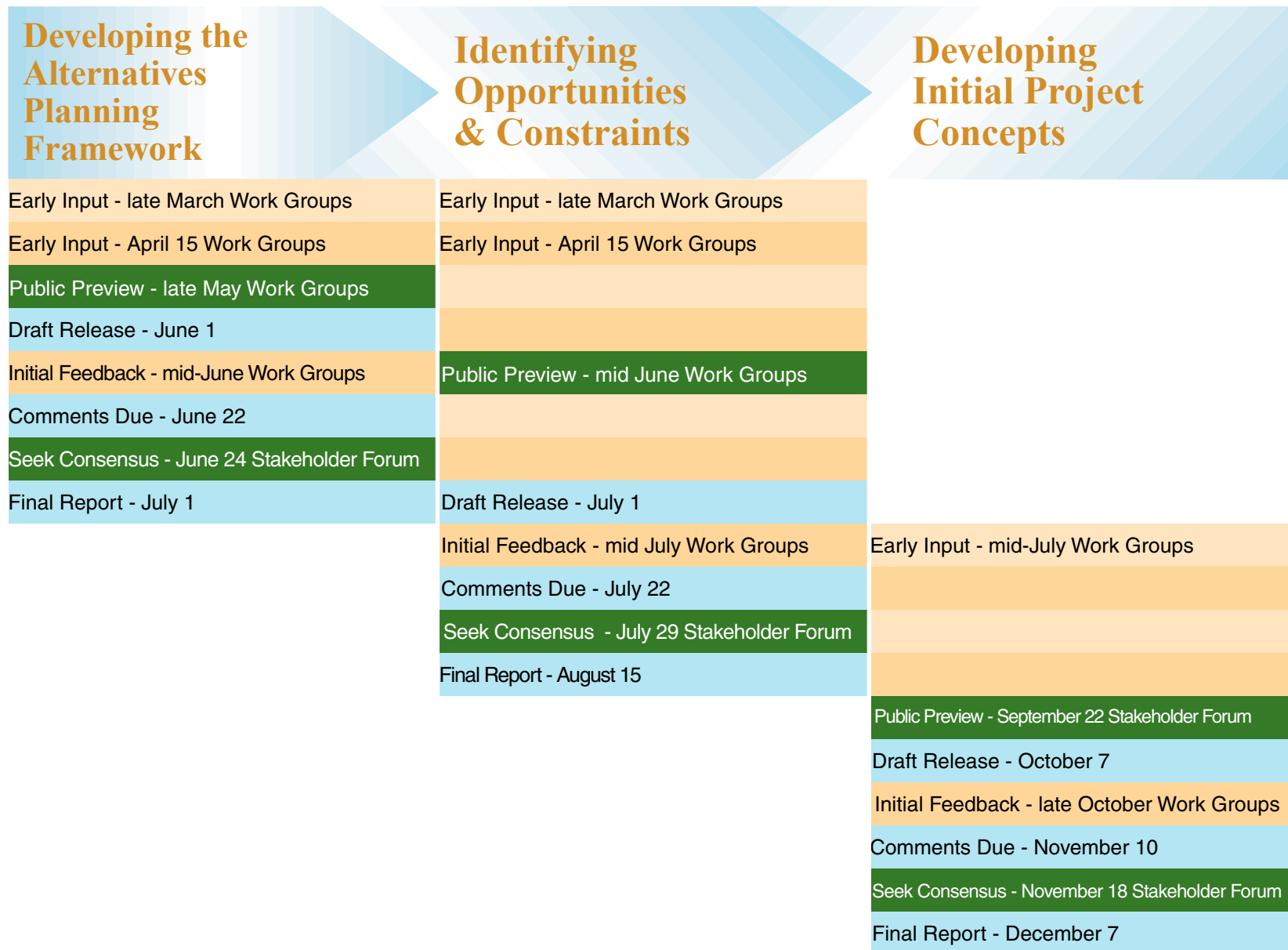


## Integration with Public for Key Deliverables



# South Bay Salt Pond Restoration Project

## Opportunities for Stakeholder Input





**PWA TEAM SUMMARY OF DELIVERABLES – Stage 1 (2004 partial)**  
**Presented for discussion with the Project Management Team, March 23, 2004**

**Table 1. Stage 1 Deliverables Schedule, REVISED 3/23/04**

<b>Task</b>	<b>Deliverable</b>	<b>Administrative Draft</b>	<b>Public Draft</b>	<b>Final Document</b>
2.a	Data Acquisition Plan Memorandum	2/20/04	---	3/6/04
13.b	Project Management Plan	3/22/04	---	4/16/04
13.c	Quality Control Plan	3/22/04	---	4/16/04
6.a	Integrated Corps Strategy Memorandum	4/1/04	---	7/1/04
3.a.2	Mercury Technical Memorandum	5/21/04	---	6/30/04
2.b	Data Summary Memorandum <sup>1</sup>	5/3/04	---	6/1/04
3.b	Analysis Strategy and Model Selection Memorandum	5/3/04	---	6/1/04
1.b.1, 1.b.2, 1.b.4	<b><i>Alternatives Development Framework Memorandum<sup>2</sup></i></b>	5/3/04	6/1/04	7/15/04
13.d	Stage 2 Work Plan	6/1/04	---	6/30/04
1.a, 12.b, 12.d	<b><i>Initial Opportunities and Constraints Summary Report<sup>3</sup></i></b>	6/1/04	7/1/04	8/15/04
7.a.1	Map of Area of Potential Effect(APE) Boundaries	7/15/04	---	9/7/04
1.c.1	Existing Conditions Progress Report (50% complete)	8/6/04	---	9/7/04
1.b.3, 1.c.2, 4a, 12.e	<b><i>Initial Project Concepts Memorandum<sup>4</sup></i></b>	8/15/04	10/7/04	12/7/04
7.a.3	<b><i>Initial Study and NOI/NOP</i></b>	9/7/04	*	10/14/04
various	Other Studies as Identified (e.g., field data collection efforts)	Various	Various	Various

Note: key deliverables in bold italic

<sup>1</sup> Includes the NEPA/CEQA data gaps memo.

<sup>2</sup> Includes Detailed Project Objectives, Initial Evaluation Criteria, and Alternatives Development Methodology

<sup>3</sup> Includes map(s) of Existing Recreation Facilities / Features

<sup>4</sup> Includes “Without Project”/No Action Alternative

### **Data Acquisition Plan Memorandum**

The purpose of the Data Acquisition Plan is to guide the collection of information pertinent to restoration planning. The Data Acquisition Plan identifies topics of data collection, identifies data sources, and specifies data collection processes and protocols (including protocols for GIS data). The Data Acquisition Plan is the first step in the Information Gathering Task (Task 2).

### **Project Management Plan**

The Project Management Plan will provide information and procedures for managing PWA Team services to promote timely and on budget performance. The Plan will address the work plan (scope), budget, schedule, team member roles and responsibilities, staff contact information, communication formats and protocols, document management protocols, processes for contract modifications, invoicing standards, and project performance tracking measures. The Project Management Plan will refer to the Quality Control Plan where information is duplicated between the two plans.

### **Quality Control Plan**

The objective of the Quality Control Plan (QCP) is to provide a process and framework of technical review, evaluation and documentation of project generated for the project and atherby check for conformance with sound technical and engineering practices. The QCP will be developed based on the US Army Corps of Engineers' Quality Management Plans for the San Francisco District and South Pacific Division.

### **Integrated Corps Strategy Memorandum**

This memo will summarize recommendations for an integrated strategy for Corps participation in the project and funding. The PWA Team will work with the Corps and PMT to develop and help implement this integrated strategy. Both short-term (i.e., FY2005) and long-term (i.e., project implementation) funding will be considered.

### **Mercury Technical Memorandum**

For this memorandum, the PWA Team (BC and Applied Marine Science) will present a qualitative conceptual model of mercury cycling in the project area and identify potential management strategies to mitigate negative ecological impacts of mercury pollution associated with ecosystem restoration. This deliverable will help guide planning and analysis processes during the development of restoration alternatives.

### **Data Summary Memorandum**

The Data Summary Report will summarize existing pertinent information identified in the Data Acquisition Plan, identify critical data gaps, and present recommendations for filling those gaps. The results of the Information Gathering Task will help provide a sound scientific basis for the restoration planning.

### **Analysis Strategy and Model Selection Memorandum**

We propose to analyze physical and ecological processes through a combination of numerical modeling, applied geomorphology, empirical analysis, and application of ecological principles. The Analysis Strategy and Model Selection Memorandum will describe the strategy for this analysis. Much of the actual analysis will occur in Year 2 (2005). The selected analysis strategy will be designed to answer questions required during development of the project alternatives, determine flood management performance, and provide input to EIR/EIS documents. The Modeling Selection and Analysis Strategy

memorandum will specify the model type, temporal and spatial scales and resolution, underlying assumptions, and include a workplan and schedule for future modeling tasks which support the alternative development processes and flood management efforts. As input to the memorandum, PWA team members will review the recent Modeling Needs Assessment memorandum written by Moffatt & Nichol Engineers and the Point Reyes Bird Observatory's Habitat Conversion Model.

### ***Alternatives Development Framework Memorandum***

This memorandum will present the overall planning framework for alternatives development, evaluation, and selection. It will include detailed objectives and evaluation criteria for selection.

### **Stage 2 Work Plan**

PWA has been contracted to provide services for Stage 1, which includes the first six to nine months of Year 1 (2004), with specific end dates varying by task. During Stage 1, PWA will prepare a work plan for Stage 2 services, which are expected to begin in July 2004 and extend through December 2004. Because of the magnitude and complexity of the South Bay Salt Ponds Restoration project, the scope of services must remain flexible in order to be responsive to the project needs.

### ***Initial Opportunities and Constraints Summary Report***

This report will summarize initial opportunities and constraints information from the Science Team, Project Management Team, Stakeholder Forum and other stakeholders. These will include prior work such as Siegel & Bachand (2001), relevant new information compiled the Information Gathering task, and the opportunities and constraints revealed through early work under the other pertinent tasks listed above. The PWA team will analyze the opportunities and constraints posed by the physical, biological, chemical, regulatory and institutional conditions that affect the project. Opportunities and constraints will be discussed at the landscape level, as well as the specific pond and individual species level.

### **Map of Area of Potential Effect(APE) Boundaries**

EDAW will consult with the PMT and Lead Agencies and applicable NEPA and CEQA Guidelines to establish the boundaries of the Area of Potential Effect (APE).

### **Existing Conditions Progress Report (50% complete)**

This will be a more detailed documentation of site conditions than the Initial Opportunities and Constraints Report. The Existing Conditions report will be 50% complete at the end of Stage 1, and 100% complete at the end of Stage 2 (end of 2004).

### ***Initial Concepts Memorandum***

Once detailed project objectives and initial evaluation criteria have been defined in the Alternatives Development Framework, we will develop an initial range of project concepts. Because of the complexity of the project we anticipate developing various approaches or "options" for habitat restoration, recreation/public access, and flood management (similar to what was done for the Napa Salt Marsh Restoration). For example, on the theme of habitat restoration, different mixes of restored habitat types will define different habitat restoration options. Each concept will consist of a specific combination of habitat restoration, recreation/public access and flood management options.

### ***Initial Study and NOI/NOP***

The Initial Study will briefly describe potential environmental effects of the project and identify issues that will be addressed in the EIS/EIR. The Initial Study will accompany the NOI/NOP (Notice of Intent/Notice of Preparation) for the project that will be published in the Federal Register.