San Francisco Bay Conservation and Development Commission
455 Golden Gate Avenue, Suite 10600, San Francisco, California 94102 tel 415 352 3600 fax 415 352 3606

January 5, 2018

Application Summary
(For Commission consideration on January 18, 2018)

Number: Consistency Determination No. C2015.006.01
Date Submitted: August 31, 2017
60th Day: January 20, 2018
75th Day (as extended by the U.S. Army Corps of Engineers): January 29, 2018
Staff Assigned: Brenda Goeden (415/352-3623; brenda.goeden@bcdc.ca.gov)

Summary

Applicants: U.S. Army Corps of Engineers (USACE) and U.S. Fish and Wildlife Service (USFWS). The USACE is the federal project sponsor under its Continuing Authorities Program (CAP) program, and the USFWS owns much of the former salt pond property proposed for restoration.

Partners: The State Coastal Conservancy (Conservancy), and the Santa Clara Valley Water District (SCVWD). Working under a Design Project Cooperative Agreement, the the Conservancy and the SCVWD are local project sponsors responsible for 35% of the total Flood Risk Reduction Project (the levee) and 100% of locally preferred project components ("betterments," such as construction of the transitional ecotone habitat) and obtaining the lands, easements, and right-aways for the project.

Location: The total proposed project for the South Bay Shoreline Project is located at the southern end of San Francisco Bay and spans several thousand acres of former salt ponds owned primarily by the USFWS and the City of San Jose, and includes areas Town of Alviso and the City of San Jose's Pollution Prevention Facility shortelines. The Reach 1 levee and ecotone (the subject of this amendment request) would span from the Alviso Marina County Park to the Union Pacific Railroad along the former A12 and A13 salt ponds, in Santa Clara County (Exhibits A and B).

Project: The USACE and the USFWS are requesting an amendment to BCDC's Phased Consistency Determination No. C2015.006.00, for construction of Reach 1 of the levee and transitional ecotone habitat in Phase 1 of the South Bay Shoreline Project (Shoreline Project), in accordance with the 1972 federal Coastal Zone Management Act (CZMA), as amended.

The Shoreline Project is a multi-benefit, levee project that includes the construction of a 3.8 mile, 15.7-foot high flood risk reduction levee and the restoration of eight former salt ponds to tidal marsh (Exhibit B). The project includes tide gates, railroad and waterway crossings, and public access in the form of trails and viewing areas atop and along newly constructed levees, improved salt pond levees, and offsite regional trails.

The project's primary purpose is to:

- Reduce the risk to public health, human safety, and the environment due to tidal flooding along the South Bay shoreline in Santa Clara County.
- Reduce potential economic damages due to tidal flooding in areas near the South Bay shoreline in Santa Clara County.
- Increase contiguous tidal marsh to restore ecological function and habitat quantity, quality, and connectivity in the study area. The project would increase habitat for native, resident plant and animal species, including special-status species such as the Central California Coast steelhead, Ridgway's rail, and salt marsh harvest mouse.

- Provide opportunities for public access, environmental education, and recreation.

The proposed project flood protection levee would be located between four former salt ponds and the Town of Alviso and portions of the City of San Jose, and would run between Alviso Slough and Coyote Creek in the South Bay. The Environmental Impact Statement and Environmental Impact Report (EIS/EIR), identified the locally preferred alternative, which includes a wider, shallower, bayward sloping levee that would provide transitional habitat (ecotone) along the edge of three of the ponds proposed for tidal marsh restoration (Exhibit B).

As described, the flood protection levee would be constructed first, and is expected to take about three years. As each reach of levee is completed, transitional ecotone habitat would be constructed on the bay side of all new levee segments except for the levee segment bordering Pond A16, a managed pond (Exhibits B, D, E, and F). The ecotone is not necessary in Pond A16 because it will be maintained as a managed pond with constant water levels with roosting and loafing habitat islands for waterfowl and other migratory birds.

The applicants state that the levee project would protect approximately 6,000 Alviso residents and employees, and over 1,000 structures from tidal flooding and 100-year floods (a flood with a one percent annual chance of exceedance) with projected sea level rise through 2067; allows for the restoration of 2,900 acres of tidal marsh and related habitats; and provides educational, recreation and public access opportunities. Structures being protected would include roads, highways, parks, an airport, and a wastewater treatment plant.

Amendment No. 1 to BCDC Letter of Agreement C2015.006.00, includes construction of Reach 1 levee (0.81 miles of flood risk reduction levee) to a height of 15.7 feet NAVD 88, with an inland slope of 3:1 (horizontal to vertical) and a bayward slope of approximately 30:1, creating transitional ecotone habitat; dewatering of Ponds A12 and A18; construction of small soil containment berms or use of sheet piles; stockpiling of soils and sediment in a

30.05 acre portion of Ponds A12 and A13 (ecotone footprint), and a 6.51 acre portion of Pond A18 (ecotone footprint); and construction staging areas located adjacent to the project site.

This amendment would authorize the construction of the Reach 1 levee and ecotone only. Additional project features and restoration of the eight former salt ponds would be authorized through future amendments.

Issues Raised: *The staff believes that the consistency determination for Reach 1 raises four primary issues: (1) whether the project is consistent to the maximum extent practicable with the Coastal Zone Management Program for the Bay, including the McAteer-Petris Act and Bay Plan policies regarding fill in salt ponds, and to a lesser extent, fill in the Bay; (2) whether the project is consistent with the Bay Plan policies regarding Shoreline Protection and Safety of Fills; (3) whether the project is consistent with the Bay Plan policies regarding Climate Change; and (4) whether the project is consistent with the Bay Plan policies regarding natural resource, including Fish, Other Aquatic Organisms and Wildlife; and Tidal Marshes and Tidal Flats.*

Background

Historically, the project site was once part of the open water and tidal marshes of South San Francisco Bay. In the late 19th century, much of South Bay's marshlands were diked (surrounded by levees) and converted to salt ponds and managed for salt production by Leslie Salt, and then Cargill. Most of these former salt ponds are now part of the USFWS Don Edwards San Francisco Bay Wildlife Refuge, established in 1972. The first salt ponds were acquired by USFWS in 1979. An additional 15,000 acres were acquired under the leadership of Senator Diane Feinstein in 2003, with the intent of restoring them to tidal marsh and managed for wildlife and recreation purposes. Approximately 9,000 acres from this acquisition were added to the USFWS's Refuge and the remaining ponds were added to the California Department of Fish and Wildlife's Eden Landing Ecological Reserve. The South Bay Shoreline Study was first authorized by Congress in 1976 and received study authorizations and appropriations in 2002 and 2007 as part of the USACE's Flood Risk Reduction Program and Continuing Authorities Program.

In December 2015, the Commission issued the initial phased consistency determination (C2015.006.00), approving the Shoreline Project in concept only to support the USACE's request for Congressional authorization and continued funding for the design phase of the project. The issuance of a phased consistency determination is unusual in that, consistency determinations

are typically submitted later in the process, during the Preconstruction Engineering and Design (PED) phase of project development with approximately 35% design of the project available for review.

The initial consistency determination was submitted at the feasibility study level due to a request from the USACE Headquarters to provide political support for the project and funding. The initial application and plans did not include enough detail to complete a full analysis of the project, and therefore, the Commission agreed to a phased approach for this project, as allowed for in the CZMA, 15 Code of Federal Regulations (CFR) Section 930.36(d).

When the Commission reviewed the conceptual plan for the Shoreline Project, it found the plan to be *generally* consistent with the Commission's law and policies. However, per federal regulations, the USACE is required to return to the Commission for subsequent amendments to the consistency determinations for each major decision point for the project.

Following the Commission's approval of the Phased Consistency Determination in December 2015, a "Chief's Report" was signed by the Assistant Secretary of the Army, promoting the project from study to design phase. Amendment No. One would provide federal consistency for the first phase of the project, which includes four actions: (1) Reach 1 levee construction; (2) Reach 2 and 3 levee construction; (3) Reach 4 and 5 levee construction; and (4) restoring and breaching Ponds A12 and A18 (Exhibit B)

The application summarized herein constitutes the first decision point requiring Commission review. Currently, Commission staff anticipates three or four future amendments to this consistency determination, based on the ability of the USACE the USFWS and their partners to complete the design for large sections of the project. The USACE and USFWS anticipate that the project will be conducted in three phases, with each phase comprised of multiple actions.

South Bay Shoreline Project Overview

Phase	Construction	Year
I	Levee Reach 1	2018
	Levee Reach 2 & 3	2019
	Levee Reach 4 & 5	2020 – 2021
	Breach Ponds A12 & A18	2022
II	Breach Ponds A9, A10 & A11	2027
III	Breach Ponds A13, A14 & A15	2032

During 2016 and 2017, the USACE and partners entered the design phase of the project, and now are at 90 percent design for the first reach of the flood risk management levee (Reach 1 of Phase 1). The remainder of the project is still under design development with refinements of levee alignments, transitional habitat, creek and slough crossings, flood gates, and other project

components yet to be designed. The requested amendment includes constructing the Reach 1 levee and adjacent transitional ecotone habitat; stockpiling sediment and soils in Ponds A12, A13 and A18; creating and using staging areas; and construction of the public access trail atop the Reach 1 levee (Exhibit B).

In 2017, the USACE requested appropriation of funds to support construction of the Reach 1 levee and ecotone, aligned along the existing salt pond berms extending from the Alviso Marina to the Union Pacific Railroad. If the USACE is successful in receiving funds from Congress in February 2018, construction would begin in May 2018.

Project Description

The Shoreline Project, including the construction of the new levee, falls under the CZMA category of "federal agency activity," namely a "federal development project." Further, the proposed restoration of the former salt ponds the project also falls within the “activities conducted on federal lands” category of the CZMA. Such a project is subject to consistency review under CZMA sec. 307(c)(2) as opposed to 307(c)(1), which requires consistency to the maximum extent practicable rather than full consistency with the State’s approved Coastal Zone Management Program. If such a project is located within the Coastal Zone, as the Shoreline Project is, effects on the Coastal Zone are presumed and must be analyzed. While portions of the project can be described as being located adjacent to or within different portions of the Commission’s McAteer Petris Act jurisdiction (Bay, shoreline band, and salt ponds), the entire project is subject to the CZMA and the full project impacts should be considered.

Amendment No. One to the Letter of Agreement (BCDC C2015.006.00) includes construction of Reach 1 of Phase 1 of the Shoreline Project. The following project description and analysis relates specifically to Reach 1, with overarching project details provided when necessary for clarity.

Jurisdiction: The proposed Phase 1, Reach 1 work would take place within the Commission’s salt pond jurisdiction, Bay jurisdiction, the 100-foot shoreline band, and adjacent areas within the Coastal Zone.

Work Within the Coastal Zone: Because the existing berms around the former salt ponds do not meet flood protection levee standards, the overall Shoreline Project would excavate the existing berms and construct 3.8 miles of 15.7-foot-high flood protection levee along the proposed alignment, placing approximately 897,000 cubic yards (cy) of fill material and compacting it to meet levee engineering standards. Reach 1 of the levee would be approximately 4,250 feet long (0.81 miles), tie into the existing northern and eastern levees surrounding Alviso Marina County Park, and would extend northward and terminate at the Union Pacific Railroad crossing.

The levee would be approximately 110 feet wide at the base and 16 feet wide at the top. The alignment of Reach 1 levee and ecotone would generally follow the existing inland berm alignment to take advantage of compacted soils beneath the existing berms, with the exception of an approximately 475-foot section that

would cross a portion of Pond A12 over softer Bay sediment. An approximately 0.22-acre portion of tidal marsh would be permanently impacted by the levee. The construction requires excavation of existing berms and soils to create the levee core trench. In order to establish proper construction conditions, this area may require dewatering. The material that is excavated will either be placed in the adjacent stockpile areas for future use in the ecotone development or, if physically suitable, be reused along with new construction fill to create the new levee. Because the soil below the levee alignment is former Bay muds, compaction and settling of the levee is expected. After settlement, the height of the flood protection levee would be 15.2 feet NAVD 88, approximately 10 feet higher than some areas of the existing berms (existing heights vary) and the base would be 110 feet wide, approximately twice as wide as the existing salt pond berms.

The proposed ecotone is an important project element. Ecotone is a transition area between two distinct habitats, in this case, between wetlands and uplands. Shoreline development has destroyed or severely impaired the vast majority of the Bay's wetland-upland transition habitat. Transition habitat serves as high tide refuge for species that live in tidal marshes (such as the endangered Ridgway's rail and salt marsh harvest mouse) to move out of the marsh at high tide while remaining under vegetative cover with relative safety from predators. They are also areas that allow for the landward migration of marshes as sea levels rise and provide protection from extreme tides and waves. However, this benefit is limited due to historical subsidence behind the proposed levee.

The transitional ecotone habitat design and size is somewhat undefined because of uncertainty in the availability of free or low cost soil that will be available during construction. However, as proposed, the maximum slope is 30:1 (width to height), with a somewhat undulating edge that is wider in some areas and narrower in others, providing some habitat diversity. The landward edge of the ecotone would be gradually graded to meet the levee crest, at a final height of 15.2 feet NAVD88 and the bayward edge would be graded to meet existing grade in the pond.

To build the levee for Reach 1, approximately 154,397 cy of earthen fill would be placed on approximately 11.14 acres within the coastal zone in or adjacent to Ponds A12 and A13. To build the transitional ecotone habitat for Reach 1, approximately 843,824 cy of earthen fill would be placed on approximately 44.02 acres within the coastal zone in or adjacent to Ponds A12, A13 and A18. Ponds A12 and A18 would be breached and have full tidal exchange at the completion of Phase 1 (2022), restoring 1,120 acres to tidal action. The Reach 1 filled acreage, (54.71 acres) is approximately 0.05 percent of the acreage of the first two restored ponds returned to tidal action. Small portions of the Reach 1 levee and ecotone would involve work in the Bay, primarily in tidal marsh habitat in the Alviso Marina County Park (see Table 1 and Exhibit E).

Once construction of the levee is completed, the first two ponds, A12 and A18 would be breached (2022) and would be exposed to tidal action. Because the ponds are subsided, the lower end of the ecotone would immediately become intertidal. In future phases of the project, the salt pond berms would be breached and lowered to promote tidal circulation to the restored ponds, and to create vegetated marsh habitat in the short term as the subsided pond bottoms evolve from mudflat to vegetated marsh. Thus, the ponds would be open water or intertidal mudflats initially after breaching, and gradually vegetate as sediment builds in the ponds. Due to the subsided nature of the site, several feet of sediment would need to be deposited through natural processes before the pond bottoms reach elevations suitable for marsh growth. Pond A12 is the most deeply subsided of the proposed salt ponds, and therefore is being breached first to allow maximum time for sediment accumulation.

Once the Reach 1 levee and transitional ecotone habitat is constructed, the project sponsors would request further amendments to this consistency determination to construct levee portions in Reaches 2 through 5, construct ecotone in Reaches 4 and 5, and breach Ponds A12 and A18. No ecotone would be constructed adjacent to Reaches 2 and 3 in Pond A16 because it is a fully restored managed pond. If restoration is successful, the Commission would receive two additional restoration requests, at five and ten years after the initial breaching to incrementally restore the remaining six ponds (Exhibit B).

Fill The construction of the Phase 1 Reach 1 levee and ecotone would result in a net total of 12,010 cy of solid fill in the coastal zone, including Bay, salt pond, shoreline band and other coastal zone management areas.

Table 1- South Bay Shoreline Project, Phase 1 Reach 1 Levee and Ecotone Construction

	Bay Jurisdiction	Shoreline Band Jurisdiction	Salt Pond Jurisdiction	Other CZMA Jurisdiction	Total Net Fill Area
Description	**Solid Fill**				
Reach 1 Levee	0.22 acres 3,049 cy	0.74 acres 10,256 cy	7.76 acres 107,552 cy	2.42 acres 33,540 cy	11.14 acres 154,397 cy
Reach 1, Ponds A12 and A13 Ecotone	0	0.74 acres 14,310 cy	29.24 acres 565,447 cy	0.07 acres 1,360 cy	30.05 acres 581,117 cy
Pond A18 Stockpile Area	0	0.48 acres* 9,329 cy*	6.53 acres 126,903 cy	6.51 acres 126,475 cy	13.52 acres 262,707 cy
Total Acre Total Fill	**0.22 acres 3,049 cy**	**1.96 acres 33,895 cy**	**43.53 acres 799,902 cy**	**9 acres 161,375 cy**	**54.71 acres 998,221 cy**

* This area and volume includes some salt pond shoreline band jurisdiction overlap

Public Access: Approximately 3.8 miles of public access would be provided on top of the new flood protection levee. The planned additional public access components, including two pedestrian bridges, levee top trails (part of the Bay Trail), spur trails and off site multi-use trails along the north side of State Route 237 would be constructed as part of later phases of the project (Exhibit H). The levee top Bay Trail segment would be either gravel or decomposed granite and would be ADA-accessible.

As noted in the initial consistency determination, some of the existing trails would be eliminated when outer salt pond berms are breached and lowered in order to return the former salt ponds to full tidal action once the flood protection levee have been completed. The project sponsors estimate that approximately 7.4 miles of existing trails would be lost with full implementation of the project. The public access on the new flood control levee would add approximately 3.6 miles of new access, and the offsite multi-use trail would add 1.6 miles, though well outside the Commission's jurisdiction. While it is expected that the existing levee trails would remain open to public access until the salt pond berms are breached (except where access may be restricted to allow construction), at project completion there would be 3.8 miles less public access to the Bay than currently exist (this number excludes the bike trail along State Route 237).

Construction of the Reach 1 levee would include construction of approximately 0.81 miles of the levee top trail. The trail would be open to the public once construction is complete.

Schedule and Cost: Reach 1 levee and ecotone construction is proposed to commence in May 2018, with completion in 2019. The estimated project cost for this reach is $33,843,000.

Staff Analysis

A. **Issues Raised:** *The staff believes that the consistency determination for Reach 1 raises four primary issues: (1) whether the project is consistent to the maximum extent practicable with the Coastal Zone Management Program for the Bay, including the McAteer-Petris Act and Bay Plan policies regarding fill in salt ponds, and to a lesser extent, fill in the Bay; (2) whether the project is consistent with the Bay Plan's policies regarding Shoreline Protection and Safety of Fills; (3) whether the project is consistent with the Bay Plan policies regarding Climate Change; and (4) whether the project is consistent with the Bay Plan policies regarding natural resource, including Fish, Other Aquatic Organisms and Wildlife; and Tidal Marshes and Tidal Flats.*

1. **Fill.** Most of the fill proposed for the Reach 1 levee and ecotone would involve fill in salt ponds, with a more limited fill volume occurring in the Commission's Bay and shoreline band jurisdictions.

   According to Section 66605 of the McAteer-Petris Act, the Commission may allow fill in the Bay and certain waterways only when the fill meets specific requirements: (a) the public benefits from fill must clearly exceed the public detriment from the loss of water areas, and fill should be limited to water-oriented uses or minor fill for improving shoreline appearance and public access; and (b) no alternative upland location is available. The Commission may allow fill in the Bay, certain waterway, *and salt ponds* when: (a) the water area authorized to be filled should be the minimum necessary to achieve the purpose of the fill; (b) the fill should minimize harmful effects to the Bay including the water volume, circulation, fish and wildlife resources, and marsh fertility; and (c) the fill should be authorized when the applicant has valid title to the properties in question.

The Bay Plan's policies for salt ponds state that, "if the owner of any salt ponds withdraws any of the ponds from their present uses, the public should make every effort to buy these lands and restore, enhance or convert these areas to subtidal or wetland habitat." It further states that "…opening ponds to the Bay represents a substantial opportunity to enlarge the Bay and restoring, enhancing or converting ponds can benefit fish, other aquatic organisms and wildlife, and can increase public access to the Bay…."

Construction of Reach 1 levee and ecotone would result in the placement of clean soil or sediment in a portion of Ponds A12 and A13 to construct approximately 11.14 acres of flood protection levee and 30.05 acres of ecotone. Reach 1 is 0.81 miles of the 3.8 miles of flood protection levee that is necessary to allow restoration of eight former salt ponds (approximately 2,900 acres) to Bay and tidal marsh habitat. Once the salt ponds are returned to tidal action, they are expected to rapidly accumulate sediment and become passively vegetated marsh through natural processes over several years. The remainder of the proposed fill located within the footprint of the future Pond A18 ecotone will be used for levee and ecotone construction as the project proceeds.

As stated in the law and policies cited above, the Commission can authorize fill in the Bay for protecting shorelines, to create or enhance habitat, and to provide public access. Policies guiding fill in salt ponds is governed by maximizing open water, improving circulation and minimizing harmful effects as salt ponds are restored to tidal marsh or subtidal areas. The proposed fill in the Shoreline Project includes shoreline protection, enhancing and restoring habitat, and providing public access. The Commission's policies require that all proposed fills in water-covered areas of the Commission's jurisdiction be the minimum necessary, and be designed to minimize adverse impacts on the Bay's natural resources.

While the size and scope of the fill proposed for shoreline protection, habitat enhancement, and public access is much larger than previous projects authorized by the Commission, the Commission has authorized fill in the Bay and in salt ponds for such water-oriented uses before. Most recently, the Commission concurred with the USFWS that placing dredged material on approximately 15 acres (653,400 square feet) of tidal marsh to create habitat features designed to enhance the productivity, functioning and habitat value of the surrounding marshlands was consistent with Commission law and policies (C2014.004). The Commission also concurred with USFWS's determination that placing dredged materials on approximately 4.0 acres to raise pond bottoms and create marsh mounds at lower Tubbs Island (San Pablo Bay Wildlife Refuge) was consistent with the Commission's law and policies (C1993.011.01). In BCDC Permit No. M2012.016 and M2014.025.01 to the California Coastal Conservancy, the Commission authorized the placement of a total of 5,000 square feet of fill in tidal marshes to create high tide refugia for the endangered Ridgway's Rail at Belmont Slough in the City of Belmont, Cooley Landing in the City of Menlo Park, and Martin Luther King Jr. Marsh, in the City of Oakland. Creating ecotone habitat has also been an important design feature in large marsh restoration projects in diked baylands (Consistency Determination No. C2004.005 to the U.S. Army USACE of Engineers to construct Hamilton Restoration Project in Marin County, and Consistency Determination No. C2005.007 to USFWS for restoring Cullinan

Ranch just north of State Route 37 in Napa County). As with the South San Francisco Bay Shoreline Phase 1 Feasibility Study and Conceptual Plan, these project elements were constructed to provide transitional habitat and high tide refugia for Bay marsh species, and to create opportunities for marsh transgression with sea level rise (the inland retreat of tidal marsh to adjoining upland areas with sea level rise).

a. **Priority Use Designation.** The entire project area is designated on Bay Plan Map No. 7 as a wildlife refuge. While the ponds currently provide habitat for many species, the habitat value of the project site is expected to be greatly enhanced by returning tidal action to these ponds and as the ponds evolve from subtidal habitat, to intertidal mudflat, to vegetated tidal marsh. The ecotone constructed along the Bay edge of the flood protection levee is designed to provide high refuge for wildlife, as well as a place for marshes to transgress upland with sea level rise. The proposed restoration could not occur without construction of the flood protection levee to protect inland areas from tidal flooding.

b. **Alternative Upland Location.** The Shoreline Study analyzed several project alternatives, including a nonstructural alternative that did not include constructing a flood control structure. The analysis concluded that even if the community of Alviso was relocated (at much greater cost than the proposed project), San Jose's Pollution Prevention Facility would still need a levee to protect this costly and vital infrastructure from flooding.

   Regarding the need to stockpile soils within the ecotone footprint of Ponds A12, A13, and A18. The project partners determined that stockpiling soils would be necessary to capture available and low-cost soils produced as a byproduct of other development projects. Because the quantity of material needed both for the levee, and the ecotone construction is large, the ability to gather and hold materials within the project site is paramount to successfully constructing the desired habitat features. The project partners conducted an analysis of potential available nearby sites appropriately sized for stockpiling and found that stockpiling within the proposed ecotone would reduce hauling costs, create constructions efficiencies and reduce truck traffic and corresponding air pollution attributed to moving large quantities of soil. Further, because the stockpiling areas are limited to the area that would become the transitional ecotone habitat, this temporary use would not impact additional areas within the project site.

c. **Minimum Amount Necessary.** The amount of fill (11.14 acres) for Reach 1 flood protection levee was determined by the project partners to be necessary by the engineering standards to build an approximately 15.2 foot high, stable barrier to withstand a hundred-year storm event with medium range projected sea level rise over the next 50 years.

   The appropriate size of transitional ecotone habitat that would provide upland refugia both now and over the 50-year period of analysis was used by the project partners in evaluating the effects of the proposed project, and hence the amount of fill needed to construct the ecotone, is more subjective. In nature, ecotones vary widely in size, from a few feet to many thousands of feet. The project partners chose a 30:1 sloped ecotone and a corresponding maximum width of 345 feet. The

ecotone is designed to transition from wider to narrower bands for a number of reasons, including habitat diversity, the lack of transitional habitat in the south Bay, the need to provide space for Bay marshes to transgress landward with rising seas, and the flood protection benefits provided by a wider, relatively gentle bayward facing levee slope. Some ecologists have recommended as much as 100:1 ecotone slopes for this project, however, the ability to obtain appropriate fill material and the cost of project construction has limited the proposed ecotone to 30:1 slope. The Reach 1 levee and ecotone combined would fill approximately 54.71 acres of former salt pond. This equates to approximately 0.05 percent of the acreage of the first two restored ponds (A12 and A18) that would be returned to tidal action.

d. **Effects on Bay Resources.** As has been stated above, this multi-benefit project has the primary project purpose of reducing flood risk to the Alviso community and the City of San Jose Pollution Prevention Facility; the restoration of additional former salt ponds to tidal habitat; would convert and increase the habitat functions and value of those areas for specific species, particularly those that rely on tidal marshes were historically diked from the Bay. In the instance of the Reach 1 levee and ecotone, 11,200 acres of former salt ponds would have enhanced habitat within five years of levee completion. However, some habitat loss will occur for specific species that specialize in higher salinity habitats. These species, primarily birds and invertebrates, would likely relocate to other former salt ponds or managed wetlands within the lower South Bay.

   The creation of transitional ecotone for high tide refugia within these ponds provides greater habitat diversity, and creates habitat for certain native plants where it currently does not exist. This issue will be further discussed in the natural resource policies section, including implementation of minimization, monitoring and adaptive management measures to ensure habitat development is proposed and would be required as part of the consistency determination.

e. **Valid Title**. An evaluation of property ownership within the Reach 1 levee and ecotone construction area is currently in draft form. While the USFWS owns and manages Ponds A12 and A13, the City of San Jose owns Pond A18. Further, there are multiple properties within the levee footprint that belong to other entities such as the State of California, Santa Clara County, and private citizens. As part of the Project Cooperative Agreement for the design phase of the project signed by the project partners, the local project sponsors - the Conservancy and the SCVWD are responsible for providing the lands, easements and right-aways (LERDs) prior to initiation of project construction. Because the Construction Project Cooperative Agreement is not yet signed and funds have not been appropriated, the local project sponsors are not yet required to provide the LERDs. The USFWS has signed a Memorandum of Understanding with the USACE, and anticipates issuing a 50-year use permit to the USACE for construction and maintenance of the project prior to initiation of construction.

To resolve this issue, the project sponsors have requested that the Commission waive this application requirement, and instead require that the LERDs be provided prior to construction. The Commission's Executive Director has agreed to this provision. Further, the USACE' and USFWS's consistency determinations states that "all necessary property rights will be acquired and evidence of these rights will be provided to BCDC prior to construction."

The Commission should determine whether the project is consistent to the maximum extent practicable with its law and policies regarding fill in the Bay and in salt ponds.

2. **Public Access**

   a. **Maximum Feasible Public Access.** Section 66602 of the McAteer-Petris Act states that "…existing public access to the shoreline and waters of the…[Bay] is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided." The Bay Plan Public Access policies state that "a proposed fill project should increase public access to the Bay to the maximum extent feasible…", and that "access to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available." Public access to some natural areas should be provided to permit study and enjoyment of these areas. However, the Bay Plan recognizes that some wildlife are 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. Public access should be sited, designed and managed to prevent significant adverse effects on wildlife.

   Further, the Bay Plan Recreation policies state, "Bay resources in waterfront parks and, where appropriate, wildlife refuges should be described with interpretive signs. Where feasible and appropriate, waterfront parks and wildlife refuges should provide diverse environmental education programs, facilities and community service opportunities, such as classrooms and interpretive and volunteer programs." In addition, for flood protection projects, the Recreation policies state, "[t]o enhance the appearance of shoreline areas, and to permit maximum public use of the shores and waters of the Bay, flood control projects should be carefully designed and landscaped and, whenever possible, should provide for recreational uses of channels and banks.

   The full Shoreline Project would result in a net reduction of public access to the Bay when the project is complete. While direct access between Alviso Slough and the trails along Coyote Creek would be improved by providing a more direct route on top of the new flood protection levee, breaching salt pond levees to return the ponds to tidal action would eliminate portions of existing trails. For example, the USACE states, "by breaching the existing A9-A15 pond berms, the project will modify the Alviso Slough Loop Trail. As the project is completed and all the ponds are restored, the trail length will decrease from an approximately 9-mile loop to a 3.3-mile trail out-and-back trail system on the eastern side of Ponds A12, A13, and A15." The full Shoreline Project proposes a number of public access improvements to

offset the loss of some of these trails and a multi-use trail offsite that will be part of future amendments to this consistency determination. The Commission has authorized several large marsh restoration projects in recent years, primarily in salt ponds and all with significant public access areas and improvements, but in some cases, due to both habitat concerns and costs associated with bridging new breaches some were eliminated.

Currently, a portion of the Bay Trail exists on the top of the existing flood protection levee between Alviso and Artesian Slough. As part of the Reach 1 levee construction, the levee would be raised as much as 10 feet from the existing grade (increases in levee height vary along the alignment) and the levee crown would be 16 feet wide, creating the opportunity to improve this portion of the Bay Trail. Once Reach 1 is complete, the trail, approximately 0.81-mile, 12-foot wide (surfaced with either decomposed granite or crushed aggregate), with two 2-foot wide shoulders on either side, would be restored on the levee crown. The improved section of the trail would likely improve views to the Bay to the east and New Chicago Marsh on the west due to the increase in elevation. Replacing the trail atop the new flood risk levee would also limit the trail's exposure to rising seas over the next fifty years.

The Reach 1 levee trail begins at Alviso Marina County Park. The County Park has ample public parking, interpretative signs, public restrooms, and boardwalks leading into the tidal marsh for observing habitat and wildlife. Constructing Reach 1 trail provides an opportunity for interim use of the trail in an out and back fashion while pedestrian bridges and additional levee reaches are constructed over the next three to five years. While the construction may necessitate closure of the trail during periods of ecotone construction, once Reach 1 is complete, trail access should be available.

It is unclear at this time whether amenities, such as signage and seating areas would be included on this portion of the trail. As the Commission receives further amendment requests, the complete public access package should become more apparent. Currently, it is the staff understanding that the USFWS would be responsible for maintaining the trail once it is constructed. Some of the complications that have limited the available public access information include the designing of the pedestrian bridges for the railroad and Artesian Slough, which rely in part on discussions with other entities (Union Pacific Railroad and the San Jose Pollution Prevention Plant) and the time needed to further develop the full project design while concurrently initiating construction in order to advance the project and provide needed flood risk reduction to the Alviso community.

The Commission should determine whether the Reach 1 portion of the Shoreline project is consistent with the Bay Plan policies regarding public access.

3. **Safety of Fills and Shoreline Protection.** The Bay Plan policies on Safety of Fills state, "[t]he Commission may approve fill that is needed to provide flood protection for existing projects and uses. New projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, ... takes future sea level rise into account for the expected life

of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity. Rights-of-way for levees or other structures protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional levee height so that no fill for levee widening is placed in the Bay." The Commission's Shoreline Protection policies state, "[n]ew shoreline protection projects and the maintenance or reconstruction of existing projects and uses should be authorized if: (a) the project is necessary to provide flood or erosion protection for (i) existing development, use or infrastructure…; (b) the type of the protective structure is appropriate for the project site, the uses to be protected, and the erosion and flooding conditions at the site; (c) the project is properly engineered to provide erosion control and flood protection for the expected life of the project based on a 100-year flood event that takes future sea level rise into account; (d) the project is properly designed and constructed to prevent significant impediments to physical and visual public access; and (e) the protection is integrated with current or planned adjacent shoreline protection measures. Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design." They further state that "[a]uthorized protective projects should be regularly maintained according to a long-term maintenance program to assure that the shoreline will be protected from tidal erosion and flooding and that the effects of the shoreline protection project on natural resources during the life of the project will be the minimum necessary." "Whenever feasible and appropriate, shoreline protection projects should include provisions for nonstructural methods such as marsh vegetation and integrate shoreline protection and Bay ecosystem enhancement, using adaptive management. Along shorelines that support marsh vegetation, or where marsh establishment has a reasonable chance of success, the Commission should require that the design of authorized protection projects include provisions for establishing marsh and transitional upland vegetation as part of the protective structure, wherever feasible." And finally, that "[a]dverse impacts to natural resources and public access from new shoreline protection should be avoided."

As described by the USACE and USFWS, this multi-benefit project includes significant shoreline protection via the construction of a 100-year tidal flood protection levee adjacent to eight salt ponds that would be restored to tidal action in future phases. In developing the project design, the project partners evaluated alternate locations for the flood protection levee, taking into consideration adjacent land uses, such as New Chicago Marsh and the protection of the community of Alviso and the City of San Jose Pollution Prevention Facility, and determined the most appropriate action was to excavate the landward salt pond levees and construct the new flood risk reduction levee to elevations sufficiently protective of the 100-year storm, at a final elevation of 15.2 feet NAVD88. The proposed elevation was determined by

evaluating projected high sea level rise scenario elevation for the South Bay in 2067, when mean higher high water is anticipated to be 10.23 NAVD88. Building the levee to this height would be protective of existing development, with an additional 5 feet of freeboard.

The location of the levee is set back from the current Bay edge, buffered by former salt ponds that will be breached as a future phase of this project. To further reduce flood risk from wave run up and to provide transitional ecotone habitat, the project had incorporated a bayward levee slope of 30:1, which would slow and dissipate wave action as it approached the new Bay shore. In the event of tidal flooding or heavy storms, this transitional habitat would potentially be inundated, however, the periodic flooding would represent a natural and important event in the habitat development and sustainability.

A 15-foot wide maintenance corridor on the landward side of the levee is planned, and may be used in the future to support further widening of the levee to increase its height if necessary. As part of the feasibility study for this project, the USACE conducted extensive geotechnical review of the levee alignment to determine if the older, soft Bay muds lying beneath the project could support the new levee. This analysis led to the engineering and design techniques calling for excavation of soft soils, importation of appropriate soils, site dewatering, fill and compaction of the new soil to ensure levee integrity. In developing the design for Reach 1, the USACE has complied with appropriate engineering standards and will monitor and maintain the levee for five years, and will certify it prior to transferring it to the local project sponsors (SCVWD) for future maintenance.

In the application process, the Commission staff has raised the issue of stockpiled soils potentially causing a shift in the soft bay muds due to excessive weight, resulting in a “mud wave” or rotation of deeper soils upward into the adjacent area. This has recently been an issue at Loch Lomond Marina in San Rafael due to overloading of soft soils, and similarly at the Brooklyn Basin project in Oakland, causing a collapse of the shoreline there. In response to Commission staff concerns, the USACE provided an analysis of the potential issue, and outlined measures to prevent such an occurrence. These measures include limiting the height of initial stockpiling to 7 feet NAVD88 in an area offset from the levee construction by 15 feet, and maximizing the slope at 1:1; limiting the side slopes to 5:1 in accord with the geotechnical analysis; grading the stockpile on an interim basis to facilitate drainage from between the stockpile and the new levee; and limiting the leading edge of all stockpiled soils to 10:1 slope, further guarding against overloading the soft salt pond soils.

Because this project is a multi-benefit project, it combines objectives to both protect existing communities from tidal flooding and, using gently sloping transitional ecotone habitat, a nonstructural flood protection method, supports marsh vegetation and Bay ecosystem enhancement. The project, while separate from the South Bay Salt Pond Restoration Project, uses the same adaptive management

strategy for supporting appropriate habitat restoration in a phased approach. This includes monitoring wildlife as sets of ponds are restored at five year intervals. Planting portions of the transitional habitat with appropriate mid and high marsh species, while lower marsh habitat would be passively vegetated, and seeding higher elevations with grasses and other alkaline meadow species, all with a high likelihood of success if the project elevations are established correctly.

The Commission should determine whether the fill proposed with the project is consistent with the Commission's safety of fills and shoreline protection policies.

4. **Climate Change.** The Bay Plan policies on Climate Change state, "within areas that a risk assessment determines are vulnerable to future shoreline flooding that threatens public safety, all projects… should be designed to be resilient to mid-century sea level rise projection" and "[i]f it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise…." The Climate Change policies go on to state that, "[u]ntil a regional sea level rise adaptation strategy can be completed, the Commission should evaluate each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and capacity to adapt to climate change impacts." The policies also state that natural resource restoration projects "should be encouraged, if their regional benefits and their advancement of regional goals outweigh the risk from flooding." The Bay Plan policies on Safety of Fills state that "[a]dequate measures should be provided to prevent damage from sea level rise and storm activity that may occur on fill or near the shoreline over the expected life of a project…."

   A primary project purpose is to protect the community of Alviso, neighboring businesses, and the San Jose Pollution Prevention Facility from tidal flooding. The USACE states that implementation of the plan "…will provide protection from a one-percent annual chance of exceedance (ACE) flood through the end of the 50-year period of analysis, accounting for sea level rise under the USACE high scenario. Additionally, this project will tie into the surrounding FRM [flood risk management] projects, which also provide protection from a one-percent ACE flood." The USACE' consistency further states "the project is consistent with USACE planning policies, which calls for a typical period of analysis of 50 years." "Regardless, USACE conducted an end-of-century analysis (through 2100) using the high sea level rise rate. The analysis showed that even with extremely high sea level rise, the project will be resilient through 2067. As designed, the project could likely obtain right-of-ways to expand [sic] the FRM levee beyond 2067 to 2079; however, beyond this date additional detailed analysis will likely be required and additional right-of-ways obtained."

   For the period from 2017 through 2067 (approximately mid-century), the USACE used a low rate of sea level rise of 6.12 inches and a high rate of 31.08 inches. For the period from 2017 through 2100 (end of century), the USACE used a low rate of sea level rise of 31.08 inches and a high rate of 60.6 inches. The Commission, based on the National Research Council projections, currently uses sea level rise projections ranging from 10-17 inches at mid-century (2050) and 31-69 inches

through the end of the century. The USACE' consistency determination states that the results of the USACE' analysis "indicate that for the low rate, the project will provide a level of risk reduction for the one-percent bayside water level through the year 2100. The current Federal Emergency Management Agency (FEMA) certification requirement of two feet of freeboard will also be maintained. For the high rate the project will provide risk reduction against the one-percent bayside ACE water level through 2094; however, the 2-foot FEMA certification requirement will only be maintained through 2067.... The project is resilient to 2067 (mid-century). Based on consideration of actionable climate science, the earliest date that would trigger a comprehensive revision of flood risk in the area would be year 2067 if a significant acceleration of sea level rise occurred, resulting in the high sea level rise scenario. The project will have adaptive capacity to elevation 16.0 feet NAVD88…. Beyond this time, additional plans will need to be made." The Reach 1 levee construction is designed in compliance with the projections and flood risk reduction requirements described above.

The Commission should determine whether the fill proposed with the project is consistent with the Commission's safety of fills and sea level rise policies.

5. **Natural Resources**

a. **Tidal Marshes and Tidal Flats.** The Bay Plan Salt Pond and Tidal Marsh and Tidal Flats policies cumulatively state, "[a]ny project for the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and provisions for long-term maintenance and management needs. Design and evaluation of projects in former salt ponds should include an analysis of: (a) the anticipated habitat that would result from pond conversion or restoration, and the predicted effects on the diversity, abundance and distribution of fish, other aquatic organisms and wildlife; (b) potential fill activities, including the use of fill material to assist restoration objectives; (c) flood management, mosquito abatement and non-native species control measures; (d) the protection of public utilities facilities; (e) the siting, design and management of public access while avoiding significant effects on wildlife; and (f) protection of water quality from high salinity discharges, methyl mercury, low dissolved oxygen and contaminated sediments."

In addition, "tidal marsh restoration projects anywhere Commission's jurisdiction should include in design and evaluation an analysis of: (a) how the system's adaptive capacity can be enhanced so that it is resilient to sea level rise and climate change; (b) the impact of the project on the Bay's sediment budget; (c) localized sediment erosion and accretion; (d) the role of tidal flows; (e) potential invasive species introduction, spread, and their control; (f) rates of colonization by vegetation; (g) the expected use of the site by fish, other aquatic organisms and wildlife; (h) an

appropriate buffer, where feasible, between shoreline development and habitats to protect wildlife and provide space for marsh migration as sea level rises; and (i) site characterization. If success criteria are not met, appropriate adaptive measures should be taken."

The policies further state that, "[b]ased on scientific ecological analysis and consultation with the relevant federal and state resource agencies, a minor amount of fill may be authorized to enhance or restore fish, other aquatic organisms or wildlife habitat…."

The complete Shoreline Project would restore approximately 2,900 acres of tidal marsh habitat to areas long diked off from the Bay and used for salt production. Phase 1 of the project involves breaching two former salt ponds (A12 and A18) to the Bay, restoring tidal action to 1,120 acres in 2022. This amendment includes levee construction and stockpiling of soils/sediment for the Reach 1 levee and transitional ecotone habitat in Ponds A12 and A13, and therefore these policies are applicable to this portion of the project. In undertaking this activity, the project would permanently impact approximately .22 acres of tidal marsh at the Alviso Marina County Park where the new levee will tie in with the existing levee. It is anticipated that this loss would be fully offset by the large area of tidal marsh that would develop over time.

The restoration of these former salt ponds is aligned with the approach taken for adjacent South Bay Salt Pond Project, carefully studying wildlife use of the existing habitat, experimenting with specific design features, monitoring wildlife's response and use of various ponds for a period of five years. The next phase of pond restoration is informed through the findings from previous salt pond restorations. Because the South Bay Salt Pond project is large, and geographically concentrated in three areas of the South Bay, project sponsors have the ability to research knowledge gaps and evaluate restoration techniques, while using the information to adaptively manage the project. The South Bay Shoreline Project is different in that it incorporates a large flood risk reduction levee to protect existing communities and infrastructure, but the restoration actions are similar and integrates what has been learned from the Salt Pond Restoration Project.

The construction of the transitional ecotone in Ponds A12 and A13 is somewhat experimental in that while the maximum slope is defined, the actual construction would likely include undulations and different widths of transition zone, and well as some variation in slope along the reach. This will allow the project sponsors to evaluate how vegetation and wildlife respond to different ecotone conditions, while providing habitat diversity, and a place where tidal marsh can transgress inland with rising seas. What is learned from this evaluation will inform further restoration work as the project proceeds. Once the ponds are breached, they are expected to naturally accumulate sediment over time from the sediment-rich South Bay waters. As the sediment accumulates, the USACE and USFWS anticipate plants to passively vegetate the tidal areas. The transitional ecotone that would initially be inundated

would be expected to vegetate fairly rapidly, while higher elevations would require planting and maintenance over time until sea level rise begins to transition the mid marsh areas to lower marsh, high marsh and meadow to mid and the high marsh respectively.

The USACE and the USFWS are proposing a 10-year monitoring program so that it can assure the project meets ecosystem restoration objectives and to provide information allowing land managers to adaptively manage the site. Some elements of that monitoring program include: (1) measurements of water levels, sediment accretion rates, and suspended sediment concentrations; (2) tidal marsh habitat acreage; (3) abundance of non-native plants; (4) plant species composition in upland transition zones; and (5) predators of Ridgeway's rail and salt marsh harvest mice. After 10 years, the non-federal sponsors would be responsible for continuing any additional monitoring. While the proposed 10-monitoring plan is for a significant period, the project site, particularly Pond A12 has some deeply subsided areas. There is concern that the proposed monitoring period may not be sufficient to evaluate the successful vegetation of the site or gather much needed information regarding the efficacy of the transitional habitat, especially in light of the anticipated changes associated with rising seas. The project sponsors have discussed the ability to continue monitoring in some form as part of the South Bay Salt Pond Restoration Project, but currently the proposed mitigation plan is limited.

Because the transitional ecotone habitat will remain dry during the Reach 1 construction and for at least a few years while levee Reaches 2 through 5 are constructed, there is significant potential for invasive species to become an issue at this site, particularly in newly disturbed soils. To address this potential issue, the USACE and USFWS propose a few different approaches depending on the invasive species. For plants, the primary concerns are upland ruderal species, pepperweed, and invasive spartina (cord grass). The upper portion of the transitional ecotone and the levee slopes would be hydroseeded with an appropriate mix of native plants seeds, including grasses, forbes and small shrubs. No large woody vegetation would be included or allow to naturally colonize these areas due to concern for levee integrity. Lower portions of the transitional ecotone would be planted with native species and the lowest portions would be allowed passively vegetate with tidal marsh species, such as the native spartina (cord grass), pickleweed, fat hen, alkali heath and other suitable species. There is some anticipation that non-native, non-invasive species of plants may also colonize the area, and limit the native vegetation by their presence. Equipment entering the site would be cleaned and inspected for seeds and vegetative matter as a preventative measure. These species would be managed through hand tool removal as needed. Management of invasive spartina if it begins to colonize the site would include removal using hand tools and limited use of an appropriate herbicide in coordination with the Invasive Spartina Project. Pepperweed, another highly invasive species would be managed by appropriately trained personal with herbicide.

Regarding invasive and predatory animals, habitat fencing may be used to limit access to the site. No dogs will be allowed on USFWS trails or the refuge, and the City properties require dogs to be leashed at all times. The USACE and USFWS would prepare a predator management plan that would address other invasive and predatory animals.

Portions of the monitoring and adaptive management of the site would be performed by the local project sponsors, the Conservancy and the SCVWD. The Conservancy and the SCVWD have applied for administrative permit for the project, which will primarily involve the monitoring and maintenance that the USACE and USFWS would not be responsible for, such as levee maintenance once the flood risk levee is certified by the USACE and transferred to the SCVWD and longer-term monitoring requirements. The terms of these requirements would be clearly defined in the permit and consistency determination conditions.

Other restoration criteria will be evaluated in later amendments to this consistency determination as more detailed plans are developed and provided.

b. **Fish, Other Aquatic Organisms and Wildlife.** The Bay Plan policies on Fish, Other Aquatic Organisms and Wildlife state that, "[t]o assure the benefits of fish, other aquatic organisms and wildlife for future generations… the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored, and increased." These policies also state that "[t]he Commission should consult with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species…and give appropriate consideration of (their) recommendations in order to avoid possible adverse impacts of a proposed project on fish, other aquatic organisms and wildlife habitat."

One of the project purposes is restoring approximately 2,900 acres of former salt ponds to full tidal action and their eventual evolution to tidal marsh habitat. While the population of some species in the area are likely to decline with the loss of pond habitat, breaching the levee is likely to result in immediate benefits to water quality, tidal circulation, and the populations of a great many other species, including most marsh-centric endangered and special status species such as the Ridgway's rail, California black rail, salt marsh harvest mouse, steelhead, and green sturgeon. Based on the results of other restoration projects, including the adjacent South Bay Salt Pond Restoration Project, the benefits to fish and wildlife can be expected to be dramatic and significant, though it will be many years before fully functioning tidal marsh becomes established.

The USFWS issued a biological opinion for this concept plan on April 27, 2015. The National Marine Fisheries Service (NMFS) issued a not likely to adversely affect concurrence letter on May 19, 2015. Listed species that may be impacted during this portion of the project construction include: salt marsh harvest mouse; Ridgway's rail; snowy plover; and least tern. These consultations include a number of best practices, minimization and management measures that would be applicable during the construction of the Reach 1 levee and ecotone. The project sponsors have

incorporated these requirements into the construction and project management plans. The measures include, but are not limited to: minimizing the construction disturbance area; education of construction employees on avoidance and minimization measures to protect listed and special status species; avoiding night time work in areas of listed species; having a resource agency approved biological monitoring on site during construction activities; limiting timing of construction, maintenance and management activities to two hours after an extreme high tide; installation of raptor perch deterrents; observing established environmental work windows when working within 700 feet of existing tidal marshes; use of hand tools for vegetation removal when working in areas of listed species habitat, maintaining appropriate distances from active nesting sites during breeding season; and other species specific measures as described. With the proposed minimization measures, the construction of the Reach 1 levee and ecotone would minimize potential harmful effects to wildlife.

c. **Water Quality.** The Bay Plan policies on Water Quality state, "Bay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality." The policies also state, "[w]ater quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the San Francisco Bay Regional Water Quality Control Board's (RWQCB) Basin Plan and should be protected from all harmful or potentially harmful pollutants." The policies, recommendations, decisions, advice, and authority of the State Water Resources Control Board and the Regional Board should be the basis for carrying out the Commission's water quality responsibilities." Finally, the Bay Plan policies on Water Quality state that "new projects should be sited, designed, constructed, and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay by: (a) controlling pollutant sources at the project site; (b) using construction materials that contain nonpolluting materials; and (c) applying appropriate, accepted, and effective best management practices; especially where water dispersion is poor and near shellfish beds and other significant biotic resources."

While there are opportunities for water quality impacts from the complete Shoreline Project, including such issues as salinity changes and methymercury production, this amendment request is limited to the construction of the Reach 1 levee and ecotone, and stockpiling of soils for future use. These activities would occur primarily within the confines of existing former salt ponds surrounded by salt pond berms. Ponds A12 and A13 have low levels of water present during the winter, and are either passively drained or evaporated and managed in the dry for much of the spring, summer and fall to allow use by nesting and loafing snowy plovers, least terns and other native shorebirds. Use of a portion of Pond A18 would require draining a least a portion of the site to allow soil stockpiling to occur. As a result, much of the construction would occur in "dry" conditions, reducing potential water quality impacts for these activities.

However, as with any construction project, there is potential for impacts to water quality, both on site and in adjacent areas. The largest potential issue is the importation of soil from offsite areas. Sources of soil include those excavated in SCVWD's offsite projects and those produced by construction projects in the region. In order to address potential soil contaminant issues, the project sponsors and the San Francisco Bay Regional Water Quality Control Board (Water Board) have established soil testing criteria for soils that would be used on site. Soil not meeting these criteria would be rejected as not suitable for use. This testing criteria has been promulgated in the Water Board's December 13, 2017 South Bay Shoreline Project Order (R2-2017-0049). To address other water quality issues associated with levee and ecotone construction, the project sponsors will develop a storm water management plan that would address both site water and the management of soil and erosion. Other water quality impact minimization measures that would be implemented include, but are not limited to: placement of a berm or sediment control device around all stockpile areas; maintaining roads and accessways in good condition; disposal of construction materials or debris outside the project site at an appropriate facility; stabilization of disturbed areas within12 hours of any break in construction activities; and hydroseeding bare soils to further prevent erosion.

Regarding potential water quality impacts from construction equipment, measures proposed to reduce this potential include: locating construction staging areas in uplands and confining them to as small an area as possible; maintaining construction equipment free of petroleum and other hazardous material leaks; having spill prevention kits on site and readily available; limiting onsite fueling of equipment; and providing an employee spill prevention and respond training. The USACE and USFWS have committed to developing a hazardous management/fuel spill containment plan in preparation for any unfortunate spill event on site.

The Commission should determine whether the project is consistent with its laws and policies regarding natural resources and water quality.

B. **Review Boards.** This first phase of the Shoreline Project is limited to construction of 0.81 miles of levee and transitional habitat and public access is limited to a linear trail atop the levee. Because there are no design features to consider on this portion of the trail, the Design Review Board did not review it. Further, because Bay fill is limited, and the USACE completed an extensive geotechnical review of the levee alignment, the Engineering Criteria Review Board did not review the project. The review boards may review portions of the project as planning proceeds, such as the railroad overcrossing, flood gates, and proposed public access package as more details are developed.

C. **Environmental Review.** The USACE, the USFWS and the SCVWD jointly prepared and issued a Final Integrated Interim Feasibility Study with Environmental Impact Statement and Environmental Impact Report (FEIS/EIR) in September 2015.

The Assistant Secretary of the Army (USACE) issued a Record of Decision for the Shoreline Project Phase 1 on July 28, 2016, making the determination that "[t]echnical, environmental, and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All

applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the review of these evaluations, I find that benefits of the recommended plan outweigh the costs and any adverse effects. This Record of Decision completes the National Environmental Policy Act process."

The SCVWD certified the FEIR and issued a statement of overriding consideration March 22, 2016. The CEQA review found that the project would result in significant impacts on hydrology, water quality, biological resources, hazards and hazardous materials, air quality, noise, and cultural resources. Most of these significant environmental impacts are short term impacts relating to construction, however, the project will result in substantial and permanent loss of managed wetlands, habitat necessary for pond specific birds. The impacts to these species is being adaptively managed through the South Bay Salt Pond Restoration Project's adaptive management plan, which is integrated with this project.

The statement of overriding considerations found that the project would provide tidal flood protection benefits to approximately 6,000 residents and people working in the area. A structure inventory identified 1,140 structures, transportation corridors, the City of San Jose wastewater treatment plant, and other critical infrastructure in the floodplain that would be protected by the project. In addition, the Project would create approximately 2,900 acres of tidal marsh habitat and ecotone, thereby restoring ecological structure and function, area, and connectivity, historically lost in the South Bay. The project would create transitional habitat, which has largely disappeared from Bay marshes. These habitat areas serve as high-tide refugia for threatened and endangered species and also provide habitat for a unique suite of plant species. The ecotone also would allow inland migration of the restored marshes in response to sea level change. Further, the recreational benefits include enhanced outdoor recreational opportunities and improved access to the [Don Edwards Wildlife] Refuge and adjacent restored marsh areas for the public. The proposed recreation features are estimated to increase the annual number of visitors to the Refuge by 20 percent and would create key connections in the San Francisco Bay Trail.

D. **Relevant Portions of the McAteer-Petris Act**

1. Section 66602
2. Section 66605
3. Section 66632

E. **Relevant Portions of the San Francisco Bay Plan**

1. *San Francisco Bay Plan* Policies on Fish, Other Aquatic Organisms, and Wildlife
2. *San Francisco Bay Plan* Policies on Water Quality
3. *San Francisco Bay Plan* Policies on Water Surface Area and Volume
4. *San Francisco Bay Plan* Policies on Tidal Marshes and Tidal Flats
5. *San Francisco Bay Plan* Policies on Shoreline Protection
6. *San Francisco Bay Plan* Policies on Safety of Fills
7. *San Francisco Bay Plan* Policies on Climate Change
8. *San Francisco Bay Plan* Policies on Public Access

9. *San Francisco Bay Plan* Policies on Salt Ponds
10. *San Francisco Bay Plan Map 7 Policies and Commission Comments*

Exhibits

A. **Project Vicinity**
B. **Shoreline Project Overview and Phases**
C. **BCDC Jurisdictional Areas**
D. **Proposed Levee Alignment**
E. **Reach 1 Levee Impact Area**
F. **Typical Cross Section of the Proposed Ecotone with 30:1 Side Slopes at Year 2021**
G. **Typical Cross Section of the Restored Ecotone at Year 2100**
H. **South Bay Shoreline Proposed Public Access and Recreational Trail System**
I. **Environmental Impact Report (EIR) Summary**