COASTAL CONSERVANCY

Staff Recommendation
June 4, 2009

SOUTH SAN FRANCISCO BAY SALT PONDS RESTORATION: PHASE I IMPLEMENTATION

File No. 02-070-02
Project Manager: Brenda Buxton

RECOMMENDED ACTION: If the Conservancy is awarded up to $5,898,862 from the National Oceanic and Atmospheric Administration under the American Recovery and Reinvestment Act of 2009, authorization to accept and disburse the funds for implementation of up to three Phase I projects under the South Bay Salt Ponds Restoration Project.

LOCATION: San Francisco Bay, South of the San Mateo Bridge, in Alameda, San Mateo, and Santa Clara Counties (Exhibit 1).

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

EXHIBITS

Exhibit 1: Project Location

Exhibit 2: November 6, 2008 South Bay Salt Ponds Restoration: Phase I Implementation staff recommendation

Exhibit 3: Site Plans for three projects

Exhibit 4: EIS/R (provided to Conservancy members as a separate CD and otherwise available for review at www.southbayrestoration.org), and EIS/R Table of Impacts, Table of Cumulative Impacts, and Mitigation Monitoring and Reporting Program.

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31160-31165 of the Public Resources Code:

"If the State Coastal Conservancy is awarded grant funds by the National Oceanic and Atmospheric Administration (NOAA) under the American Recovery and Reinvestment Act of 2009 (the "ARRA grant funds"), the Conservancy hereby authorizes the acceptance of up to $5,898,862 (five million eight hundred ninety eight thousand eight hundred sixty two dollars) in ARRA grant funds and the disbursement of up to $5,825,214 (five million eight hundred twenty five thousand two hundred fourteen

dollars) of those funds for the project management and construction of one or more (depending on the amount of the ARRA grant funds) of the following three Phase I projects under the South Bay Salt Ponds Restoration Project, as follows:

1. Disbursement of up to $1,611,350 (one million, six hundred eleven thousand three hundred fifty dollars) to Ducks Unlimited for construction of the Pond A6 tidal restoration project in the Alviso Pond Complex.
2. Disbursement of up to $976,000 (nine hundred seventy six thousand dollars) to the Santa Clara Valley Water District for the construction of a notch at Pond A8 to allow controlled tidal restoration in the Alviso Pond Complex.
3. Disbursement of up to $3,165,864 (three million one hundred sixty five thousand eight hundred sixty four dollars) to Alameda County for the construction of the Ponds E8A, E9, and E8X tidal restoration project in the Eden Landing Complex.
4. Disbursement of up to $72,000 (seventy two thousand dollars) for project management services to oversee and coordinate implementation of these construction projects.

If the ARRA grant funds awarded by NOAA are less than $5,898,862 (five million eight hundred ninety eight thousand eight hundred sixty two dollars), the Conservancy delegates to the Executive Officer the authority to determine the allocation of the ARRA grant funds to one or more of the three projects, consistent with the terms of the ARRA grant and applicable law.

The disbursement of the funds shall be subject to the following conditions:

1. Prior to the disbursement of any Conservancy funds for each project, the grantee for that project shall submit for the review and approval of the Conservancy's Executive Officer a work program for the project, including schedule and budget, and the names of any contractors it intends to use to complete the project.
2. In carrying out the project, each grantee shall:
    a. Comply with all applicable mitigation and monitoring measures that are identified in the South Bay Salt Pond Restoration Project Environmental Impact Statement and Environmental Impact Report (EIS/R) that was certified with findings by the California Department of Fish and Game on March 11, 2008.
    b. Comply with all applicable terms and conditions that may be required by the NOAA grant to the Conservancy, that may be imposed under the ARRA or that may be necessary to enable the Conservancy to comply with terms and conditions of the ARRA grant.
3. Prior to commencing its project, Ducks Unlimited shall enter into and record an agreement pursuant to Public Resources Code Section 31116(c) sufficient to protect the public interest and provide for maintenance of the project.

Staff further recommends that the Conservancy adopt the following findings:

"Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the current Project Selection Criteria and Guidelines, last updated by the Conservancy on September 20, 2007.
2. The proposed authorization is consistent with the purposes and objectives of Chapter 4.5 of Division 21 of the Public Resources Code, regarding the Conservancy's mandate to address the resource and recreational goals of San Francisco Bay Area.
3. The Conservancy has independently reviewed and considered the information contained in the South Bay Salt Pond Restoration Project Environmental Impact Statement and Environmental Impact Report (EIS/R) that was certified with findings by the California Department of Fish and Game on March 11, 2008 in order to comply with the California Environmental Quality Act ("CEQA").
4. The EIS/R identifies potential significant effects from implementation of Phase I projects of the South Bay Salt Pond Restoration Project, including the projects proposed in this authorization, in the areas of Water Quality, Cultural, Traffic, Noise, Air Quality and Cumulative Impacts. With regard to these impacts, the Conservancy finds that the Ponds A6, A8, E8A/9/8X projects, as modified by incorporation of the mitigation measures identified in the EIS/R, avoids, reduces or mitigates all of the possible significant environmental effects of the project, except for the Cumulative Impacts identified in finding 5, below.
5. Construction of the Ponds A6, A8, E8A/9/8X projects may result in "significant and unavoidable" Cumulative Impacts in the areas of Water Quality, Biological Resources, Cultural Resources, Socioeconomics and Environmental Justice, Traffic, Noise, and Air Quality. Specific environmental and other benefits of the project described in the accompanying staff recommendation and detailed in the EIS/R outweigh and render acceptable these unavoidable adverse environmental effects because the project will result in the long-term environmental benefits of restoring native habitat for the endangered salt marsh harvest mouse and California clapper rail, threatened steelhead trout and for other plant and animal species that otherwise would be threatened by loss of critical habitat in addition to the other benefits of tidal restoration.
6. Alternatives to the Ponds A6, A8, E8A/9/8X projects analyzed in the EIS/R are infeasible in that they do not achieve the project objectives of habitat restoration, wildlife-oriented public access, and flood protection and will result in the same or greater environmental impact and will not produce the same environmental benefit as the proposed project.
7. Ducks Unlimited is a nonprofit organization existing under Section 501(c)(3) of the U.S. Internal Revenue Code, whose purposes are consistent with Division 21 of the Public Resources Code."

SOUTH SAN FRANCISCO BAY SALT PONDS RESTORATION: PHASE I IMPLEMENTATION

PROJECT SUMMARY:

This authorization would enable the Conservancy to accept federal funds in order to construct three of the Phase I South Bay Salt Ponds Restoration projects and cover staff time and contractor costs associated with implementing these projects. On November 6, 2008, the Conservancy authorized construction of two of the Phase I projects, the Pond SF2 and Bayfront Park overlook projects. That staff recommendation, attached as Exhibit 2, also describes the SBSP Restoration Project's planning effort, Phase I projects, the role of the Adaptive Management Program in project implementation, and the project's EIS/R.

This staff recommendation proposes the acceptance and disbursement of federal funds if awarded to the Conservancy through NOAA's Coastal and Marine Restoration Grants Program (CMRGP) (with the federal funding provided under the ARRA) for three of the Phase I projects: Ponds A6 (330 acres), A8 (550 acres), and E8A/9/8X (630 acres). Conservancy staff has proposed these Phase I projects for funding because they were the most appropriate under the CMRGP emphasis on tidal restoration.

Proposed Tidal Restoration Projects

Pond A6 (Alviso Pond Complex)
The Phase 1 tidal restoration of the 330-acre Pond A6 will be accomplished primarily through four breaches in outboard levees into Alviso Slough and Guadalupe Slough, constructing ditch blocks in the perimeter borrow ditch, and excavation of pilot channels to facilitate tidal exchange. Although the site has subsided approximately 5 feet, the return of tidal action is expected to lead to rapid sedimentation and reestablishment of tidal marsh. Other South Bay tidal restoration projects (such as the SBSP Island Ponds, Cooley Landing.) have demonstrated that natural sedimentation and vegetation establishment will occur within a few years.

The levees surrounding this pond are in poor condition which could lead to uncontrolled breaching during storms. This could create many undesired environmental impacts (tides flowing through borrow ditches instead of historic channels). Timely implementation of this tidal restoration project will prevent these impacts. Ducks Unlimited, a nonprofit organization with extensive experience restoring habitat for waterfowl and other species, will be the construction lead and has matching funds available from a North American Waterfowl Conservation Act grant they received for the SBSP. Construction of A6 is expected to start in 2010 after an additional year of treatment of the invasive *Spartina* which will improve the likelihood of project success. The plan for the proposed restoration is attached as Exhibit 3.

Pond A8 (Alviso Pond Complex)
The restoration of the 550-acre Pond A8 calls for the construction of an armored 40-foot wide notch in an existing levee comprised of five 8-foot wide bays with adjustable weirs to control tidal flow into and out of Pond A8 as well as modification of existing tide gate structures at Ponds A5 and A7. Since Pond A8 sediments have large amounts of mercury as a legacy of upstream mercury mines, the tidal opening at this site is designed to be closed or adapted in case unacceptable ecological impacts occur from opening this pond

to the tides. This project will incorporate an applied study that will test the effects of tidal restoration on the uptake of mercury into the food web (See Applied Studies discussion in the Compliance with CEQA Section). A 475-foot-long pilot channel will be excavated between the Pond A8 notch and Alviso Slough to facilitate tidal exchange. The project is expected to create a stronger tidal regime in Alviso Slough, improving small watercraft navigation and water circulation. During the winter months, the notch will be closed to protect threatened steelhead trout migrating through Alviso Slough. See Exhibit 3 for the restoration design plan.

Ponds E8A/9/8X (Eden Landing Complex)
To restore tidal action to Ponds E8A/9/8X (630 acres), external pond levees will be breached in three locations to Mt. Eden Creek and Old Alameda Creek and water control structures removed, allowing the bay water to reoccupy old slough channels within the ponds. Additional levee breaching and lowering will occur on internal levees within the site to limit the flood risk of restoration. Pilot channels will be excavated through existing marsh in order to facilitate tidal exchange and ditch blocks will be constructed to force tidal flows into old channels and out of borrow ditches. In addition, portions of the existing layer of gypsum in Pond 8A will be mechanically broken up in order to determine if this treatment facilitates the establishment of vegetation. The tidal exchange that will occur between the creeks and the breached pond areas is expected to result in the scouring of channels, deposition of bay sediment, and establishment of vegetation. Exhibit 3 shows the proposed restoration plan.

These projects were selected and designed through the SBSP Restoration Project planning process described in the November 6, 2008 staff recommendation. These projects are consistent with the approach and general project description in that staff recommendation. The Applied Studies discussed above have been funded by previous Conservancy actions or by matching funds from the Resources Legacy Fund (see Applied Studies discussing in November 6, 2008 staff recommendation, attached as Exhibit 2). However, the NOAA program awarding these funds to the Conservancy was not anticipated last year and so the Phase I project participants, timing and funding will change if these funds are awarded. The November 2008 staff recommendation anticipated and stated that the Ponds A6, A8, E8A/9/8X projects would be largely funded by other parties. The award of funds through NOAA's CMRGP would mean a greater federal contribution to restoration construction with the Conservancy as the grant administrator.

<u>Staff and Contractor Costs</u>

If received from the CMRGP, up to $73,648 of the funding would go to fund a portion of the Conservancy staff labor, benefits, and overhead and up to $72,000 would fund a portion of the Executive Project Director contractor costs associated with implementation of these tidal restoration projects.

Site Description: A general description of the SBSP Restoration Project area is contained in the attached November 6, 2008 staff recommendation (Exhibit 2). The three sites proposed for tidal restoration in this staff recommendation are described below.

Located in the Alviso Pond Complex and owned by the US Fish and Wildlife Service (FWS), Pond A6 and A8 were historically part of a large marsh bounded by Alviso and Guadalupe Sloughs. This marsh was surrounded with levees to create salt ponds in the early part of the 20th Century. **Pond A6** has subsided approximately five feet and currently functions as a seasonal pond with no direct hydraulic connection to the Bay. The pond is bisected by Pacific Gas and Electric electrical transmission towers which have recently been upgraded; this infrastructure will continue to be operated after breaching.

Pond A8 also operates as a seasonal or high salinity pond depending on rain fall and tides. The 550-acre pond currently serves as flood overflow storage during high flow events from the Guadalupe River, a function that will continue unchanged by this project. The adjacent slough channels have shrunk from their historical size since they have filled with sediment due in part to the decrease of tidal prism resulting from the creation of salt ponds.

Ponds E8A/9/8X are 630 acres of the Eden Landing Complex in the area bounded by Mt. Eden Creek and Old Alameda Creek. Owned by the California Department of Fish and Game, these ponds currently operate as open-water managed ponds with salinities that vary depending on flows from adjacent creeks, rainfall, and evaporation. The Eden Landing ponds are the least subsided of all the salt ponds.

Project History: See attached November 6, 2008 staff recommendation (Exhibit 2).

PROJECT FINANCING:

Pond A6

Coastal Conservancy's NOAA CMRGP grant	$1,611,350
Ducks Unlimited's North American Waterfowl Conservation Act (NAWCA) grant	$ 99,526
Total Project Cost	**$1,710,876**

Pond A8

Coastal Conservancy's NOAA CMRGP grant	$ 976,000
Regional Water Quality Control Board Prop. 40 grant (SCVWD)	$1,100,000
Santa Clara Valley Water District	$ 356,914
Total Project Cost	**$2,432,914**

Ponds E8A/9/8X

Coastal Conservancy's NOAA CMRGP grant	$3,165,864
Alameda County	$ 761,000
National Fish and Wildlife Foundation	$ 600,000
National Coastal Wetlands Conservation Program grant	$1,000,000
Wildlife Conservation Board	$1,600,000
Total Project Cost	**$ 7,126,864**

Total Conservancy NOAA Coastal Restoration Grant Funds (if awarded)	**$5,753,214**
Total Matching Funds	**$5,517,440**

The project costs above are for construction only and do not include the $73,647 requested for Conservancy staff costs or the $72,000 requested for consultant costs related to implementation of the project. If awarded, the source of the funds for the three implementation projects described above will be the federal American Recovery and Reinvestment Act of 2009 funds that have been made available through the NOAA's Coastal and Marine Restoration Grant Program. Through this grant program NOAA may provide funds for projects to restore coastal and bay habitats that have strong on-the-ground habitat restoration components with long-term ecological habitat improvements and provide social and economic benefits for people and their communities. The three selected projects achieve exactly those objectives.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

This project would be undertaken pursuant to Chapter 4.5 of the Conservancy's enabling legislation, Public Resources Code Sections 31160-31165, to address resource goals in the San Francisco Bay Area.

The South Bay Salt Ponds are within the nine-county Bay Area as required under Section 31162 of the Public Resources Code.

Under Section 31162(b), the Conservancy may act to protect, restore, and enhance natural habitats and connecting corridors, watersheds, scenic areas, and other open-space resources of regional significance. The restoration of the South Bay Salt Ponds would restore and enhance nearly 16,000 acres of wetlands, and would be a habitat restoration project of regional and national significance. This authorization specifically would provide for creation of 1510 acres of tidal habitat.

Consistent with Section 31163(c), the South Bay Salt Pond Restoration Project would implement the policies and programs of the *San Francisco Bay Plan*, as described in the "Consistency with the San Francisco Bay Plan" section of this staff recommendation.

Consistent with Section 31163(c), restoration of the South Bay Salt Ponds meets the following criteria: (1) is supported by adopted regional plans (*San Francisco Bay Plan, San Francisco Baylands Ecosystem Habitat Goals Report*, and the *Water Quality Control Plan* for the San Francisco Bay Basin), (2) is multijurisdictional (spanning three counties) and serves a regional constituency (the restoration project is of national significance and will provide a regional recreational resource), (3) can be implemented in a timely way ((construction of the proposed projects will start fall 2009), (4) provides opportunities for benefits that could be lost if the project is not quickly implemented (the private foundations providing funds have specified project deadlines for completion of planning and starting construction) and (5) includes matching funds (described under Project Financing).

The project is also consistent with Sections 31163(a) and (c), directing the Conservancy to participate in and support interagency actions and public/private partnerships in the San Francisco Bay Area to implement long-term resources and outdoor recreational goals.

CONSISTENCY WITH CONSERVANCY'S 2007 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 10, Objective C** of the Conservancy's 2007 Strategic Plan, the proposed project will restore 1510 acres of tidal wetland habitat.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on September 20, 2007, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Support of the public:** This project is supported by Senator Dianne Feinstein, the Richard and Rhoda Goldman Fund, the William and Flora Hewlett Foundation, the Gordon E. and Betty I. Moore Foundation, the David and Lucile Packard Foundation, Resources Legacy Fund, the California Resources Agency, California Department of Fish and Game, U.S. Fish and Wildlife Service, Santa Clara Valley Water District, Alameda County Flood Control District, the San Francisco Bay Joint Venture, Save The Bay, The Bay Institute, National Audubon Society, Citizen's Committee to

Complete the Refuge, Cargill, and many other agencies, organizations, and individuals.

4. **Location:** The South Bay Salt Ponds are in the nine-county San Francisco Bay Area consistent with Section 31162 of the Public Resources Code.

5. **Need:** Approximately 85 percent of the tidal marsh in San Francisco Bay has been lost since the Gold Rush, leading to dramatic losses of fish and wildlife, decreased water quality and increased turbidity in the Bay, and changes to physical processes as the size of the Estuary shrank, increasing the need for dredging and the local hazards of flooding. The need for restoration of tidal marsh in San Francisco Bay in order to aid in the recovery of at-risk species, and improve water quality and the physical health of the Bay, is well recognized among scientists and resource managers. Without the addition of NOAA funding, these important objectives, which underlie the South Bay Salt Pond implementation projects.

6. **Greater-than-local interest:** Restoration of this area is of national significance and will result in the largest tidal wetland restoration project on the west coast of the United States. When combined with other restoration projects underway in San Francisco Bay, including Napa-Sonoma Marsh, Hamilton/Bel Marin Keys, Bair Island, Eden Landing, and Sonoma Baylands, the project is on scale with other national restoration efforts, such as the Everglades and Chesapeake Bay. Restoration of the South Bay Salt Ponds to a mix of tidal marsh and managed ponds will provide benefits to a large number of species, including migratory waterfowl and shorebirds, and aid in the recovery of several threatened or endangered species, including the California clapper rail and salt marsh harvest mouse.

Additional Criteria

7. **Urgency:** There is a strong desire among the foundations, agencies, and by Senator Feinstein for restoration planning to be completed and project implementation to begin within five years of the date of acquisition March 2003 and to move forward as promptly as possible. This authorization will enable the Conservancy to make this deadline

8. **Resolution of more than one issue:** The restoration of the South Bay Salt Ponds will provide for habitat restoration for fish and wildlife, improved water quality and flood control, and enhanced recreational opportunities.

9. **Leverage:** See the "Project Financing" section above.

10. **Innovation:** Restoration of the South Bay Salt Ponds will be a national model for how to coordinate a scientifically sound, publicly-supported, multi-objective, multi-agency project, on scale with the Everglades and Chesapeake Bay. The Conservancy is drawing upon its experience with Napa Marsh, Hamilton/Bel Marin Keys, and other restoration projects in San Francisco Bay and along the California Coast, as well as learning from other efforts around the nation.

11. **Realization of prior Conservancy goals:** This project builds on the Conservancy's participation in the development of the *San Francisco Ecosystem Baylands Habitat Goals Report*, which has goals, objectives, and recommendations for restoration in

San Francisco Bay, and the Conservancy's participation in wetland acquisition and restoration projects in San Francisco Bay, including Napa Marsh, Bair Island, and Hamilton/Bel Marin Keys. This authorization builds upon previous authorizations by the Conservancy on August 2002, January and October 2003, and March and December 2004, September 2005, and November 2006 to disburse a total of up to $12,700,000 of Conservancy and WCB funds towards the South Bay Salt Pond Restoration Project planning as well as the April 2008 and November 6, 2008 approval of a total of $5,018,250 for implementation.

12. **Cooperation:** The Conservancy is facilitating the long-term restoration planning, working closely with DFG and FWS. The Conservancy, WCB, and private foundations are cooperatively funding the restoration planning. In addition, over 50 entities have been identified as stakeholders in this restoration project, including local, state, and federal agencies, nongovernmental organizations, special districts, utilities, and the general public.

CONSISTENCY WITH SAN FRANCISCO BAY PLAN:

The South Bay Salt Ponds are within the permit jurisdiction of the San Francisco Bay Conservation and Development Commission ("BCDC").

The project is consistent with the following policies of BCDC's San Francisco Bay Plan:

Part III: The Bay as a Resource

Water Quality

- To the greatest extent feasible, the Bay marshes, mudflats, and water surface area and volume should be maintained and, whenever possible, increased.

Water Surface Area and Volume

- Water circulation in the Bay should be maintained, and improved as much as possible.

Marshes and Mudflats

- To offset possible additional losses of marshes due to necessary filling and to augment the present marshes: (a) former marshes should be restored when possible through removal of existing dikes; (b) in areas selected on the basis of competent ecological study, some new marshes should be created through carefully placed lifts of dredged spoils; and (c) the quality of existing marshes should be improved by appropriate measures whenever possible.

Part IV: Development of the Bay and Shoreline

Public Access

- In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline, whether it be for housing, industry, port, airport, public

facility, wildlife area, or other use, except in cases where public access would be clearly inconsistent with the project because of public safety considerations or significant use conflicts, including unavoidable, significant adverse effects on Bay natural resources. In these cases, in lieu access at another location preferably near the project should be provided.

- Public access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife is sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided.

Salt Ponds and Other Managed Wetlands Around the Bay

- As long as is economically feasible, the salt ponds should be maintained in salt production and the wetlands should be maintained in their present use. Property tax policy should assure that rising property taxes do not force conversion of the ponds and other wetlands to urban development. In addition, the integrity of the salt production system should be respected (i.e., public agencies should not take for other projects any pond or portion of a pond that is a vital part of the production system).
- If, despite these provisions, the owner of the salt ponds or the owner of any managed wetland desires to withdraw any of the ponds or marshes from their present uses, the public should make every effort to buy these lands, breach the existing dikes, and reopen these areas to the Bay. This type of purchase should have a high priority for any public funds available, because opening ponds and managed wetlands to the Bay represents man's last substantial opportunity to enlarge the Bay rather than shrink it. (In some cases, if salt ponds are opened to the Bay, new dikes will have to be built on the landward side of the ponds to provide the flood protection now being provided by the salt pond dikes.)

COMPLIANCE WITH CEQA:

In order to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), FWS and DFG, in consultation with the Conservancy, the Santa Clara Valley Water District, and the Alameda County Flood Control and Water Conservation District, prepared a joint Environmental Impact Statement/Environmental Impact Report (EIS/R) for Phase I of the South Bay Salt Pond Restoration Project to evaluate the potential environmental impacts of the proposed project. The EIS/R (Exhibit 4) was certified by the DFG on March 11, 2008 pursuant to CEQA. The Record of Decision was adopted by FWS on January 27, 2009 pursuant to NEPA.

A general discussion of this environmental document was included in the November 6, 2008 staff recommendation for this project (Exhibit 2). This staff recommendation addresses only those significant and potentially significant project impacts and cumulative impacts for the projects proposed for funding in this staff recommendation: Pond A6, Pond A8, and Ponds E8A/9/8X.

Adaptive Management's role in preventing significant impacts

The Project Description and CEQA sections of the attached November 6, 2008 staff recommendation (Exhibit 2) discuss how incorporating the Adaptive Management process into the design of the project enables the project to avoid what could be potentially significant impacts. Below is a description of the applied studies identified in the EIS/R are part of the strategy to prevent and manage potential impacts as associated with the tidal restoration projects of Phase I. Other applied studies are discussed in the Adaptive Management Plan and the EIS/R but the purpose of those studies is to advance the science of wetland restoration and help better design future phases, not prevent known potential impacts.

Pond A6 currently is home to a large colony of California gulls. A possible negative impact of bringing back the tides to Pond A6 is that the gulls could seek alternative sites, including those nesting islands created by the SBSP project to benefit shorebirds. Studies are currently underway to document the current impacts of the gulls on other nesting species, investigate the increase in gull populations, and understand the likely gull response to the loss of Pond A6 nesting sites. This information will enable managers to respond in order to reduce the potential impacts from displaced gulls. (Applied Study No. 15 in the Adaptive Management Plan, pp. 87-90 of Appendix D of the EIS/R, Exhibit 4)

The Pond A8 project is being designed to test wildlife response to increased exposure to mercury, an impact identified as potentially significant. Significant scientific uncertainty remains about the uptake of mercury into food webs and the resulting effect on wildlife. The EIS/R identifies sentinel species that will be monitored and has identified monitoring results ("triggers") that would indicate methylation of mercury has increased in response to project activities. The first phase of the mercury studies were funded by the Conservancy and the Santa Clara Valley Water District in 2006 and are currently underway. If these studies and project monitoring show that the project is unsuccessful keeping mercury at a less-than-significant level, project managers will need to consider the appropriate course of action which could include closing Pond A8 to tidal circulation. The structures at Pond A8 have been designed to be reversible in order to keep the ability to respond appropriately and prevent unwanted impacts to the environment. (Applied Study Nos. 11 and 12 in Adaptive Management Plan, pp. 81-87 of Appendix D of the EIS/R, Exhibit 4)

Another applies study would be required at Pond A8 if the project managers desired to change the operation of the notch and keep the tidal connection open all year (in order to improve channel scour). In this case, an applied study would examine the potential for fish entrainment in the pond. By tracking radio-tagged fish in the slough, it can be determined if fish enter the pond and whether they are able to move through in and out of the notch. Depending on the results of this study, the management of the notch would be modified or fish screens installed in order to keep the notch were opened year round. (Applied Study No. in Adaptive Management Plan, pp. 75-80 of Appendix D of the EIS/R, Exhibit 4.)

Significant Effects Reduced To Less Than Significant Levels By Mitigation

Creation of tidal habitats at Ponds A6, A8, and E8A/9/8X is expected to have many beneficial impacts by creating habitat for the endangered salt marsh harvest mouse and California clapper rail, as well as provide nursery areas for estuarine and anadromous fishes, including the threatened steelhead trout. In addition, these tidal restoration projects will improve conditions for harbor seals, bay shrimp, estuarine fish and dabbling ducks, and special-status plant species that depend on mature marsh features and upland transition zones. Furthermore, the project will increase tidal circulation which will improve small watercraft navigation and decrease fluvial flooding as sloughs enlarge. The proposed projects also could have numerous significant impacts. However, these potential impacts are reduced to a less-than-significant level with the mitigation measures described below and summarized in the Mitigation Monitoring and Reporting Program (MMRP), attached as Exhibit 4. The potentially significant impacts and the associated mitigation measures that are applicable to the tidal restoration projects proposed in this staff recommendation, Ponds A6, A8, and E8A/9/8X, are summarized below.

Water Quality. Two potentially significant impacts from these projects were identified in the EIS/R: 1) impacts to water quality from contaminants other than mercury (Impact 3.4-5 in Table A1) and 2) seawater intrusion of regional groundwater sources (Impact 3.4-6 in Table A1). The potential contamination impacts are reduced to a less-than-significant level by the construction contractors' adherence to Best Management Practices, a Stormwater Pollution Prevention Plan, and RWQCB Waste Discharge Requirements (Mitigation Measures 3.4-5 a,b,c,d,e,f in the MMRP). In addition, the landowner actions to minimize illegal dumping and litter and inform the public if there are any threats to public health due to bacterial growth will serve to also reduce or avoid these potential impacts. In regards to seawater intrusion, the potential impacts are reduced to a less-than-significant level by properly destroying any abandoned wells in consultation with the local groundwater management agency. (Mitigation Measure 3.4-6 in the MMRP.)

Cultural Resources. Two potentially significant impacts to cultural resources were identified in the EIS/R: 1) disturbance of known or unknown cultural resources (Impact 3.8-1 in Table A1), and 2) disturbance of historic salt ponds which may be considered a significant cultural landscape (Impact 3.8 -2). The potential impact of disturbing cultural resources is reduced to a less-than-significant level by pre-construction surveys and records search and appropriate protocols established for contractors if any resources are found (Mitigation Measures 3.8-1 in the MMRP). To reduce disturbance of historic resources to a less-than-significant level, if the site is evaluated and found to be a significant cultural landscape, then appropriate documentation and public outreach and interpretation will be incorporated into the project. (Mitigation Measure 3.8-2 in MMRP.)

Traffic. Several potentially significant impacts related to traffic are identified in the EIS/R. Short-term impacts from construction traffic would be reduced to a less-than-significant level by scheduling truck trips outside of morning and evening peak commute hours (Mitigation Measures 3.12-1 in the MMRP). Potential increased wear and tear on local roads from construction will be reduced to a less-than-significant level by before and after documentation of road conditions and a pre-construction agreement between the project landowners and the local public works entity that details repair requirements. (Mitigation Measures 3.12-4 in the MMRP)

Noise. The EIS/R identified three potentially significant impacts from construction. Short-term construction noise (Impact 3.13-1) will be reduced to a less-than-significant level by restrictions on the selection, placement and operation of construction equipment (Mitigation Measures 3.13-1 in the MMRP). Traffic-related noise impacts (Impact 3.13-2) will be reduced to a less-than-significant level by restrictions on hauling (Mitigation Measures 3.13-2 in the MMRP). Pump operation noise impacts (Impact 3.13-4) will be reduced to a less-than-significant level by enclosing pump that exceeds noise standards. (Mitigation Measures 3.13-4 in the MMRP.)

Air Quality. Several potentially significant impacts to air quality were identified in the EIS/R. Short-term construction-generated air pollutant emissions (Impact 3.14-1) would be reduced to a less-than-significant level by implementation of Basic Control Measures (Mitigation Measures 3.14-1 in the MMRP). Exposure of sensitive receptors to toxic air contaminant emissions (Impact 3.14-3) would be reduced to a less-than-significant level by restrictions on size and use of construction equipment and creation of a Health and Safety Plan. (Mitigation Measures 3.14-3a and b in MMRP).

Utilities. The one potentially significant impact to the railroad line from construction activities only applies to Pond A16, not proposed for funding in this authorization.

Since this authorization does not include any public access improvements, this staff recommendation does not discuss the potential recreation-oriented impacts to sensitive species and their habitats and their proposed mitigations as identified in the EIS/R.

Cumulative Impacts

Finally, the EIS/R also identifies cumulative impacts for all of the project alternatives (including no action) and Phase I projects that are unavoidable potentially significant impacts to the environment. All of the impacts of the Phase I projects are not considerable, and only become potentially significant when combined with impacts from sea level rise, future SBSP Restoration project phases, and numerous other wetland, flood control, recreational, residential, commercial, and industrial projects completed or planned for in South San Francisco Bay in the near term (see Section 4.2.2 in EIS/R for a discussion of other projects).

For the tidal restoration projects proposed in this staff recommendation the following cumulative impacts apply when considering future changes such as sea level rise and other projects:

Hydrology, Flood Management and Infrastructure. In the case of coastal flood risk (Cumulative Impact 3.3-1), all alternatives, including no action, are potentially significant due to impacts from sea level rise and climate change. However, Alternatives B and C include construction of a flood protection levee or other measures to reduce the impacts of coastal flooding to a less-than-significant level. Since no Phase I projects, including those proposed in this authorization, include construction of flood protection measures, if the project does not include a future phase with flood protection measures, the combination of Phase I projects, sea level rise, and other projects could be potentially significant with no feasible mitigation. In addition, the EIS/R identified sea level rise as a potentially significant impact (Cumulative Impact 3.3-2) despite the flood protection benefits provided by tidal restoration.

Surface Water, Sediment, and Groundwater Quality. The presence of mercury in the Bay's sediments creates additional potential cumulative impacts. Although the SBSP Restoration Project's combination of monitoring and implementation of the Adaptive Management Plan would reduce impacts from the proposed tidal restoration projects to less-than-significant, when combined with other projects in the area, there are the potentially significant impacts from mercury in Bay sediments (Cumulative Impacts 3.4-3 and 3.4-4). In regards to water quality from other contaminants (Cumulative Impact 3.4-5), the Phase I actions include mitigation measures for all contaminants considered so the project only becomes potentially significant when considering other proposed projects in the South Bay

Biological Resources. Shorebird habitat is being created as part of the Phase I in Ponds SF2, E12 and 13, and A16, but the conversion of salt ponds into tidal habitats could result in the loss of shorebird forging habitat. When combined with sea level rise and other projects, this could have potentially significant cumulative impact (Cumulative Impact 3.6-1). In addition, the cumulative impacts of Phase I when considered with the impacts of the 2,500 acres of other proposed projects in the South Bay and sea level rise could result in a potentially significant loss of mudflats (Cumulative Impact 3.6-2).

Cultural Resources. Phase I activities including the proposed projects involve excavation activities that have the potential to encounter cultural resources. Although the EIS/R identified mitigation measures to decrease this impact to a less-than-significant level, when combined with other proposed project there is the potential for significant cumulative impacts (Cumulative Impact 3.8-2).

Socioeconomics and Environmental Justice. Most of the cumulative impacts of Phase I are expect to benefit local business. However, when considering other projects, there could be a cumulatively significant impact to the brine shrimp harvesting business (Cumulative Impact 3.11-1).

Traffic. All project alternatives, including no action, will have cumulative short and long-term traffic impacts when considered with the potential impacts from other cumulative projects as identified in Cumulative Impacts 3.12-1, 3.12-2, 3.12.-4.

Noise. Noise impacts generated during Phase I construction will be mitigated to a less-than-significant level. However, the cumulative impacts of the Phase I projects and other cumulative project would be potentially significant (Cumulative Impact 3.13). In terms of vibrations, the impacts of Phase I actions becomes significant when considered with other cumulative projects (Cumulative Impact 3.13-5).

Air Quality. While all project alternatives including Phase I would be less-than-significant, when considered with other projects, there could be potentially significant cumulative impacts (Cumulative Impact 3.14-3).

Project Benefits

As DFG concluded in their CEQA findings, there are significant project benefits to the South Bay Salt Pond Restoration project in general as well as for Phase I projects. Conservancy staff has independently reviewed the EIS/R and its accompanying appendices, and the MMRP and concurs with this assessment. Among the numerous benefits provided by the South Bay Salt Pond Restoration Project, those that specifically apply to the projects in this authorization, full or partial tidal restoration of Pond A6, A8, and E8A/9/8X, include:

- Provide an increase in tidal marsh habitat in the project area.
- Provide levee maintenance to ensure flood protection and reduce the potential effects on people and property from liquefaction, lateral spreading, settlement and subsequent flooding.
- Provide habitat for estuarine fish and dabbling ducks by providing a greater extent and diversity of tidal habitats than would occur in marshes that develop in ponds breached unintentionally.
- Improve conditions for harbor seals by increasing fish abundance and haul-out habitat.
- Provide habitat for special-status species including the salt marsh harvest mouse, the California clapper rail, and steelhead trout.
- Provide suitable habitat for special-status plant species by creating upland transition zones and mature marsh features (e.g. shell ridges, salt panne, etc.).
- Improve bay shrimp habitat by increasing the salinities in some freshwater sloughs in the South Bay.
- Increase tidal prism resulting in improved water quality and circulation.
- Provide improvements to fluvial flooding and small watercraft navigation due to channel enlargement.

Global Climate Change

The Final EIS/R (p. 4-6) included the following discussion regarding cumulative impacts regarding global climate change:

"On August 30, 2006, the Governor of California signed Assembly Bill (AB) 32 (Health and Safety Code section 38501, subdivision (a)), legislation intended to combat global climate change. AB 32 recognizes the threat of global climate change to the economic well-being, public health, natural resources, and the environment of California and identifies potential adverse impacts of global climate change that range from air quality problems to impacts on California's industries (*e.g.*, agriculture, wine, and tourism). Although global climate change is an international issue, the intent of AB 32 is for California to exercise its authority to reduce greenhouse gas emissions and encourage other states, the federal government, and other countries to act. AB 32 gives the California Air Resources Board the authority to coordinate with stakeholders to implement this division, which includes developing emissions reduction measures with the California Public Utilities Commission.

"Currently, there are no regulatory standards issued by the state on how global climate change should be addressed and evaluated in its environmental review process. It is anticipated that CARB will develop and enforce mitigation strategies in accordance with AB 32. As these strategies are developed, the SBSP Restoration Project will be analyzed for consistency with CARB measures in subsequent project-level environmental documentation. As it currently stands, it would be speculative to make conclusions about the effects of global climate change resulting from the Project without clear quantitative baseline data about the existing pollutants that contribute to global climate change and established thresholds against which to analyze such changes. However, it is likely that the Project would sequester extensive carbon due to the increase in marsh vegetation associated with restoration activities. Tidal marshes of the bay are incredibly productive habitats. Atwater and others (1979) summarized existing studies and note that "the vascular plants of the estuaries tidal marshes average between 500 and 1500 g/m2/year. Selecting 800 g/m^2/year as a typical value, and multiplying by the present area of tidal marsh yields an estimated aboveground primary productivity of 10^{11} g/yr." They further note that carbon constitutes about 40% of the dry organic matter of this productivity. Using this same average productivity, and the potential ~13,000 acres (~5200 ha) of tidal restoration would yield about 5.2×10^7 g/yr of above ground productivity, or 2.1×10^7 g of carbon sequestered per year. The effects of climate change and sea level rise on the Project over the 50-year planning period were taken into account by including these factors in the modeling efforts conducted for the design of the restoration activities. The proposed improvements, including new levees that provide flood protection, would be sized to account for the change in sea level that is expected to occur over the 50-year planning period."

To establish additional context in which to consider the order of magnitude of project-generated construction Greenhouse Gas (GHG) emissions, it may be noted that the California Air Resources Board has proposed a threshold of 7,000 metric tons of CO2/year, below which the effects of a project would be deemed "not significant", for industrial projects that result in stationary, continuous sources of GHG emissions. Likewise, the South Coast Air Quality Management District has adopted a threshold of 10,000 tons of CO2 per year for similar industrial projects. Further, the South Coast Air

Quality Management District has proposed for consideration, but not adopted, a threshold of 3,000 metric tons per year for residential and commercial projects. It should be noted that each of these thresholds are based on the annual emission each year of the project's useful life.

As shown in Appendix N to the SBSP EIS/R, estimated GHG emissions associated with construction of the all Phase 1 projects (five public access and six habitat construction projects at five sites, including the three under this proposed authorization) would be approximately 4,200 metric tons of CO2 per year during the construction phase which is limited to three years. Construction-related emissions would be temporary and finite in nature.

When considering impacts of the project's GHG, it is important to also consider the carbon sequestration that will result from the proposed tidal restoration projects. Using updated estimates of carbon sequestration potential from "Carbon Sequestration in Tidal Wetlands – White Paper" (Crooks, 2009), Conservancy staff estimate that the 960 acres of tidal marsh restoration in Phase 1 (not counting the muted tidal system of Pond A8) will result in a potential sequestration of CO_2 ranging from 710 to 3,552 metric tons per year. In the short term, the construction effects (a total of approximately 12,600 metric tons) will be completely offset after less than18 years using the more conservative sequestration figure and in less than approximately 4 years using the higher figure.

Also of note is that the project will have few indirect sources of CO_2 emissions during the post-construction life of the project. Over the fifty year planning period used in the EIS/R, the tidal restoration projects are likely to sequester far more than the CO_2 produced during Phase I project construction, operations and maintenance. Of course the actual amount of carbon sequestered will depend on a variety of factors including sea level rise.

In short, based on current information and the nature of the projects, the three projects proposed for funding under this staff recommendation have little potential to create direct or cumulatively considerable environmental effects related to greenhouse gas emissions or climate change.

Statement Of Overriding Considerations

In the event a project has unavoidable significant potential effect, the CEQA Guidelines require the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project (14 Cal. Code of Regulations, Section 15093). If the specific project benefits outweigh the unavoidable adverse environmental effects of the project, a Statement of Overriding Consideration may be adopted and the project approved, despite its adverse environmental effects. DFG adopted a Statement of Overriding Consideration as part of its Finding of Facts on March 11, 2008.

The overall environmental benefits of the proposed projects as detailed in the EIS/R, warrant the Conservancy's decision to approve the project even though not all of the

environmental effects of the project are fully mitigated. As discussed above, the unavoidable cumulative significant impacts are only when considering the tidal restoration of A6, A8, and E8A/9/8X in combination with all Phase I projects and with all other near term projects in the South San Francisco Bay and other changes such as sea level rise. In the absence of the proposed project, these impacts could still happen but without the habitat and other benefits (described in detail above) generated by the proposed tidal restoration projects.

For these reasons, the Conservancy staff recommends that Conservancy find that the project, as mitigated, avoids or reduces to less than significant all potentially significant environmental effects, except for cumulative effects related to Surface Water, Sediment, and Groundwater Quality, Biological Resources, Cultural Resources, Socioeconomics and Environmental Justice, Traffic, Noise, and Air Quality. With respect to these potential unavoidable effects, Conservancy staff likewise recommends that the Conservancy find that the specific environmental, resource, and flood protection benefits of the South Bay Salt Restoration Project Phase I projects proposed in this authorization, tidal restoration of Ponds A6, A8, and E8A/9/8X, outweigh the unmitigated or unavoidable environmental effects of the project, thereby warranting its approval. Upon Conservancy approval of the proposed projects, Conservancy staff will prepare and file a Notice of Determination.