

San Francisco Bay Conservation and Development Commission

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TO: Commissioners and Alternates

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SUBJECT: Staff Recommendation Regarding U.S. Fish and Wildlife Service's Consistency Determination No. C2017.008.00 for the South Bay Salt Ponds Restoration Project, Phase Two
(For Commission consideration on June 21, 2018)

Summary and Recommendations

The staff recommends conditional concurrence with the U.S. Fish and Wildlife Service's (USFWS) consistency determination for Phase Two of the South Bay Salt Ponds Restoration Project (SBSPRP). Phase Two restoration work builds on the Initial Stewardship Plan (ISP) and Phase One restoration and enhancement actions.

The ISP resulted in the circulation and release of Bay waters through reconfigured pond systems, management of some of ponds as seasonal habitat, the restoration of a muted or full tidal action to limited number of ponds, and the management of several ponds in the Alviso and Ravenswood systems as higher salinity ponds. Phase One actions included restoring approximately 500 acres (Alviso Pond A6 and A17) to tidal habitat, creating 1,400 acres of muted tidal habitat (Alviso Pond A8/A8S), reconfiguring 479 acres of salt ponds (Ravenswood Pond SF2 and Alviso A16) to managed ponds, installing recreation/public access facilities, and conducting on-going operations and maintenance of the existing site.

Phase Two includes further enhancement and restoration of former salt ponds at the Alviso and Ravenswood Pond Complexes to a mixture of tidal wetlands (Alviso Island Ponds A19 and A20, Alviso Mountain View Ponds A1 and A2W, and Ravenswood Pond R4), and managed ponds (Alviso Ponds 8A and 8AS and Ravenswood Ponds R3, R5 and S5). In total, Phase Two would enhance, restore and reconfigure approximately 1,335 acres of tidal habitat, 600 acres of reversible muted tidal marsh, 67 acres of enhanced managed ponds, and 270 acres of seasonal ponds. The activities associated with Phase Two include levee modifications (lowering, removal, and improving), ditch blocking, removing existing and installing new water control structures and bridges, installing and improving trails and other recreation/public access facilities, constructing habitat islands, and filling for transitional habitat, and levee breaching.

This consistency determination is for Phase Two of the SBSPR Project. BCDC authorization for restoration activities in future phases of the SBSPR Project would require an amendment to this consistency determination, or issuance of a new, separate consistency determination for those future phases.

Staff Note

Staff initially listed the South Bay Salt Pond Phase Restoration Project Phase Two as Material Amendment No. Seven to C2003.010.00, which authorized work associated with levee maintenance, the ISP, and Phase One of the project. After further evaluation, in consultation with the project sponsors, staff determined that a new consistency determination for Phase Two actions would create greater clarity and ease of compliance. Therefore, the project was reclassified at C2017.008.00. Commission Letter of Agreement C2003.007.06 remains the Commission's authorization for the salt pond levee maintenance, Initial Stewardship Program, and Phase One of the restoration project.

Staff Recommendation

I. Conditional Concurrence

- A. The San Francisco Bay Conservation and Development Commission concurs with the determination of the U.S. Fish and Wildlife Service (USFWS) that, as conditioned, the South Bay Salt Pond Restoration Project Phase Two is consistent with the Commission's Amended Management Program for the San Francisco Bay segment of the California Coastal Zone, subject to the USFWS's acceptance of the conditions contained in Section II below and the incorporation of those conditions into the project. If the USFWS fails to agree to the conditions and fails to incorporate the conditions into the project, the USFWS should treat this conditional concurrence as an objection and should notify the Commission immediately. If this conditional concurrence is converted into an objection, the provisions of Title 15 Code of Federal Regulations Sections 930.43, 930.44, and 930.45 shall apply.

In the Bay:

1. Dredge approximately 9,610 cubic yards (cy) of sediment in an approximately 112,700-square-foot (2.59-acre) area of submerged tidal lands and fringe tidal marsh to create pilot channels to connect the ponds to the Bay.

In the Bay and Salt Ponds:

1. **Alviso Complex Island Ponds (A19, A20 and A21) (Exhibit B)**
 - a. Remove two levees between Ponds A19 and A20, including the western-most levee of Pond A19 (1,240 feet) and the eastern most levee of Pond A20 (1,360 feet), through excavation of approximately 8,900 cy of soil and sediment;
 - b. Lower 3,000 feet (2.5 acres) of levee on the north side of Pond A19 to 9 feet NAVD88 through excavation and dredging of approximately 9,400 cy of soil and sediment to allow occasional overtopping and flooding of the pond during spring tides;
 - c. Excavate and dredge two breaches on the north side of Pond A19, one measuring approximately 150 feet wide at the top and 50 feet wide at the bottom, and one measuring approximately 90 feet wide at the top and 50 feet wide at the bottom, both with a 2:1 slope and an invert elevation of 3.5 NAVD88, through a total excavation of 2,400 cy of soil and sediment to provide additional tidal flow into the pond;
 - d. Lower 1,350 feet (1 acres) of levee on the south side of Pond A19 to 9 feet NAVD88 through excavation and dredging of approximately 3,300 cy of soil and sediment to allow occasional overtopping and flooding of the pond during spring tides;

- e. Widen the existing breach on the south side of Pond A19 by removing an additional 90 feet of levee (total breach width 150 feet) through excavating approximately 1,500 cy of soils and sediment, to create a bottom width of 150 feet, and 3.5-foot NAVD88 invert elevation; and
 - f. Place the 25,500 cy of dredged and excavated material in six ditch block locations, and the remaining material in existing historic borrow ditches in Pond A19 to an elevation of approximately 1 NAVD88.
- 2. Alviso Complex (Ponds A8 and A8S) (Exhibit C)**
- a. Create 24.6 acres of transitional habitat in two areas, with a maximum elevation of 9 feet NAVD88 and a maximum width of 2,075 feet each (total of 4,150 linear feet) by placing approximately 179,000 cy of soil and/or sediment adjacent to the existing southern levee and grading it to approximately 30:1 slope along 2,300 feet of the southeastern and 2,100 feet of the southwestern “corners” of Pond A8S.
- 3. Mountain View-Alviso Complex (Ponds A1 and A2W) (Exhibit D)**
- a. Improve approximately 4,400 feet of the western Pond A1 levee (along Charleston Slough) by raising its elevation north of the proposed viewing platform to 11 NAVD88 and its elevation south of the platform to 14.7 feet NAVD88, widening its base by 50 to 100 feet, widening the crest to 12 feet north of the platform and 14 feet south of the platform to accommodate the new trail, grading the levee slope to 3.5:1 (v:h), and creating these dimensions by placing and grading approximately 130,000 cy of soil;
 - b. Improve approximately 1,440 feet of the Coast Casey Forebay Levee, perpendicular to Pond A1 levee, by raising its elevation 14.7 feet NAVD88, widening its base by 30 to 90 feet, widening its crest to 24 feet, grading the levee slope to 3.5:1, and creating these dimensions by placing and grading approximately 39,450 cy of soil;
 - c. Create 16.9 acres transitional habitat by placing approximately 77,100 cy of soil and/or sediment to a maximum elevation of 9 feet NAVD88 and grading it to varying slopes, 40:1, 30:1, 20:1 and 10:1, along 3,900 feet of the southern edge of Pond A1;
 - d. Create up to five habitat islands in Pond A1 by placing and grading approximately 26,800 cy of sediment/soil to a maximum elevation of 12.5 feet NAVD88, with 10,100 square feet in surface area, with 3:1 slopes;
 - e. Construct a 2,350-foot-long, 3-foot-wide (0.16 acres) new Pacific Gas and Electric (PGE) pile supported wooden boardwalk in the tidal marsh north of and adjacent to Pond A1. The boardwalk would be supported by 470 pile footings, representing 280 cy of solid fill, covering approximately 700 square feet of existing marsh;

- f. Remove an existing water control structure and excavate and dredge 1,700 cy of soils and sediment to create an approximately 110-foot-wide breach to an invert elevation of 2 feet NAVD88, a bottom width of 60 feet, and a 2:1 side slope, through approximately 8,010 square feet of existing levee on the northwestern “corner” of Pond A1 to allow tidal flow into the pond from Charleston Slough;
- g. Excavate and dredge 1,700 cy of soils and sediment to create an approximately 110-foot-wide breach with an invert elevation of 2 feet NAVD88, a bottom width of 60 feet, and a 2:1 side slope, through approximately 8,430 square feet of existing submerged tidal lands, tidal marsh and levee on the lower southeastern edge of Pond A1 to allow tidal flow into the pond from Permanente Creek/Mountain View Slough;

Pond A2W

- h. Create 15.7 acres of transitional habitat by placing approximately 157,120 cy of soil and/or sediment to a maximum elevation of 9 feet NAVD88, and grade it to approximately 30:1 slope along 2,600 feet of the southern edge of Pond A2W;
- i. Improve approximately 6,440 feet of the northern (along the Bayfront) and eastern Pond A2W levee, by grading the surface to be flat and resurfacing as needed;
- j. Create up to five habitat islands in Pond A2W by placing and grading approximately 26,800 cy of sediment/soil to a maximum elevation of 12.5 feet NAVD88, approximately 10,100 square feet in surface area, with 3:1 slopes;
- k. Upgrade PG&E access to infrastructure and sixteen transmission towers by raising and widening the tower pedestals using 80 cy of concrete fill, and raise the elevation of the existing wooden boardwalk, using existing pillars, by 4 feet, and increase the width throughout by 2 feet (increase in 0.31 acres) in Pond A2W;
- l. Excavate and dredge 5,400 cy of soils and sediment to create two breaches, one approximately 200 feet wide and 230 feet long (2,400 cy), and the second approximately 200 feet wide and 200 feet long (3,000 cy), both with an invert elevation of 2 feet NAVD88, a bottom width of 60 feet, and 2:1 side slopes, through approximately 0.2 acres of existing tidal marsh and levee on the western side of Pond A2W to allow tidal flow into the pond from Permanente Creek/Mountain View Slough;

- m. Excavate and dredge 3,300 cy of soils and sediment to create two breaches, both approximately 60 feet wide. One channel would be approximately 200 feet long, and the other would be approximately 210 feet long, both with an invert elevation of 2 feet NAVD88, a bottom width of 60 feet, and 2:1 side slopes, through approximately 0.3 acres of existing tidal marsh and levee on the eastern side of Pond A2W to allow tidal flow into the pond from Stevens Creek/Whisman Slough;
- n. Place up to 300 cy of rock protection (1,000 square feet) along both sides of the breaches on Whisman Slough to prevent additional erosion of the breaches;
- o. Install two single span-precast/prestressed I-girder bridges, approximately 60 feet long, and 19 feet wide (1,131 square feet each), across the two breaches in the western levee adjacent to Whisman Slough, at a deck elevation of 12.25 NAVD88 to allow infrastructure maintenance vehicle and public access along Pond A2W. Installation of the bridges would include cast in-place concrete foundations, wing walls, and concrete barriers along the sides and supported by 16, 14-inch diameter piles per bridge (32 total), a total of 540 cy of solid fill (0.1 acres);

Public Access (Exhibit E)

- p. Construct a new, 1000-foot long, ADA and ABA compliant, multi-use, 10-12 foot-wide levee top spur trail, with two-foot-wide shoulders, building up to 12-inches thick of aggregate base and polymer stabilizer along Charleston Slough (western levee of Pond A1) which would require approximately 500 cy of aggregate base;
- q. Construct a new, 1.1 mile, ADA and ABA compliant, multi-use, 10-12 foot-wide levee top spur trail, with two-foot-wide shoulders, using up to 2,600 cy of aggregate base and a polymers stabilizer along Stevens Creek/Whisman Slough (eastern levee of Pond A2W). The trail widens to 19 feet when it crosses the two bridges, and then resumes the 10-12 foot-wide trail;
- r. Reconstruct in-kind and pave an existing portion of the Bay Trail using up to 700 cy of aggregate and asphalt atop the southern portion of the improved southern levee adjacent to Charleston Slough, and construct an ADA-compliant ramp connecting the existing viewing platform and the reconstructed Bay Trail using 200 cy of aggregate and asphalt;
- s. Construct three new viewing platforms, including:
 - (1) At the terminus of the spur trail adjacent to Charleston Slough, construct an 830-square-foot viewing platform with an aggregate base surface on a widened section of the levee, place two sets of benches, two interpretive panels, and a 10-foot-high and 60-foot-wide, chain link fence to limit human and predator access to the restoration site;

- (2) Along the Bay Trail and the south levee of Pond A1, approximately 525 feet east of Permanente Creek/Mountain View Slough, construct a 440-square-foot viewing platform on a widened section of the levee with an aggregate base surface approximately 2 feet higher than the Bay Trail, and place two sets of benches and two interpretive panels; and
- (3) At the terminus of the spur trail adjacent to Whisman Slough, construct a 1,900-square-foot viewing platform with an aggregate base surface on a widened section of the levee, and place two sets of benches, one interpretive panel, and a 10-foot-high, 60-foot-long, chain link fence and gate to allow Refuge and PG&E access beyond the trail terminus, and to limit other human and predator access to the restoration site.

4. Ravenswood Complex (Ponds R3, R4, R5 and S5) (Exhibit F)

Pond R3

- a. Install a two-way, gated water control structure at the invert elevation of 2 feet NAVD88 consisting of one 48-inch diameter, 62-foot-long, high density polyethylene (HDPE) pipe culvert, and associated operations and maintenance bridge consisting of a pre-cast/stress concrete voided slab and eight concrete piles, bordered by cable railing for safety, in the eastern levee of Pond R3 approximately 750 feet from the All-American Canal and at the site of a historic slough channel between Pond R3 and Ravenswood Slough;
- b. Install a two-way, gated water control structure at the invert elevation of 4.5 feet NAVD88 consisting of one 48-inch diameter, 67-foot-long, HDPE pipe culvert, and associated operations and maintenance bridge consisting of a pre-cast/stress concrete voided slab and eight concrete piles, bordered by cable railing for safety, in the western levee between Ponds R3 and S5 approximately 200 feet from the junction of Ponds R3, S5 and R5;
- c. Improve approximately 4,700 feet of the levee between Pond R3 and R4, by filling the All-American Canal, placing and grading approximately 182,400 cy of soil, raising its elevation to 11 feet NAVD88, widening its crest to 60 feet and its base to 50 to 100 feet, and grading the slope to 3.5:1 on the north side and 4.5:1 on the south side of the levee;

Pond R4

- d. Create two habitat transition zones in Pond R4 by placing 50,200 cy of soil along 2,500 feet of the western levee connecting to the existing upland habitat at the adjacent Bedwell Regional Park and by placing 76,300 cy of soil along 5,200 feet of the southern levee to a maximum elevation of 9 feet NAVD88. Both transitions zones would be graded to approximately 30:1 slope;

- e. Install a two-way, gated water control structure at the invert elevation of 3.5 feet NAVD88 consisting of two 48-inch diameter, 78-foot-long, HDPE pipe culvert, and associated bridge consisting of a pre-cast/stress concrete voided slab and eight concrete piles, bordered by cable railing for safety, in the north-south levee between Pond R4 and R5;
- f. Excavate 1,600 cy of soil/sediment to a depth of 2 feet NAVD88 to create a 2,890-foot-long, two-foot-wide, bifurcated pilot channel from the breach into Pond R4 along historic slough traces, and use excavated material to construct site features;
- g. Excavate and dredge approximately 2,100 cy along 960 feet of the northwest levee to 8 feet NAVD88 with side slopes of 2:1, use the material in onsite features including levee improvements and transitional habitat;
- h. Excavate and dredge approximately 13,300 cy to create a 470-foot-wide breach with an invert elevation of 2 feet NAVD88 through approximately 940 square feet of existing tidal marsh on the northeastern-most side of Pond R4 into Ravenswood Slough to allow tidal flow into the pond, and use the soil and sediment to build ditch blocks in the historic borrow ditches within the Pond;

Pond R5 and S5

- i. Install a two-way, gated water control structure at the invert elevation of 2 feet NAVD88 consisting of two 48-inch diameter, 183-foot-long, HDPE pipe culvert, and associated bridge consisting of a pre-cast/stress concrete voided slab and eight concrete piles, bordered by cable railing for safety at the most eastern extent of Pond S5 and Flood Slough;
- j. Excavate 8,200 cy of soil/sediment and 1,790 feet of internal levees (north and south) between Pond R5 and S5 and between the two portions of Pond S5 to an elevation of 4.5 NAVD88 to create a contiguous managed pond habitat, and use the excavated soils for onsite habitat features, including the habitat island described below;
- k. Construct a 1.77-acre habitat island from approximately 500 feet of remnant of interior levee and other excavated soils between Ponds R5 and S5 with an elevation of 9 feet NAVD88 and 2:1 sides slopes. Surface the habitat island with approximately 2,300 cy of sand, shell, or other substrate to increase the habitat value of the island;

Public Access (Exhibit G)

- l. Construct a new, 0.5 mile, ADA and ABA compliant, multi-use, 10 to 12 foot-wide levee top connecting trail, with two-foot-wide shoulders, by surfacing the raised levee with up to 1,200 cy of aggregate base and a polymers stabilizer between Ponds R3 and S5, R4 and R5 (western side Pond R3 and eastern side of Pond R5);

- m. Install a post and cable fence on both sides of the levee between Pond R3 and R5 and Pond R4 and R5 to deter human access into the ponds;
 - n. At the junction of Ponds R3, R4, R5 and S5, construct a 9,960 square foot viewing platform on a widened section of the levee, surfaced with an aggregate base, and place three sets of benches and three ADA-compliant interpretive panels and install, immediately east of the platform, a chain link fence to limit human and predator access to the restoration site;
 - o. Install a 3-foot-high approximately 8,000-foot-long chain link fence along the northern edge of the southern Pond R3 and Pond S5 levee to deter human and predator access to the ponds. At the western juncture of Pond S5 and R3, install a gate that is no less than 10 feet wide to allow Refuge personnel access to the Ponds; and
 - p. Conduct in-kind repair and maintenance in perpetuity of the levees, water control structures, bridges, trail and public access amenities.
- B. This conditional concurrence is given based on the information submitted by or on behalf of the USFWS in its letter dated March 31, 2017 for the SBSPR Project Phase Two activities, including all accompanying and subsequently submitted correspondence and exhibits.
- C. The work authorized by this Letter of Agreement is to commence by December 31, 2020 and be diligently pursued to completion and completed by December 31, 2024, unless the terms of this amended consistency determination were changed by further amendment of this amended consistency determination.
- D. Phase Two of the SBSPR Project will convert or enhance 2,272 acres of former salt production ponds to create 1,005 acres of tidal wetlands with transitional habitat features, further enhance 330 acres of tidal marsh through levee and breach modification at the Island Ponds, create transitional habitat within 600 acres of reversible muted tidal marsh at Ponds A8 and A8S, improve 270 acres of seasonally dry ponds, and reconfigure 67 acres of managed ponds at Ravenswood to improve water circulation and habitat. The project will create approximately 81 acres of transitional habitat at the A8, Mountain View, and Ravenswood Pond complexes, and up to eleven habitat islands covering approximately 5.1 acres in the tidal wetlands at the Mountain View Ponds. Phase Two will result in approximately 843,000 cubic yards of fill in the Commission's salt pond jurisdiction (located in both in the Alviso and Ravenswood former salt pond complexes) covering approximately 126 acres.

II. Special Conditions

- A. **Construction Documents.** The improvements authorized herein shall be built generally in conformance with the following documents: (1) "South Bay Salt Pond Restoration Project, Island Ponds Near Alviso, California" prepared by AECOM, dated November 30, 2016; (2) "South Bay Salt Pond Restoration Project, A8 Near Alviso, California" prepared by AECOM, dated November 30, 2016; (3) "South Bay Salt Pond Restoration Project,

Mountain View Ponds Near Mountain View, California” prepared by AECOM, dated December 9, 2016; and (4) “South Bay Salt Pond Restoration Project, Ravenswood Ponds Near Menlo Park, California” prepared by AECOM, dated December 13, 2016. The USFWS is responsible for assuring that all construction documents accurately and fully reflect the terms and conditions of this amended Letter of Agreement and any legal instruments submitted pursuant to this amended authorization. No substantial changes shall be made to these documents without prior review and written approval by or on behalf of the Commission through plan review or an amendment to this Letter of Agreement.

- B. Construction Documents Review and Approval.** No work whatsoever shall commence pursuant to this amended Letter of Agreement until final precise site, public access, engineering, restoration, and grading plans and any other relevant criteria, specifications, and plan information for that portion of the work have been submitted to, reviewed, and approved in writing by or on behalf of the Commission. All documents are reviewed within 60 days of receipt. To save time, preliminary documents may be submitted prior to the submittal of final documents. If final construction document review is not completed by or on behalf of the Commission within the 60-day period, the USFWS may carry out the project authorized herein in a manner consistent with the plans referred to in Special Condition II-A of this amended Letter of Agreement.

Approval or disapproval of the plans shall be based upon (1) completeness and accuracy of the plans in showing the features required above, (2) consistency of the plans with the terms and conditions of this amended consistency determination, (3) assuring that the proposed fill material does not exceed this amended consistency determination, (4) the appropriateness of the types of fill material and their proposed manner of placement, and (5) the preparation of the plans by professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes.

- 1. Plan Details.** All design and construction documents shall be labeled with: the Mean High Water line or the upland extent of marsh vegetation no higher than +5 feet above Mean Sea Level and the tidal datum reference (NAVD88 or, if appropriate, Mean Lower Low Water (MLLW)); the corresponding 100-foot shoreline band; property lines; horizontal control benchmarks, the location, types, and dimensions of materials, structures, and project phases authorized herein; grading limits; and the boundaries of public access areas and view corridor(s) required herein. Documents for shoreline protection projects must be dated and signed by the professional of record and include the preparer's certification of project safety and contact information. No substantial changes shall be made to these documents without prior review and written approval by or on behalf of the Commission through plan review or an amendment to this Letter of Agreement.

2. **Conformity with Final Approved Documents.** All authorized improvements and uses shall conform to the final approved documents. Prior to use of the facilities authorized herein, the appropriate professional(s) of record shall certify in writing that the work covered by the authorization has been implemented in accordance with the approved criteria and in substantial conformance with the approved documents. No substantial changes shall be made to these documents without prior review and written approval by or on behalf of the Commission through plan review or an amendment to this Letter of Agreement.
 3. **Discrepancies between Approved Plans and Special Conditions.** In case of a discrepancy between final approved documents and the special conditions of this amended Letter of Agreement or legal instruments, the special condition shall prevail.
 4. **Reconsideration of Plan Review.** The USFWS may request reconsideration of a plan review action taken pursuant to this special condition within 30 days of a Commission plan review action by submitting a written request for reconsideration to the Commission's Executive Director. Following the Executive Director's receipt of such a request, the Executive Director shall respond to the USFWS with a determination on whether the plan review action in question shall remain unchanged or an additional review and/or action shall be performed by or on behalf of the Commission, including, but not limited to, an amendment to the amended Letter of Agreement.
 5. **As Built Plans.** Within 120 days of completed construction of project elements authorized herein, the USFWS shall submit to the Commission one signed and stamped copy of the "as built plans" for that component of the project.
- C. **Construction and Stockpiling Activities.** As the USFWS and their contractors proceed with staging area, levee, and ecotone construction, and stockpiling activities they shall incorporate the following measures and best management practices:
1. **Notice to and Certification of Contractor Review.** The USFWS shall provide a copy of this Letter of Agreement to any contractor or person working with them to implement the activities authorized herein for review and compliance. Prior to commencing any grading, demolition, or construction, the contractor or contractors in charge of that portion of the work shall submit written certification that s/he has reviewed and understands the requirements of the Letter of Agreement and the final BCDC-approved plans, particularly as they pertain to any environmentally sensitive areas, public access or open space required herein.
 2. **Horizontal Control Points.** The USFWS shall include on plans required by Special Condition II-A and II-B and install a minimum of four permanent horizontal control points (survey benchmarks) each at Alviso Pond A8S, Alviso-Mountain View Ponds A1 and A2W, and Ravenswood Pond R4. These control points shall be placed under the supervision of a registered civil engineer or land surveyor and shall be accurately

located and mapped in relation to each other, to the closest known existing control point or other acceptable fixed point in the project area, and to the limits of any proposed fill in the Bay and salt ponds. These control points shall be located so as to facilitate field checking, with simple equipment, of the limits of the fill authorized pursuant to this authorization. Such fill limits shall be dimensioned from these control points, or, if the scale of the drawing is adequate, it shall carry a note stating that field dimensions may be scaled from the drawing and the accuracy of such scaling. The control point locations shall be clearly shown on all plans submitted pursuant to Special Condition II-A and II-B.

3. **Dewatering Plan and Activities.** The USFWS shall develop and submit a minimum of 30 days prior to initiation of construction a dewatering plan for the construction sites, including coffer dam plans, the levee and stockpiled areas that would minimize mudding of waters, scour of soils/sediment, and water flow including on the project site, and in adjacent tidal sloughs and other water features. The plan can be submitted simultaneously with submission to the Water Board, and if agreeable to USFWS can be a coordinated review. The Commission staff shall review and approve the Dewatering Plan prior to initiation of dewatering activities, and within 30 days of submittal, or the dewatering activities can proceed as approved by the Water Board.
4. **Construction of Stockpile Areas.** The USFWS shall in constructing stockpiling areas, minimize disturbance to wildlife and existing habitat, through use of best management practices and noise reduction methods. For example, if sheetpiles are driven, the contractor should use a vibratory installation method if feasible.
5. **Suitability of Offsite Soils.** The USFWS shall ensure that any upland soils imported to the site are suitable for use via implementation of "South Bay Salt Pond Restoration Project Quality Assurance Project Plan for Fill Import to Operate and Maintain Levees at Ravenswood and Alviso Salt Pond Complexes (January 12, 2017)" (Fill QAPP) consistent with the requirements of and approved by the San Francisco Bay Regional Water Quality Control Board's (Water Board) Order.

In addition, any sediment dredged or excavated from riverine or Bay sources for use on site shall meet the Water Board's sediment quality requirements contained in the staff report entitled, "Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines, dated May 2000, or if revised, the most current guidelines available at that time, and consistent with the Water Board Order R2-2018-0020.

If soils or sediment are proposed for import to the site for construction, the USFWS shall provide a copy of the characterization report to Commission staff concurrently with submission to the Water Board a minimum of 30 days prior to soil/sediment placement for review and approval.

6. **Control of Stockpiled Soils.** To prevent base failure, "shoving" or "mudwaves" resulting from overburdening the soft Bay muds in the stockpiling areas, the USFWS shall limit initial stockpiling to 7 feet NAVD88, in 35-foot-wide area that is offset from the toe of new levee alignment by 15 feet. Further, as additional soil is added

to the stockpile, the leading edge (bayward) of the stockpile shall have a side slope not greater than 10:1; no side slope shall be greater than 5:1, and the stockpile shall not exceed 15 feet NAVD88 at any time. The USFWS shall monitor the stockpile weekly and existing former salt pond soils for changes that would indicate unstable subsurface or surface soils/sediment are mobilizing.

7. **Stockpile Episode Completion.** As each episode of stockpiling is complete, the USFWS shall: (1) track-walk the side slope of the pile parallel to the direction of the slope to compact the edges; (2) hydroseed the soil with native grasses; and (3) install and stake appropriate amounts of straw wattle perpendicular to the slope to prevent erosion or soil migration into other areas.
8. **Creosote Treated Wood.** No pilings or other wood structures that have been pressure treated with creosote shall be used in any area subject to tidal action in the Bay or any certain waterway, in any salt pond, or in any managed wetland within the Commission's jurisdiction as part of the project authorized herein.
9. **In-Kind Repairs and Maintenance.** Any in-kind repairs and maintenance of the facilities authorized herein shall only use construction material that is approved for use in San Francisco Bay. Construction shall only occur during current approved months during the year to avoid potential impacts to fish and wildlife. Commission staff should be contacted to confirm current restrictions.
10. **Debris Removal and Best Management Practices.** All construction, repair, and maintenance operations shall be performed to prevent construction materials from falling into the Bay or former salt ponds and managed wetlands. In the event that such material escapes or is placed in an area subject to tidal action of the Bay, the USFWS shall immediately retrieve and remove such material at their expense.

All construction debris and any uncovered debris, specifically treated wood, and more generally debris such as concrete, asphalt, wood, plastics, etc., shall be removed from the project site for proper disposal outside of the Commission's jurisdiction. Excavated debris may be temporarily stored within the Commission's jurisdiction, provided measures are employed to assure that material does not wash or erode into the surrounding former salt ponds, marsh or waterways. In the event that any such material is placed in any area within the Commission's jurisdiction for an extended period (i.e. more than 60 days), the USFWS, or the owner of the improvements, shall remove such material, at their expense, within ten days after they have been notified by the Executive Director of such placement.
11. **Break in Work.** The USFWS shall secure all disturbed areas within twelve hours of work stoppage if the break in work or construction activities is longer than 7 days
12. **Temporary Impacts to Public Access.** During construction of additional levee sections or other project features, the public access may require temporary closures. If such closures are necessary, the USFWS shall notify the Commission staff of the closure 30 days before its occurrence, duration of closure, and, if feasible, any potential detours that would allow for alternate public access.

Prior to any public access restriction, the contractor shall develop, in consultation with the appropriate representatives of USFWS, an Interim Public Access Plan indicating how public access to the Bay Trail and nearby roads, trails, paths, and park areas shall be maintained, if possible, during construction work.

To minimize temporary construction impacts on public access to, and recreational use of, project areas, the USFWS shall limit access restrictions during construction to specific areas surrounding the construction activities, and limit such restrictions to the minimum period necessary. If needed, flaggers shall be stationed near the construction activity areas to direct and assist members of the public around these areas while maintaining public access and signs shall be posted explaining how long the public access path will be affected and showing possible alternative routes.

Once the construction activities for individual project features are complete, the corresponding public access area(s) shall be restored to pre-construction condition.

13. **Maintenance.** The USFWS shall inspect and maintain all levee improvements authorized herein such that they continue to provide flood risk reduction for the adjacent properties. Maintenance shall include, but not be limited to, repair of any levee seepage, cracking, or unacceptable settlement (beyond levee design), and mowing such that visual inspection can be conducted.
- D. **Riprap.** Riprap material placement is limited to the areas on either side of the Alviso-Mountain View Pond A2W breaches at Whisman Slough to prevent further erosion of the breached levee.
1. **Riprap Material.** Riprap material shall be either quarry rock or specially cast or carefully selected concrete pieces free of reinforcing steel and other extraneous material and conforming to quality requirements for specific gravity, absorption, and durability specified by the California Department of Transportation or the U. S. Army Corps of Engineers. The material shall be generally spheroid-shaped. The overall thickness of the slope protection shall be no more than three feet measured perpendicular to the slope. Use of dirt, small concrete rubble, concrete pieces with exposed rebar, large and odd shaped pieces of concrete, and asphalt concrete as riprap is prohibited.
 2. **Riprap Placement.** Riprap material shall be placed so a minimum amount of fill is established by means of an engineered slope not steeper than two (horizontal) 2:1 (vertical). The slope shall be created by the placement of a filter layer protected by riprap material of sufficient size to withstand wind and wave generated forces at the site.

3. **Maintenance.** The riprap improvements authorized herein shall be regularly maintained by, and at the expense of the USFWS, any assignee, lessee, sublessee, or other successor in interest to the project. Maintenance shall include, but not be limited to, collecting any riprap that become dislodged and repositioning them in appropriate locations within the riprap covered areas, replacing in-kind riprap material that is lost, repairing the required filter fabric as needed, and removing debris that collects on top of the riprap. Within 30 days after notification by Commission staff, the USFWS or any successor or assignee shall correct any maintenance deficiency noted by the staff.
- E. **Completion of Construction Activities.** Within 90 days of completion of the levee and transitional habitat features construction, the USFWS shall remove temporary structures such as sheetpiles, coffer dams, and dewatering equipment from the Commission's jurisdiction.
- F. **Public Access.** Within six months of completing the Phase Two levee improvements in the Alviso-Mountain View and Ravenswood Ponds, or by December 31, 2021, whichever is earlier, the USFWS shall provide the following public access improvements:
 1. **Alviso-Mountain View Ponds A1 and A2W.** Public access improvements in the Alviso Mountain View ponds shall be located in three areas accessed from the Bay Trail spine within of Shoreline Regional Park to the south of the ponds (Exhibit E) and include:
 - a. A new 1,000-foot trail atop the improved levee and between Charleston Slough and Pond A1, ending in a new 830 square foot viewing platform with two sets of benches and two interpretive panels, and a fence to limit human and predator access to the larger restoration site;
 - b. A new 440 square foot viewing platform approximately 525 feet to the west of Permanente Creek, with 2 benches and two interpretive panels;
 - c. A new 1.1-mile spur trail built atop an improved levee on the eastern edge of Pond A2W and with a new 1,900 square foot viewing platform adjacent to San Francisco Bay, with two benches or large weathered logs that could be used as seating, and an interpretive panel;
 - d. The reconstruction, paving and striping of the portion of Bay Trail that runs along and atop the levee on the southern edge of Charleston Slough; and
 - e. A paved ramp connecting the above reconstructed trail with existing viewing platform.

2. **Ravenswood Ponds R3, R4, R5 and S5.** Public access improvements in the Ravenswood Ponds shall be located adjacent to Bedwell Bayfront Park and be accessed from the Bay Trail spine (Exhibit G) and shall include:
 - a. A new 0.5 mile trail built atop the improved north-to-south levee, with post and cable fencing on both sides, extending between the southeastern corner of Bedwell Bayfront Park and the existing Bay Trail adjacent to Pond R3; and
 - b. A 9,960 square foot viewing platform would be built near the mid-point of the new trail, with three sets of benches, interpretive panels, and a human and predator deterrent fence.
3. **Barrier-Free Access.** The USFWS will ensure that all Phase Two public access trails and amenities provide barrier-free access for persons with disabilities to the maximum feasible extent either during the implementation of Phase Two actions or within a reasonable period of time after the completion of Phase Two.
4. **Reasonable Rules and Restrictions.** The USFWS may impose reasonable rules and restrictions for the use of the public access facilities authorized herein to correct particular problems that may arise. Such limitations, rules, and restrictions shall have first been approved by or on behalf of the Commission upon a finding that the proposed rules would not significantly affect the public nature of the area, would not unduly interfere with reasonable public use of the public access areas, and would tend to correct a specific problem that the USFWS has both identified and substantiated. Rules may include restricting hours of use and delineating appropriate behavior.
5. **Protection of Nesting Areas.** If public access trails are immediately adjacent to sensitive nesting habitat for native and listed species, such as the western snowy plover or the least tern, that section of the trail shall include interpretive signage regarding the habitat sensitivities. If the USFWS determines that it is necessary to close that portion of the trail for the nesting season, it shall notify the Commission of the determination, and provide the expected duration of the closure, and the species of concern. Once notification has occurred, the USFWS shall post notice of the closure for the public and close trail during the nesting and rearing season. Once the rearing season is over the trail shall be reopened for the public.
6. **Maintenance.** The areas and improvements within the total Phase Two project area shall be permanently maintained by and at the expense of, the USFWS. Such maintenance shall include, but is not limited to, repairs to all path surfaces; replacement of any trees or other plant materials that die or become unkempt; repairs or replacement as needed of any public access amenities such as signs, benches, and trash containers; periodic cleanup of litter and other materials deposited within the access areas; removal of any encroachments into the access areas; and assurance that the public access signs remain in place and visible. Within 30 days after notification by Commission staff, the USFWS shall correct any maintenance deficiency noted in a staff inspection of the site.

- G. **Dredging.** In order to breach levees or widen existing breaches, dredging is necessary, and includes removal of sediment within an aquatic setting. To minimize impacts from dredging activities, the USFWS shall implement the following minimization measures:
1. Prior to dredging, sediment proposed for dredging and placement in an aquatic setting shall be tested to determine if the sediment quality is appropriate for the proposed placement site. The USFWS may use the Dredged Material Management Office (DMMO) procedures and forum to coordinate agency review of the sediment quality analysis and placement decisions.
 2. Dredging activities shall occur during low tide and between June 1st and November 30th each year to limit impacts to listed and native fish species, including longfin smelt and salmonids.
 3. The USFWS shall use mechanical equipment, such as an excavator or clamshell dredge unless further consultation with the appropriate resource agencies regarding potential entrainment of listed species is undertaken. If hydraulic dredging is proposed, the results of consultation with the resource agencies shall be provided to the Commission staff for review and approval prior to its use, and mitigation for potential entrainment may be required.
 4. Within 60 days of completion of dredging, a post dredge survey providing the final dimensions of the dredging activity, volume and placement of dredged sediment shall be submitted to the Commission staff.
- H. **Installation of Bridges.** The installation of bridges along Whisman Slough and the maintenance platforms over water control structures shall be installed with a vibratory hammer and inside a coffer dam to limit impacts to surrounding wildlife. Use of an impact hammer is allowed only when use of a vibratory hammer is infeasible and with a vibration reducing block.
- I. **Enhancement and Restoration Activities.** The purpose of Phase Two is to restore and enhance habitat, add public access features, and maintain or improve the current levels of flood protection within four areas of the SBSRP, and is incorporated into the overarching South Bay Salt Pond Restoration Project and its Adaptive Management Plan.
- a. **Adaptive Management Plan and Monitoring Activities.** The USFWS shall incorporate Phase II actions into the Adaptive Management Plan and monitor these ponds, sedimentation, water quality, hydrology, erosion, habitat development, and species response as described therein. A summary table of the required monitoring and studies is provided as Exhibit H. The *Landscape, Habitat and Biological Species Monitoring Plan* (H.T. Harvey and Assoc., October 14, 2008) monitoring, success criteria, and management triggers is incorporated herein by reference and required for the Phase II actions. By September 30, 2018, the USFWS shall provide an update to this document that specifies the monitoring activities that will be implemented in Phase II, and a list of monitoring reports that were completed in Phase I of the SBSRP Project.

- b. **Transitional Habitat.** A minimum of six months prior to completion of construction of transitional habitat in Alviso Pond A8S, Alviso-Mountain View Ponds A1 and A2W, and Ravenswood Pond R4 the USFWS shall provide a transitional habitat planting plan appropriate for each pond to Commission staff for review and approval. Commission staff shall provide comments and/or approval within 30 days of submission of the planting plan. The planting plan shall include at a minimum, the target habitat features for distinct transitional habitat (i.e., low, mid, and high marsh), square footage/acreage of each habitat type, types and number of plants proposed for each area (or hydroseeding), irrigation method and frequency (if any), and other pertinent information. This document should also include anticipated success of proposed planting techniques, and any adaptive measures, such as replacement planting or other measures to ensure habitat development.
 - c. **Monitoring and Adaptive Management.** The USFWS shall monitor the levee and ecotone habitat as proposed in the amendment to the Monitoring and Adaptive Management Plan for ten years after construction.
 - d. **Monitoring Reports.** Monitoring reports describing the data collected pursuant to the approved restoration plan shall be submitted annually beginning on July 1st, one year following the completion of restoration activities for each part (i.e., each pond) of the Phase Two improvements. Submission of monitoring reports shall continue for 10 years after construction at each Phase 2 action.
- J. **Habitat and Wildlife Protections.** The USFWS shall implement the following measures and best management practices to avoid and minimize impacts to existing habitats, including tidal marsh, open water and managed ponds and listed and native species, specifically, but not limited to Ridgway's rail (*Rallus obsoletus obsoletus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), western snowy plover (*Charadrius nivosus nivosus*), endangered California least tern (*Sternula antillarum browni*), California black rail (*Laterallus jamaicensis coturniculus*), burrowing owl (*Athene cunicularia*), Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*), the threatened Southern Distinct Population Segment (DPS) of North American green sturgeon (*Acipenser medirostris*), San Francisco Bay DPS of longfin smelt (*Spirinchus thaleichthys*), federally protected marine mammals, specifically harbor seals (*Phoca vitulina*), and species of special concern California brown pelican (*Pelecanus occidentalis californicus*), and nesting birds.
- 1. **Best Management Practices.**
 - a. **Employee Education Training.** Prior to commencing any major phase of work, all on-site employees (and subsequently any new employees), shall be trained by a qualified biologist in best management practices avoidance and minimization measures to protect habitat and native species that may be present on site, and specifically threated and endangered species protocols per the USFWS, NOAA's National Marine Fisheries Service (NMFS), and the California Department of Fish and Wildlife (CDFW).

- b. **Biological Monitor.** Per the USFWS and NMFS biological opinions, agency approved biological monitors shall be on site and present at the site of the work activity when listed species, including listed fish, may be present either in the work area or adjacent area. This biological monitor shall have the authority to stop work if the work activity has potential to harm listed species.

Habitat Protection.

- a. **Marsh and Upland Plant Protection During Construction.** The work authorized by this Letter of Agreement shall be performed in a manner that will prevent, avoid, or minimize to the extent possible any significant adverse impact on any tidal marsh; other sensitive wetland resources; and existing native vegetation. If any unforeseen adverse impacts occur to any such areas as a result of the activities authorized herein, the USFWS shall restore the area to its previous condition, including returning the disturbed area to its original elevation and soil composition. If the area does not revegetate to its former condition within one year, the USFWS shall seed or plant, as appropriate, all disturbed areas with appropriate vegetation consistent with plans approved by or on behalf of the Commission.

The USFWS shall employ measures to minimize impacts to wetland areas, including:

- (1) Minimizing all traffic in marsh/mudflat areas;
 - (2) Placing silt curtains around construction and work areas to differentiate between sensitive habitat areas and work areas;
 - (3) If walking in wetland habitat is necessary, the USFWS and its contractors shall follow the USFWS' 2014 "Walking in the Marsh: Methods to Increase Safety and Reduce Impacts to Wildlife & Plants (Service 2014b)" guidance. A route would be determined which would minimize the amount of foot traffic in the marsh and maximize the use of existing roads, trails, and boardwalks to the maximum extent practicable; and
 - (4) Carefully removing, storing, and replacing wetland vegetation that has been removed or "peeled back" from construction areas as soon as possible following construction.
- b. **Control of Invasive Species.** The construction activities have the potential to spread non-native invasive species, particularly perennial pepperweed (*Lepidium latifolium*) and cordgrass (*Spartina alterniflora* and *Spartina densiflora*), and other noxious weeds. Therefore, the USFWS shall take precautions to limit potential vectors through management of construction equipment (i.e., cleaning vehicles and equipment of vegetation, seeds, and soil prior to entering the work site). The levees, habitat islands, and transitional habitat shall be monitored for colonization of non-native cordgrass, star thistle, invasive pepperweed and other non-native invasive species, and be controlled through hand weeding and spraying of an appropriate herbicide when necessary, per herbicide label, and

California Department of Regulation requirements and Best Management Practices identified in the interim management plan and the USFWS South Bay Weed Management Plan BO.

Because of the significant effort to control non-native cordgrass, the USFWS shall work with the Invasive Spartina Project to conduct annual monitoring for the presence of non-native cordgrass, through field or genetic identification of representative samples of any cordgrass colonizing the Phase Two ponds. The Invasive Spartina Project and USFWS as the Federal lead, will work with partners to monitor and control non-native cordgrass in newly restored marshes.

Further, the USFWS shall continue to implement its predator management plan to address potential loss of species due to feral cats and other predatory invasive species.

3. **Species Protection.**

- a. **Limits on Marsh Activity.** To the extent feasible, when a construction or maintenance activity would take place within or within 200 feet of tidal marsh, the activity shall not occur within two hours (before or after) a tide of 6.5 feet or greater when the marsh plain is inundated to allow species (e.g. salt marsh harvest mice, wandering shrew, Ridgway's and black rails) to move to protective cover.
- b. **Protection of Rails.** To protect this listed species from harm or harassment due to construction and maintenance activities, any work that may occur within 700 feet of existing tidal marsh, shall be limited to September 1st through January 31st of any year, to the extent feasible. Exceptions to this condition may be approved based on findings of a USFWS protocol survey, concurrence from the USFWS, and review and approval by Commission staff. All other avoidance, minimization, and conservation measures described in the application and USFWS' biological opinion, dated November 21, 2017, for Ridgway's rail shall be implemented during project construction and maintenance.

Preconstruction surveys by the approved biologist shall be conducted to determine the presence of Ridgway's rails and black rails. If rails are determined to be present within the construction area, the USFWS shall determine if a 700-foot buffer is appropriate, or whether construction in that area should be delayed until after the nesting season.

- c. **Protect of Least Tern, Snowy Plovers, and Nesting Shorebirds.** No construction or maintenance activities shall occur within 600 feet of an active snowy plover nest and within 300 feet of an active least tern nest, or 200 feet of an active shorebird nest.
 - (1) **Public Access Closure.** Seasonal closures of trails immediately adjacent to nesting sites may be closed temporarily at the discretion of the USFWS and notification of Commission staff as required in Special Condition II-F.4.

- (2) **Pond Breaching.** Breaching of a managed pond to tidal action or flooding via water control structures shall not occur in any areas that have suitable nesting habitat for terns between March 1st and September 14th, unless the approved biologist has conducted a nesting survey and determines that the area is free of nesting terns, plovers and shorebirds.
 - (3) **Predator Control.** The USFWS shall take appropriate action to minimize predation of snowy plover and other shorebird nests with the Phase Two area.
- d. **Salt Marsh Harvest Mouse.** Under the supervision of the biological monitor, three weeks prior to any construction activity in suitable salt marsh harvest mouse habitat, vegetation and woody debris shall be removed using hand tools only as described in the application and USFWS' biological opinion. The removal of vegetation shall be limited to the minimum amount necessary to accomplish the construction action, and adjacent habitat shall remain intact to the extent feasible.
- (1) Mouse proof exclusion fencing, a minimum of twelve inches higher than adjacent vegetation and buried four inches underground, with fence supports on the work area side, shall be installed around the work area within 50 feet of suitable tidal marsh habitat immediately following high tide.
 - (2) If exclusion fencing has not been installed, no work will occur within 50 feet of suitable tidal marsh habitat within two hours before and after an extreme high tide event (6.5 feet or higher measured at the Golden Gate Bridge and adjusted to the timing of South Bay high tide).
 - (3) Wherever feasible, in areas of levee alterations, salt marsh harvest mouse corridors (areas of suitable vegetation of sufficient width to be protective of mice and shrews) between connected areas of salt marsh should be maintained on at least one side of the levee.
- e. **Protection of Native and Listed Fish.** The Phase Two ponds and surrounding area provide habitat for native and listed fish species. The following measures shall be implemented to protect these species during construction activities as appropriate:
- (1) **Use of Fish Screens.** In the event that dewatering activities occur in areas that salmonids or other listed fish, such as longfin smelt may be present, the intake pumps shall be appropriately screened as required by and according to the NMFS Biological Opinion and CDFW criteria for juvenile salmonids and/or longfin smelt.
 - (2) **In-Water Work.** Any construction or restoration activities that would occur in tidal waters shall be limited to June 1st through January 1st of any year to protect listed salmonids that may be present.

Coffer dam installation that requires dewatering on Coyote Creek/Slough, Guadalupe River/Alviso Slough, and Stevens Creek/Whisman Slough shall be limited to June 1st to January 31st of any year. Installation of coffer dams shall occur at low tide and shall allow fish passage through the downstream side, and then once fish have exited the enclosure, the coffer dam enclosure shall be completed.

- (3) **Levee Breach Activity.** Levee breaching will be limited to the period June 1st and January 31st of any year to protect juvenile steelhead.
- (4) **Water Control Structures.** To protect native and listed fish from entrainment, all water control structures shall be screened with “trash racks” in accord with CDFW and NMFS standards, or intake of Bay waters shall be limited to June 1st to November 30th of any year.

f. **Protection of Harbor Seals.** The USFWS shall implement the following measures to ensure that construction and various maintenance operations do not impact harbor seals:

- (1) Pre-construction surveys shall be conducted prior to initiating project construction at locations near known harbor seal haul-outs and pupping sites;
- (2) To the extent feasible, water control structures or breaches shall not be located at or adjacent to active haul-out or pupping sites;
- (3) If the survey identifies a harbor seal pupping area adjacent to or nearby a pupping site (i.e. 500 feet - distance subject to approval of NOAA), installation of structures, breaching, and subsequent maintenance seal sites such activities shall be conducted outside of the pupping season (March 1st to May 31st of any year) and the molting season (June 1st to August 30th of any year); and
- (4) If harbor seals are identified within 200 feet of haul-out sites, construction activities should be timed to avoid disturbance of seals, including molting season June 1st to August 30th of any year. If it cannot be timed to avoid disturbance, then a qualified biological monitor shall be present during construction activities near harbor seal haul-outs. A clearly-marked, protective buffer (200 feet wide, as measured from the edge of the haul-out site; distance subject to approval of NOAA) shall be established and maintained, and no construction personnel or equipment shall be allowed to enter this area while hauled out individuals are present.

K. **Water Quality Protection.** The USFWS shall ensure that project construction and operations are protective of Bay, managed ponds, and former salt pond water quality and is in compliance with the Water Board’s Water Quality Certification and Waste Discharge Requirements Order R2-2018-0020 issued for the project on May 9, 2018.

1. **Storm Water Management.** The USFWS shall develop and provide to Commission staff a minimum of 30 days prior to construction, a storm water management plan that describes how the Phase Two construction site would be managed such that erosion of soils and sediment are not mobilized during rainstorms or other flood events. This plan will include the use of erosion control materials (i.e., baffles, fiber rolls, hay bales, or temporary containment berms) and erosion control measures such as straw application or hydroseeding with native grasses on disturbed slopes; and floating sediment booms and/or curtains to minimize any impacts that may occur due to increased mobilization of sediments.
2. **Hazardous Materials and Spill Plan.** A minimum of 30 days prior to the start of construction, a hazardous materials handling and spill plan shall be provided to the Commission staff for review and approval. This plan may be incorporated into the Storm Water Prevention Plan, and shall include at a minimum, a description of staging area controls, hazardous materials storage, fueling limitations, and actions would be taken in the event of a spill, and incorporate preventative measures to maintain the work site free of hazardous materials spills. Absorbent materials would be maintained at each worksite in sufficient quantity to effectively immobilize the volume of petroleum-based fluids contained in the largest tank present at the site. Acceptable absorbent materials are those that are manufactured specifically for the containment and clean-up of hazardous materials. Sands or soil are not approved absorbent materials.

Further, this plan shall be provided to the biological monitor for his/her use in protecting habitat and species on site, and a copy of the plan shall be kept in an easily accessible and visible location on site for reference by contractors and their staff.

3. **Discharge Water Quality.** Water that is released from the Phase Two ponds, including as a result of breaching levees or releases from water control structures shall not exceed 44 parts per thousands (ppt) salinity or a pH of 8.5. The temperature of the release water shall be not greater than 20 degrees Fahrenheit above the temperature of the receiving waters. Water releases shall also have a minimum of 5.0 milligrams per liter (mg/l) dissolved oxygen. In the event that the Bay water into which the pond water is released is less than 5.0 mg/l dissolved oxygen, then the release water shall have the same or greater levels of dissolved oxygen.
4. **Effects on Bay Water Quality.** The release of any restoration or pond water shall not cause the Bay water at the point of release:
 - a. Dissolved Oxygen: 5.0 mg/L, minimum (When natural factors cause lesser concentrations, then these activities shall not cause further reduction in the concentration of dissolved oxygen).
 - b. Dissolved Sulfide: 0.1 mg/L, maximum.
 - c. pH: Variation from normal ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and 0.16 mg/L as N, maximum.
- e. Nutrients: Waters shall not contain biostimulatory substances such that promote aquatic growths at levels that would cause a nuisance or adversely affect wildlife.

In addition, turbidity of Bay water in any location more than 100 feet from the Phase Two boundary or release point, shall not increase by more than the following for more than 24 hours, to the extent practical when the Bay water background is greater than 50 NTU, an increase of a maximum of 5 NTU. When the Bay waters are greater than or equal to 50 NTU, a maximum of 10% increase over the background levels.

- 5. **Methylmercury Study.** USFWS shall continue to make the project site available to researchers and scientists and continue to encourage methylmercury research at the site. The USFWS or its partners shall prepare an integrated cross-discipline methylmercury impacts assessment report that will summarize all of the mercury-related studies to date and present them to the Commission staff by December 31, 2018. Once this document is finalized and prior to breaching new locations, USFWS, the Water Board, and BCDC will meet to discuss whether additional mercury monitoring requirements are necessary. Once consensus is reached by the regulatory agencies, an additional mercury monitoring plan shall be submitted to the Water Board and BCDC for review and approval within six months of the agencies' decision and recommendations.

In the event that in the future the USFWS has sufficiently studied the methylmercury issue such that the regulatory and resource agencies agree that further study is not needed, the USFWS shall provide a final report detailing the findings and conclusions of such studies and any recommendations for future restoration or enhancement activities to minimize methylmercury exposure and uptake by wildlife within one year of that determination.

- 6. **Use of Herbicides.** In the event that herbicides are used to control non-native vegetation, the herbicides use shall be appropriate to the site conditions where they would be applied. They shall be the minimum necessary and those that would cause the least harmful effects to non-target vegetation.
- L. **Relevant Monitoring Data.** The USFWS shall provide all study results and monitoring reports from other studies conducted on the site including but not limited to the US Geological Survey, U.S. Army Corps of Engineers, Ducks Unlimited, and State Coastal Conservancy, US Environmental Protection Agency and Wildlife Conservation Board-funded studies to the Commission staff for review and consideration.
- M. **Prevention of Flooding.** The USFWS shall assure that the restoration plan meets the requirements of the appropriate public works directors, flood control districts, and/or water agencies, with jurisdiction over the site and surrounding area and that are responsible for assuming adequate flood protection for surrounding communities. The

USFWS shall provide a letter to the Commission indicating that the review has been done and that inland areas will not flood as a result of the work shown on the plan. The Commission makes no warrants as to the adequacy of the flood protection provided by the USFWS project and is not responsible for any flooding that may result.

- N. **Abandonment.** If, at any time, the Commission determines that the improvements in the Bay authorized herein, have been abandoned for a period of two years or more, or have deteriorated to the point that public health, safety or welfare is adversely affected, the Commission may require that the improvements be removed by the USFWS, its assignees or successors in interest, or by the owner of the improvements, within 60 days or such other reasonable time as the Commission may direct.
- O. **Hold Harmless and Indemnify.** The USFWS agrees to perform all work under this agreement with reasonable diligence and precaution. Nothing herein shall hold the Commission, Commission members, Commission employees, and agents of the Commission from any and all claims, demands, losses, lawsuits, and judgments accruing or resulting to any person, firm, corporation, governmental entity, or other entity who alleges injuries or damages caused by work performed in accordance with the terms and conditions of this permit.

Further, The USFWS agrees to cooperate, to the extent allowed by law, in the submission of claims pursuant to the Federal Tort Claims Act against the United States for personal injuries or property damage resulting from the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his/her employment, arising out of this agreement.

III. Findings and Declarations

This amended consistency determination is given on the basis of the Commission's findings and declarations that the work authorized herein is consistent with the McAteer-Petris Act, the *San Francisco Bay Plan*, the California Environmental Quality Act, and the Commission's amended coastal zone management program for the San Francisco Bay for the following reasons:

- A. **Fill.** Most of the fill proposed in Phase Two would involve fill in former salt ponds, with a more limited volume of fill occurring in the Commission's Coastal Zone Management area 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* (emphasis added) 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...." The Salt Pond policies further state that, "[d]esign and evaluation of the project should include an analysis of: (a) the anticipated habitat type 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; [and] (b) potential fill activities, including the use of fill material such as sediments dredged from the Bay and rock, to assist restoration objectives...."

In March 2003, the State of California and the United States of America acquired 16,500 acres of commercial salt ponds in San Francisco Bay from Cargill, Inc. The purpose of the acquisition was to protect, restore and enhance the property for fish and wildlife, and to provide opportunities for wildlife-oriented recreation and education. According to the Consistency Determination, "[t]he project proposes to use fill to directly create and allow for the natural creation of habitat for special-status species, to enhance habitat by restoring tidal action to former salt ponds and provides for adaptive management to minimize any harmful effects from this fill in future phases of the project. In so doing, tidal marshes and tidal flats would be restored, increasing habitat, water quality, the surface area and volume of the Bay, would manage flood risk, and would conserve these areas to the fullest extent possible."

Enhancing the restored habitat at the Alviso Island Ponds involves removing levees between Pond A19 and A20, lowering levees on the north and south side of Pond A19, and creating two new breaches and widening an existing breach, also in Pond A19. These activities will generate 24,500 cy of excess soil and sediment that will be used to fill existing historic borrow ditches within the Island Ponds. Filling these low areas will facilitate better water quality and more rapidly restoring habitat in low lying areas.

The activity proposed in Alviso Ponds A8 and A8S, a muted tidal pond system, is constructing two areas of transition habitat that will connect the existing intertidal area to the adjacent upland, providing additional high marsh habitat and high tide refugia for species using these ponds. The creation of the transitional habitat in these locations provides added protection for the adjacent closed and capped landfill from tidal energy and wind/wave energy, and some ability of the future marsh to adapt to rising seas overtime. To build these two areas of transitional habitat, approximately 179,00 cy of fill from offsite is required.

Restoring the Alviso-Mountain View Ponds A1 and A2W to tidal wetlands would require fill, some of which would be provided by onsite levee removal, lowering and breaching, but will also require approximately 327,640 cy of fill brought from offsite sources. The improvement of two existing levees would require 170,000 cy of fill and the creation of the 32.6 acres of transitional habitat in each pond would require 235,000 cy. The improved levees will provide flood protection to the adjacent communities, and the transitional habitat will provide high tide refugia and some additional wave energy reduction at the existing southern levee. Without these two features, the restoration of these ponds would likely increase flooding at properties in the vicinity, including local roadways, parks and a light industrial area. During periods of flooding, the high tide refugia will be important to the native and listed species anticipated to use the restored wetlands and will provide some ability for habitats to transgress and adapt to rising sea level. In addition, the project proposes to construct up to five habitat islands in each pond, providing additional roosting, loafing and nesting habitat for certain species of birds. The construction would include importing sand or shell to provide an attractive surface for the desired birds. The remaining imported fill proposed includes infrastructure to provide public viewing platforms, aggregate for trail and road surfacing, access bridges, water control structures, and PG&E tower accessways and upgrades.

The Ravenswood Pond Complex enhancement and restoration includes restoring Pond R4 to tidal marsh habitat and includes 50,200 cy of fill in the former salt pond to create an area of transition habitat (intertidal to high marsh) that will connect to the adjacent upland habitat at Bedwell Park. A second intertidal and high marsh transitional habitat area will be constructed along an improved levee (between Ponds R3 and R4) and require approximately 81,000 cy of solid fill (4,700 cy for the levee, 76,300 cy for the transitional habitat). In addition, the levee between Ponds R3 and R5 and S5 would be improved. As in the Alviso-Mountain View Ponds, a habitat island will be created with material from the levee removal between Ponds R5 and S5. A portion of the outer levee of Pond R4 will be lowered as will the internal levees in Pond R5 and S5 to improve these managed ponds, providing some material for construction of the levee and habitat features. Pond R3 is to remain a dry pond with no direct tidal connection but with added gated connections to improve water management to support the endangered western snowy plover and requires no fill. Similar to the Alviso-Mountain View Ponds, the remaining fill proposed includes infrastructure to provide public viewing platforms, aggregate for trail and road surfacing, and water control structures.

As required by Section 66605 of the McAteer-Petris Act, Commission may allow fill only when it meets certain fill requirements including: (1) “the water area authorized to be filled should be the minimum necessary to achieve the purpose of the fill”; (2) “the nature, location, and extent of any fill should be such that it will minimize harmful effects to the Bay area, such as, the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment...”; (3) “public health, safety, and welfare

require that fill be constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters”; and (4) “fill should be authorized when the applicant has such valid title to the properties in question that he or she may fill them in the manner and for the uses to be approved.” Further, the Bay Plan Tidal Marshes and Tidal Flats policies state, in part, that “a minor amount of fill may be authorized to enhance or restore fish, other aquatic organisms or wildlife habitat if the Commission finds that no other method of enhancement or restoration except filling is feasible.”

1. **Priority Use Designation.** The proposed project would be located in areas that are designated as Wildlife Refuge priority use areas on *San Francisco Bay Plan* (Bay Plan) Map No. Seven. The project is designed to convert salt ponds and managed ponds to approximately 330 acres of tidal habitat, 1,400 acres of reversible muted tidal marsh, and 479 acres of reconfigured managed ponds. Upon completion, the project area would be included within the Don Edwards San Francisco Bay National Wildlife Refuge and actively managed by the U.S. Fish and Wildlife Service. The Commission has determined that the project is consistent with the priority use designation for the site.
2. **Minimum Amount Necessary.** The project proposes to use on site soils and sediment whenever it is available and appropriate for a specific use; however, there is not sufficient material available on site for all of the proposed project features. The proposal as described requires the import and placement of approximately 179,000 cy of soil/sediment at the Alviso Pond 8A and 8AS, 327,640 cy at the Alviso Mountain View Ponds and 310,300 cy at the Ravenswood ponds. The total fill is expected to be approximately 843,000 cy, with some of the fill being generated onsite to reduce the total volume of imported fill. The flood protection levees are being improved to meet current standards necessary to protect adjacent communities, parks and infrastructure and to accommodate sea level rise to mid-century. These levees will be wide enough to support future raising, and thus require the authorized volume of fill to initially construct them to the appropriate dimensions. The authorization section limits the volume of fill to that described, and its use within specific areas and project elements.

Habitat transition zones between marshes and uplands are locally scarce and provide critical habitat essential to sustaining five endangered species: two endangered animals, Ridgway’s rail (*Rallus longirostris obsoletus*) and salt marsh harvest mouse (*Reithrodontomys raviventris*), and three endangered plants, *Cirsium hydrophilum* var. *hydrophilum* (Suisun thistle), *Chloropyron molle* ssp. *molle* (soft bird’s-beak), and *Suaeda californica* (California sea-blite). The amount and locations of transition zone habitat were examined in the California Environmental Quality Act (CEQA) review process by proposing different alternatives with different transitional habitat features with varying slopes. In addition, the project partners held a design charrette to gain further insight into the benefits and best design for the transitional habitats. The maximum fill design included a lower slope (100:1), which would have

filled a greater portion of the salt ponds and required larger quantities of fill. To be responsive to the concern over larger amounts of fill, the cost of construction, and the potential for limited availability of fill, the USFWS determined that the 30:1 slope in the areas proposed, coupled with the habitat levees provided the most habitat benefits balanced with a smaller amount of fill. Thus, the USFWS believes that the project's transition habitat, habitat islands and flood levee improvement represent the minimum amount necessary to meet the goals of enhancing and restoring the habitat at each site while providing appropriate levels of flood protection to the adjacent communities. Special Condition II-B requires that the project sponsors submit the final plans for review and approval prior to construction. As a result of this review, staff can ensure that the volume of fill proposed would be consistent with the authorized volume and uses.

- 3. Effects on Bay Resources.** The habitat islands and transitional habitat proposed are necessary component of the marshes to provide high tide refuge for loafing, roosting and nesting, and habitat diversity within the marsh to support the goals of the project and native and migratory species. Providing these habitat features is consistent with the Baylands Ecological Habitat Goals Upland, which describes higher elevation habitat within the marsh and transitional habitat to upland areas as a critical component of adapting to rising seas and would likely provide a net benefit to Bay and migratory species.

Providing transitional habitat in the intertidal zone provides shallow water habitat for shorebird foraging. The experiment conducted as part of Phase One, found that ponds designed with nesting islands interspersed with shallow water foraging habitat provide benefits to shorebirds and piscivorous birds, such as terns. This information has been incorporated into the authorized project design informing the location and size of the proposed habitat islands. Special Condition II-C requires that the USFWS maintains best management practices while construction is ongoing, utilizes horizontal control points in the field so that the fill will be placed in appropriate areas for habitat transition zones as proposed, and limits stockpiling activities such that potential for mud waves or soil shifts will be minimized. Special Condition II-C.6 requires that offsite soil tests be performed to ensure that the soils brought on site do not have contaminants that would affect water quality or habitat.

In addition to Section 66605 of the McAtteer-Petris Act regarding effects of fill on water volume and circulation, the Bay Plan policies on water surface area and volume state that, "[w]ater circulation in the Bay should be maintained and improved as much as possible. Any proposed fills, dikes or piers should be thoroughly evaluated to determine their effects on water circulation and then modified as necessary to improve circulation or at least to minimize any harmful effects." Each of the proposed pond improvements relate to water circulation and improved water quality. The placement of breaches and water control structures were carefully chosen to improve water circulation, providing the necessary tidal prism for marsh habitat development in Ponds A19, A1, A2W and R4, and the ability to properly manage the water in Ponds R3, R5 and S5, for good water quality.

In areas of tidal breaches, the reestablishment of tidal connectivity has the potential to scour the tidal sloughs and decrease the stability of adjacent non-engineered levees. As part of the project's monitoring and adaptive management plan, monitoring will continue and includes observing the slough channels for excess erosion or impacts to adjacent levees and marsh. The adaptive management plan sets forth a process to address unforeseen issues and allows for actions to reduce further impacts. Special Condition II-D provides requirements on placement of riprap in two breach areas that were identified to potential have erosive conditions. These requirements allow for a limited amount of fill, but fill that is appropriate to limit erosion at the site.

4. **Public Health/Benefit.** The consistency determination states that “[t]he majority of the fill will be used to improve flood protection levees and to create wildlife habitat, including that for special-status species (i.e., nesting islands). Secondly, fill will also be used to create hydrologic conditions conducive to tidal marsh restoration, including ditch blocks, levee breaches, pilot channels, and levee lowering associated with restored ponds.”

Phase Two actions and improvements have been carefully planned to maintain existing flood control levees and reduce the potential for coastal flooding associated with increasing tidal marsh habitat by improving levees and incorporating transitional habitat that would further reduce erosive potential of waves during storms. Repairs and upgrades to existing levees prior to breaching the ponds and the installation of water control structures associated with the ponds, as well as regular maintenance, improve the site conditions to limit potential flooding. Further, the USFWS will continue to maintain these ponds as part of the Don Edwards National Wildlife Refuge. Special Condition II-C-13 requires the USFWS to maintain the improved levees so that they provide the flood risk reduction over time, and Special Condition II-M requires that the USFWS coordinate with the local flood protection agencies to meet their requirements for adequate flood protection.

5. **Valid Title.** The USFWS acquired the approximately 10,000 acres of former salt ponds in the Ravenswood and Alviso complexes in March 2003 from Cargill Salt Company using state, federal, and private foundation funds. The former salt ponds proposed for restoration or enhancement herein were included in that purchase, and the USFWS has provided documentation of its ownership to the Commission.

The Commission has determined that the proposed project includes the minimum amount of fill necessary for the project, minimizes effects on Bay resources, and would provide substantial public benefits, consistent with its law and policies regarding fill in the Bay/salt ponds.

B. Public Access

1. **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 the shoreline and views to the Bay currently exist at some portions of the SBSPR Project area as the Bay Trail spine passes immediately adjacent to the Alviso-Mountain View Pond and the Ravenswood Ponds. Both of these areas are bordered by large, regional parks that provide additional trails and viewpoints out to the Bay and across the restoration project. Public access is also available to other Alviso Complex Ponds through the Don Edwards National Wildlife Refuge with parking at its Environmental Education Center, the Alviso Marina County Park (immediately adjacent to the complex), Crittenden Lane, and Carl Lane (Sunnyvale Treatment Plant). Multiple users, including bicyclists, hikers on the Bay Trail, fishermen and duck hunters, access the region network of trails and recreational area surrounding the Phase Two project area.

Phase One of the SBSPR Project increased public access by providing approximately four miles of new trails throughout the Alviso and Ravenswood complexes, including a 2.5-mile year-round Bay Trail connection from Sunnyvale to Stevens Creek, a trailhead platform and restroom facilities at Ravenswood Pond SF2, and two raised viewing platforms, interpretive areas, and other amenities. Existing trails at Alviso Pond A16 and Ravenswood Pond SF2 were upgraded and provide ADA-accessible access. The SBSPR project sponsors and the City of Menlo Park together constructed a viewing area in Bedwell Park overlooking Pond R4 and Greco Island.

Phase Two of the SBSPR Project will provide additional public access at the Alviso-Mountain View and Ravenswood ponds and improve some of the existing public access features. Alviso Pond 8A has nearby regional trails, but no public access is proposed at this pond during Phase Two. A later phase will include linking an existing nearby trail to a spur trail to Pond 8A. No public access is proposed at the Alviso Island Ponds.

In the EIS/EIR, alternative public access was proposed including both longer and shorter trails and trails in other locations. The preferred alternative identified the proposed trails because this combination increased the length and number of available trails and included both a longer and shorter trail, increased the viewing points by adding four viewing platforms, and balanced the needs of wildlife in the nearby ponds. In addition the trails connected with the Bay Trail and provided ADA access accessibility. The proposal includes approximately 2 miles of new trail and raises portions of the existing Bay trail where the levee improvements require it.

The proposed actions at the Mountain View Ponds include three new viewing platforms and two new trails, a 1,000 foot long and 1.1 mile long, along existing and improved levees, each with connections to the existing Bay Trail spine, and the trail network inside Shoreline Park. The proposed actions at the Ravenswood Ponds would provide a new half-mile trail adding connections to the Bay Trail and an existing trail network inside the City of Menlo Park's Bedwell Park and a new viewing platform. The trails would be ADA accessible, and a minimum of 10 feet wide with a two-foot shoulder on each side, allowing for multiple uses.

The proposed viewing platform locations were carefully considered and take advantage of different settings. The Ravenswood viewing platform is particularly interesting because it would provide the opportunity to view three different habitat types while restoration is underway. The Mountain View spur trail takes advantage of Charleston Slough as a popular birding destination and provides a new overlook. The new trail proposed along Whisman Slough is unique in that it is a fairly lengthy trail and takes the visitor out to Bay edge, with views of open Bay in 180 degrees.

The USFWS notes that overall, the Phase Two habitat enhancement and restoration will increase habitat quality that would in turn result in increases in recreational potential of Don Edwards National Wildlife Refuge. The public is expected to be attracted to the site as species populations and composition increases throughout the restoration. Specifically, recreational use of the site for bird watching, hunting and fishing is expected to increase. Thus, the restoration activities can be expected to enhance access and recreation at the site and make it a more desirable destination for hikers, boaters, bird watchers, anglers and possibly hunters. Special Condition II-F requires that the USFWS provides and maintains the public access features described in the consistency determination and maintains barrier free public access. Special Condition II-C.12 requires the USFWS to notify the public of any necessary closure of public access features during construction activities and if feasible, provide alternate public access routes.

2. **Wildlife and Human Interactions.** The Bay Plan policies on public access state in part, “[p]ublic 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.” The policies further state, “[p]ublic access should be sited, designed and managed to prevent significant adverse effects on wildlife...Siting, design and management strategies should be employed to avoid or minimize adverse effects on wildlife, informed by the advisory principles in the Public Access Design Guidelines...” The policies further state, “[p]ublic access should be integrated early in the planning and design of Bay habitat restoration projects to maximize public access opportunities and to avoid significant adverse effects on wildlife.” Finally, the policies state, “[t]he Commission should continue to support and encourage expansion of scientific information on the effects of public access on wildlife and the potential of siting, design and management to avoid or minimize impacts.”

In addition, the Bay Plan policies on Salt Ponds state, in part, that in the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat, “[d]esign and evaluation of the project should include an analysis of...(g) siting, design and management of public access to maximize public access and recreational opportunities while avoiding significant adverse effects on wildlife.”

The Bay shoreline edge is a critical area for wildlife. Access to some wildlife areas allows visitors to discover, experience and appreciate the Bay’s natural resources and can foster public support for Bay resource protection. However, in some cases, public access may have adverse effects on wildlife (including flushing, increased stress, interrupted foraging, and/or nest abandonment), and may result in adverse long-term population and species impacts. The type and severity of effects on wildlife depend on many factors, including but not limited to site planning, buffers between wildlife and access, the type and number of species present, the intensity and nature of the human activity, and the inclusion of domestic animals. Potential adverse effects on wildlife may be avoided or minimized by siting, designing and managing public access. Several strategies exist to reduce or prevent adverse human and wildlife interactions including: using design elements such as paving materials and site amenities to encourage or discourage specific types of human activities; fencing to limit access or to discourage people from creating alternate access routes, using physical design features to buffer wildlife from human use such as bridges, boardwalks, moats, viewing platform and overlooks, and vegetation; managing the type, timing, and location of public use such as restricting specific activities or implementing periodic closures during sensitive periods such as breeding seasons; and incorporating education and interpretive elements.

The siting of public access in Phase Two of the SBSPR project is primarily on top of existing or improved levees and is limited so that much of the site is reserved for undisturbed habitat for sensitive and endangered species, such as the Ridgway’s rail or the western snowy plover. The trails end in viewing platforms signaling a destination and include interpretive signage which will provide information about the sensitive nature of the surrounding habitat. Viewing platforms that provide easy access for people to continue down levees after the trail has ended would be bordered by fences.

The Ravenswood Ponds have three types of proposed habitat, including tidal marsh, managed ponds, and enhanced dry salt pannes. While the proposed trail and viewing platform will provide the opportunity to experience all three habitats, various features in this area would assist in managing access in sensitive areas. For example, both sides of the spur trail between the three habitats would have a post and cable fence to minimize potential intrusion from the trail into the managed pond area. Pond R3, designated endangered snowy plover nesting habitat will have chain linked fencing along the Bay Trail to keep people, pets, and trash out of it, while keeping plover chicks in. The habitat islands in all ponds are being constructed with a significant buffer distance between trails and the islands to prevent flushing of roosting or nesting birds. In addition to these tools, the USFWS may, on an as

needed basis implement seasonal trail closures during nesting season. Studies regarding impacts of public access on wildlife conducted during Phase One of the SBSPR project has informed the proposed design and management of the public access features such that impacts to wildlife are minimized in Phase Two. Special Condition II-F.4 and F.5 enables the USFWS to impose reasonable rules and restrictions, and close portions of the public access during nesting season to avoid impacts to sensitive species or lifestages.

3. **Parking.** Phase Two of the SBSPR Project proposes new and improved trails and public access amenities but no new parking facilities. The majority of the new trails are adjacent to or nearby large regional parks, Bedwell Park at the Ravenswood Ponds, and Mountain View Shoreline Park at the Alviso Mountain View Ponds where there is ample existing parking in large lots. There is additional street parking available just outside of Shoreline Park and the Mountain View Ponds. The Phase Two access features connect to and are reached from these city park facilities. Although the Don Edwards National Wildlife Refuge does not own lands on which added parking could be provided, the Design Review Board did not comment on whether the project should provide additional parking opportunities. The Commission has determined that the proposed project is consistent with the Bay Plan policies regarding public access.

C. Natural Resources Policies

1. **Salt Pond, Tidal Marsh and Tidal Flats.** The Bay Plan Salt Pond policies state that “If the owner of any salt ponds withdraws any of the ponds from their present uses, the public should... buy these lands and restore, enhance or convert these areas to subtidal or wetland habitat. This purchase should be high priority, “because 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.”

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, methylmercury, 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 goal of the 50-year SBSPR Project is to restore and enhance a mix of wetland habitats, provide wildlife-oriented public access and recreation, and provide for flood management. It is the largest restoration project in the region and proposes to restore vast areas of the Bay to habitat for native, threatened and endangered species. As discussed, the project is carefully planned and is being conducted in stages in order to manage the existing habitat for species accustomed to the existing saline habitats that have dominated the South Bay for decades while these species adapt to changes in habitat structure and to reduce the impacts to water quality, sedimentation and low-lying areas that would occur if all the purchased ponds were breached simultaneously. The project partners have also engaged the largest stakeholder group in the region, including the public, local government, water and flood districts, the environmental community, the business community and the regulatory and resource agencies to plan the restoration in such a way that issues are addressed and support is provided for this large scale restoration project. In addition, and significantly, the project partners have incorporated the region’s vast scientific expertise, including the US Geological Survey, academia, and the resource agencies. The SBSPR science program includes a lead scientist for the project to conduct studies to address areas of uncertainty, monitor changes in habitat, water quality, sedimentation, and use an adaptive management approach that allows for a well-founded and stepwise approach to each restoration and enhancement activity. In addition, the scientific findings and outcomes will be broadly shared with the restoration and stakeholder community, deepening the region’s knowledge of restoration science and practice.

Phase Two actions, as previously described, include enhancing habitat at the Alviso Island Ponds and Alviso 8A Ponds, and restoring full tidal action to the Alviso-Mountain View Ponds and Ravenswood Pond R4, and enhancing habitat at the remaining Ravenswood Ponds, including a seasonally dry pond and managed ponds to support populations of native fish and wildlife, special status species, migratory waterfowl, shorebirds, and anadromous and resident fishes.

During Phase One restoration and enhancement actions, monitoring and technical studies were conducted to test restoration techniques on a small scale, thus allowing the project team to observe how habitat and wildlife developed, and how the tidal and sediment transport system responded. The lessons learned from Phase One have been incorporated into the Phase Two project, including addressing additional habitat needs from Phase One actions. This approach has proven successful with habitat developing and species adjusting to the changes in habitat.

Actions at the Alviso Island ponds are designed to address the slower development of habitat in Pond A19. Removing and lowering levees, filling in historic borrow areas and increasing the number of breaches and size of one existing breach will increase tidal connectivity on this site, allowing more sediment to accrete and habitat to develop.

Enhancement of the Alviso A8 ponds includes creating transitional habitat between the pond bottom, intertidal, and high marsh, as well as connecting the high marsh to adjacent uplands. Scientific experts have concluded that transitional habitat in marshes is a limiting factor for endangered species, particularly the Ridgway's rail, black rail and salt marsh harvest mouse who need high tide refugia to survive. The proposed transitional habitat provides significant acreage to support these and other species. In addition, during the Phase One monitoring period, more wave energy and erosion than expected was observed in front of the closed landfill. The transitional habitat will also provide a protective buffer and would reduce erosion of the shoreline here.

Enhancement activities at three of the four Phase Two Ravenswood Ponds are primarily focused on improving water quality and foraging opportunities for species. The endangered snowy plover uses Pond R3 for breeding and nesting, but has limited immediate access to foraging habitat. The installation of a water control structure will allow Refuge managers to control the amount and quality of water on site, and create a small, controlled "tidal slough" within this pond where small shorebirds, including snowy plover can forage. Installing water control structures and removing and lowering levees within Pond R5 and S5 provides greater connectivity between these two ponds and creates larger habitat for waterfowl and other birds. The habitat island size and slopes were designed in accord with the findings from the habitat island studies in Phase One and will provide roosting and loafing habitat, with some potential for breeding habitat for terns.

The restoration of tidal marsh at the Alviso-Mountain View Ponds and Ravenswood R4 Pond was chosen because of the high likelihood of successful passive sedimentation and vegetation due to the limited subsidence at these sites and their location within multiple sloughs and areas of existing tidal marsh. Like at Alviso A8 Ponds, the importance of transitional habitat and habitat islands to provide topographic diversity and high tide refuge was recognized and built into the restoration here. The locations of these features are in areas where physical access is available during construction yet would be buffered from human activity. These features will also provide reduced wave energy and will assist in limiting erosion across the site in areas of long wind fetch. Special Condition II-I incorporated the adaptive management plan that sets forth success criteria and studies to inform the evolution of the restoration project over all. In addition, the Adaptive Management Plan provides success criteria that Phase Two of the project should be measured against. The response of the enhancement and restoration action authorized here in will be considered as part of the adaptive management of the project and will inform future phases.

Monitoring of these areas remains an important part of the restoration and informs the adaptive management of the site. If monitoring identifies impacts that require action, the Monitoring and Adaptive Management provides a decision-making structure and potential actions that can be taken. If the evaluation determines a significant impact would result from an action, adaptive management measures to avoid the impact would be implemented, and ongoing monitoring would determine the effectiveness of that decision. The Adaptive Management Summary Table provided by the project sponsors includes, for each monitoring activity, restoration targets, expected time frames for decision-making, management triggers, and resulting potential management actions. Special Condition II-I requires implementation of the adaptive management and monitoring activities, thus meets the requirements of the salt pond and tidal marsh policies.

The project partners have incorporated flood risk management into the project. In carefully selecting the ponds for restoration and enhancement, the flood risk is reduced. Keeping some ponds as managed and seasonal wetlands provide flood risk reduction as they in themselves are barriers to tidal flooding. In areas where full tidal action is being restored, flood protection levees will be improved and raised to provide protection against future sea level rise. The flood protection aspects of this project are discussed later in this document. PG&E infrastructure within and adjacent to the restoration will be raised and extended to accommodate the increased tidal activity while remaining accessible for maintenance.

An increase in vegetated wetlands would potentially increase mosquito populations if the areas do not drain properly. The EIS/R states that the potential increase in mosquito populations as a result of the proposed project would be less than significant, as well-drained tidal marshes typically do not provide high-quality habitat for

mosquitoes. In addition, the project sponsors worked closely with the local Mosquito Abatement Districts in preparing the restoration plan to retain the Districts' ability to access the project areas for mosquito abatement actions.

A description of the public access proposed as part of the project and potential effects on wildlife is discussed under the public access section. Potential fill activities proposed as part of the project are discussed under the fill section.

In the process of restoring tidal action and hydraulic connectivity to the ponds in Phase Two, approximately 9,610 cy of sediment (2.59 acres) of levee material and fringe tidal marsh would be impacted by dredging and excavation to construct pilot channels and levee breaches. There is the potential for the scouring of adjacent tidal marshes, sloughs and channels and the erosion of nearby tidal flats once tidal action is restored to the ponds in the Phase Two project area. These impacts would potentially occur when levees are breached, however over time these sloughs would reach a new equilibrium and scour would cease. Regarding sediment supply, the project partners have engaged the US Geological Survey in studying this issue. The studies have found that at current suspended sediment levels, there is sufficient sediment in the South Bay system to support sedimentation at these sites such that the marshes should accrete rapidly. Over time, as sea level rises, this may change, but the far south bay has the highest sedimentation in the Bay, and therefore represents a great opportunity for restoring tidal marsh habitat. As part of the adaptive management plan, erosions of sloughs and mudflats would be monitored as required by Special Condition II-I.

2. **Fish, Other Aquatic Organisms and Wildlife.** The Bay Plan policies on Fish, Other Aquatic Organisms and Wildlife state, "[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 Game 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." The policies further state that "[t]he Commission may permit a minor amount of fill or dredging in wildlife refuges, shown on the Plan Maps, necessary to enhance fish, other aquatic organisms and wildlife habitat or to provide public facilities for wildlife observation, interpretation, and education."

As discussed, Phase Two of the SBSPR Project involves the enhancement and restoration of approximately 2,272 acres of former salt ponds to tidal marsh, seasonal and managed ponds providing habitat for a broad range of migratory shorebirds and waterfowl, marsh-dependent birds, mammals, fish and other aquatic

organisms, with a special focus special-status species such as the western snowy plover, Ridgway's rail and the salt marsh harvest mouse. This phase would also increase connectivity for wildlife and plants among habitats within and adjacent to the project site.

In the Phase Two EIS/R evaluation, potential impacts to species were identified and analyzed for each alternative proposed. For the preferred alternative, all potential impacts to biological resources and species were determined to be less than significant and, in some cases, beneficial. Three areas of controversy were identified, including: (1) the potential of the project to increase bioaccumulation of mercury; (2) tradeoff between species that use managed ponds versus marsh-dependent species; (3) that Phase Two might provide less than the maximum feasible public access; and (4) that salmonids or other native fish may become entrained in the managed ponds.

The bioaccumulation potential will continue to be an issue for wildlife throughout the South Bay due to the high mercury loads in this region (further discussed in the water quality section of this report). The opening of Pond 8A and 8AS increased available areas for mercury exposure, but this was an action that occurred as part of Phase One, and the action in Phase Two would likely sequester some of the mercury under the fill proposed transitional habitat. The Monitoring and Adaptive Management Plan as well as the South Bay Mercury Study continue to address this issue, and there is a growing expert opinion that restoration could and should proceed with caution and monitoring without detrimental effects to water quality. Special Condition II-K.5 requires monitoring of methylmercury to continue, or if a regional consensus is reached that monitoring of mercury is no longer necessary, allows the USFWS to provide a final report summarizing its findings and request relief from this condition.

At the outset of the restoration planning, the project team identified that habitat conversion and adverse impacts to some species would be an issue that needed to be addressed. The adaptive nature of this project considers restoring half of the ponds to tidal marsh and half to managed ponds in a continuum to up to ninety percent tidal marsh and ten percent managed ponds. The project partners carefully consider each phase of the restoration, based on monitoring of wildlife and how changes of the previous actions impact the number and diversity of species in the region. Phase Two is balanced in favor of tidal marsh because the ponds that are included in this phase are shallow and have the best likelihood of becoming tidal marsh before rising seas create greater challenges for this habitat type. Many of the species that will benefit most from marsh restoration are threatened and endangered. In addition, Pond R3 is being maintained as a seasonally dry pond specifically to promote western snowy plover habitat.

The balance of public access and wildlife needs continues to be a challenge. The EIS/EIR identified additional public access features that will not be implemented in Phase Two due to cost and the needs of wildlife. The Commission's public access policies take into consideration compatibility with wildlife, particularly in wildlife refuges when determining whether a project is proposing the maximum feasible public access consistent with the proposed project.

Entrainment of listed salmonids and estuarine fish in managed ponds continues to be an issue that is yet to be resolved. Some entrainment could be addressed through screening water intake structures, but this is an expensive requirement that involves significant maintenance due to fouling organisms and would add a significant burden to the project. Monitoring the managed ponds for entrained fish can inform this issue and determine whether screening would be a necessary protection for listed fish. To reduce the potential entrainment by water control structures, Special Condition II-J.3.e requires minimization measures to reduce impacts to listed fish species and requires use of fish screens during dewatering activities and installation of "fish trash racks" on water control structures to reduce entrainment potential.

The USFWS Protected Species Unit completed a programmatic Biological Opinion for the entire SBSPR Project, including Phase One actions in August of 2008. The USFWS programmatic opinion considered the potential impacts of the SBSPR project on the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*), endangered Ridgway's rail (*Rallus obsoletus obsoletus*), threatened western snowy plover (*Charadrius alexandrinus nivosus*), the endangered California least tern (*Sternula antillarum browni*) and the threatened California brown pelican (*Pelecanus occidentalis californicus*) and determined that the proposed project is not likely to adversely affect any of these species. Furthermore, the Biological Opinion found that the creation of tidal wetlands and managed ponds would greatly increase the amount of habitat that supports these species.

In November 2017, the USFWS completed its Biological Opinion for Phase Two actions and included conservation measures from the initial programmatic biological opinion and added measures more specific to Phase Two. Two measures address the potential for public access to affect wildlife, one requires signage to inform the public that they are not allowed in areas of sensitive habitat, and the other provides for seasonal closures of trails adjacent to sensitive species during the nesting season. Others require implementation of minimization measures, such as timing of certain activities with the tides, seasonal work windows, vegetation removal and fencing during construction activities that are protective of species. The conclusion of this biological opinion was that Phase Two, if implemented as proposed with the listed conservation measures, would not likely jeopardize the continued existence of the species listed and an incidental take statement include the expected level of harm and harassment, and provided the required exception. Special Condition II-J incorporates a number of provisions and minimization measures to reduce impacts to listed species per the USFWS biological opinion.

On May 24, 2018, NOAA's National Marine Fisheries Service (NMFS) completed its assessment of the Phase Two actions and issued its Biological Opinion, Incidental Take Statement and Essential Fish Habitat Consultation. This analysis of potential effects on the federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*) and the threatened Southern Distinct Population of green sturgeon (*Acipenser medirostris*) determined that the project would not likely jeopardize the continued existence of these species, nor is it likely to adversely modify their critical habitat. However, like the USFWS, NMFS determined that "take" of these species is likely to occur, and provided non-discretionary terms and conditions, as well as conservation measures. Conservation measures included seasonal work windows for in-water work, limits timing of breaches, closure of water intake structures during peak migration periods, other operational controls, and installation of modified trash barriers to screen water control structures to reduce potential entrainment. The Biological Opinion also notes the continued study of entrained fish and sets forth requirements for their protection during monitoring activities. This study may further inform concerns over entrainment in other ponds. As part of the incidental take authorization, NMFS included permission to tag listed steelhead to assist in understanding their lifecycle and use of the SBSPR Project area. Similarly, Special Condition II-J includes provision protective of listed fish species as does Special Condition II-G. The Commission has determined that the project is consistent with its laws and policies regarding natural resources.

- D. **Water Quality Policies.** The Bay Plan policies on water quality state that "[B]ay 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 that "[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 (Water Board) 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 policies also state that "[n]ew 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 and 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."

On May 9, 2018, Water Board issued its water quality certification and waste discharge requirements to construct Phase Two of the SBSPR Project. The Board Order included a discussion of the potential impacts of the project to Bay water quality and addressed them via provisions and requirements for monitoring and site management, as well as implementation of the proposed habitat mitigation and monitoring plan, entitled, "Monitoring/Adaptive Management."

Water quality concerns associated with the actions in Phase Two of the SBSPR project include: (a) erosion of sediment into Bay or pond water during construction activities; (b) potential contaminant release from imported fill soils; (c) the increased turbidity associated with dredging and breaching the different ponds; (d) changes in water management resulting in changes in salinity, low dissolved oxygen associated with shallow ponds, and temperature increases; and (e) release of onsite contaminants that have acute or bio-accumulative effects, such as mercury.

1. **Erosion Control.** Construction activities within and adjacent to the ponds have the potential to discharge soils, debris, and hazardous materials into the Bay and sensitive habitat. To prevent this from occurring, the USFWS will prepare a storm water pollution prevention plan (SWPPP) and provide it to the Water Board and Commission for approval. Once approved the USFWS would require all construction contractors to implement all its best management practices (BMPs) for controlling soil erosion and discharges of other construction-related contaminants and all activities that have the potential to impact water quality.

Best management techniques to be used include floating sediment curtains; the construction of temporary containment berms, baffles, and hay bales; and hydroseeding disturbed slopes with native vegetation. All of these actions are designed to limit erosion and sediment release and keep effects localized. It should also be noted that the consistency determination states that most of the construction will occur inside the ponds prior to being breached and away from the breach locations to prevent releases to adjacent sloughs or creeks. Special Condition II-K requires the development and implementation of a storm water management plan that will limit sediment and construction materials from entering the Bay. In addition, Special Condition II-C institutes construction activity controls that will limited construction debris from entering waterways or being left on site after construction is complete.

2. **Imported Fill and Contaminant Control.** As part of Phase Two approximately 843,000 cy of offsite soils would be imported to the project to improve flood protection levees, construct transitional habitat and habitat islands. Because offsite soils may be imported from various locations and excavation projects, it is necessary to ensure that the material being imported does not contain unacceptable level of contaminants that would impact water quality, habitat quality or the species that live there. To address this potential concern, the USFWS and project partners prepared a quality assurance project plan developed specifically for the Phase Two actions that was approved by the Water Board, entitled "South Bay Salt Pond Restoration Project Quality Assurance Project Plan for Fill Import to Operate and

Maintain Levees at Ravenswood and Alviso Salt Pond Complexes (January 12, 2017)” (Fill QAPP). In order to accept imported soils, the USFWS would ensure that the upland soil is tested and meets acceptance criteria in the Fill QAPP. Fill material not meeting those criteria would not be accepted for use on site. The data for upland fill material proposed for use in the project area would be provided to the agencies for review and approval according to the terms of the fill QAPP. Special Condition II-C.5 requires that all soils being imported to the site are tested for contaminants, and only clean soils are to be imported to the site.

3. **Turbidity Increases.** Dredging, particularly in shallow muddy tidal waters, can locally increase suspended sediment and turbidity temporarily. In areas of sensitive species, operational controls can minimize the effects of increased suspended sediment or limit the impacted area. Minimization measures can include dredging during periods of the year when fewer sensitive species are present or less sensitive periods in their life cycle, use of silt curtains, testing sediment to understand contaminant issues, using appropriate dredge equipment, and potentially dredging during low tide, though this can complicate the dredging activity. Special Condition II-K addresses specific water quality issues, including item 4, which requires water quality parameters be met prior to discharge into the Bay.

In addition, breaching the ponds would increase tidal prisms and potentially cause erosion of the adjacent sloughs, also potentially increasing turbidity. Regarding this potential issue the consistency determination states “Short-term channel incision would likely result in increased sediment suspension and water turbidity downstream of areas where erosion is taking place. However, appropriate site-specific design should ensure that this effect would be comparatively minor and that it would decrease and disappear as the system equilibrates as part of habitat restoration.”

4. **Water Management.** During Phase One, several ponds were converted from salt ponds to managed ponds and required sophisticated water management. During Phase One, the USFWS and its partners learned how water management could affect water temperature, dissolved oxygen levels, contaminant discharge, and nutrients. Lessons learned in Phase One will be applied to operations of proposed managed ponds in Phase Two. Phase Two includes converting managed ponds R4, A1 and A2W to tidal marsh by breaching, connecting Ravenswood seasonal ponds R5 and S5, and improving the Ravenswood seasonal pond R3, R5 and S5 through installation of additional water control structures and levee removal. These actions should improve water quality at these ponds, and the water control structures will allow the USFWS to continue to manage the ponds for wildlife habitat in addition to improved water quality.

For example, the consistency determination states “Within the Ravenswood Ponds at four locations, water control structures would be installed. Water control structures are proposed to allow management of water levels and quality in managed ponds. They would give Refuge staff more ability to avoid water quality

problems, algal blooms, or other adverse impacts. The water control structures would be pipe culverts with gates at each end to provide directional control.” Further, by providing the means for year-round control of water levels and some control of the salinities and other aspects of water quality in the ponds, these structures would allow for separate control of different types of managed pond habitat for various guilds of birds by allowing different water depths and elevations. This is particularly significant at Ravenswood Pond R3, which would be specifically managed to dry it early each spring to encourage nesting western snowy plovers, and R5 and S5 where the habitat island could be submerged if water levels were not managed.

- a. **Salinity.** High levels of salinity can impact wildlife, making habitat inhospitable to some species, but can also potentially increase uptake of metals into the water and biota. The USFWS and its partners will continue to monitor the managed ponds and for acceptable levels of salinity. Salinity of 44 ppt or less will not cause any significant or potentially significant impacts to any receiving waters. However, as a requirement of the Special Condition II-K and the Water Board’s self-monitoring plan, the USFWS is required to monitor water quality weekly June through November at discharge points and take appropriate action to avoid water quality impacts to receiving waters from high levels of salinity for Ponds R5 and S5. Such measures could include increasing water volume to dilute high levels of salinity that may occur due to evaporation during warm weather prior to releasing water to the Bay, and is protective of native fish.
- b. **Dissolved Oxygen.** The USFWS has experienced difficulty in the past in maintaining adequate dissolved oxygen levels at pond discharge points, particularly in the Alviso complex. Risk factors for both algae and dissolved oxygen in any particular pond complex are waters that are deep, slow (long residence times), rich in nutrients, rich in organic matter, subject to calm wind exposure, and highly transparent. The ponds also receive water that is already depleted in dissolved oxygen due to the shallow nature of the South Bay. Conversely, the lowest risk water bodies would likely be quickly turned over (short residence times), poor in nutrients, poor in organic carbon, windy and opaque. The Phase Two actions will restore 6 of the former salt ponds to tidal action, increasing tidal exchange and reducing the potential for low dissolved oxygen associated with managed ponds.

Alviso Pond A8 and A8S have been activity monitored and managed for dissolved oxygen and mercury. Water flow into and out of this pond has increased through opening of additional gates in the water control structure. This has reduced dissolved oxygen problems. With additional monitoring results, the USFWS and its partners hope to fully breach the pond complex in the near future to further increase tidal flow.

Proposed management of these Phase Two ponds will minimize high risk factors for low dissolved oxygen. Design elements, including hydraulic residence time, water depth, and mixing would be optimized to maintain dissolved oxygen levels that meet the RWQCB's Basin Plan Water Quality Objectives. Dissolved oxygen levels would be monitored in Ponds Alviso A8 and A8S and Ravenswood Ponds R5 and S5 and, if triggers are exceeded in the Adaptive Management Plan, then actions would be implemented to avoid significant impacts.

Pond R3, which is currently and will continue to be managed as a seasonal pond, will be managed for western snowy plover nesting habitat by actively draining it prior to nesting season and periodically refreshing the water in the borrow ditches and slough channels to enhance forage quality. Special Condition II-K requires that the USFWS manage the ponds such that the discharge of water to the Bay would not impact Bay water quality, habitat or the species that reside there. Further, the Water Board order requires additional monitoring of water quality within the ponds such that it will support native and listed species.

5. **Mercury.** Sediments in some of the ponds throughout the SBSPR Project area contain high levels of mercury contamination from the historic New Almaden mercury mine in the South Bay hills that has contributed large amounts of mercury to the watersheds downstream and the Bay. The Alviso complex ponds are an area of special concern because of their connection to Guadalupe Slough, and the associated accumulation of high levels of mercury. The remobilization of mercury-contaminated sediments into the water column may occur, either directly (e.g., during excavation of pilot channels) or indirectly (through increased sediment scour after a pond is opened to tidal action).

Although mercury exists in forms that are not hazardous, it can be transformed through natural processes into toxic methylmercury. Natural accretion processes in salt marshes continually supply fresh layers of mercury-contaminated sediments that release mercury in a form that can become biologically available to mercury-methylating bacteria and subsequently bioaccumulate in the food chain. The resulting concentration of methylmercury is dependent on numerous variables, including: redox potential, salinity, pH, vegetation, sulfur (including sulfate derived from gypsum layers in pond bottoms), dissolved organic carbon, nitrogen, and seasonal variations in each of the identified variables. The presence of high levels of mercury increase its availability for methylation. In 2006, the Water Board approved a total maximum daily load (TMDL) plan for mercury in San Francisco Bay which specifies that mercury levels cannot exceed 0.2 part per million (ppm) in large fish and 0.03 ppm in small fish. The Bay mercury TMDL also requires that activities avoid release of sediments into the Bay that have a median mercury concentration greater than 0.2 ppm, and that existing water quality objectives (0.025 – 0.050 µg/L) for mercury be attained.

As a result of the TMDL and the known high concentrations of mercury in the ponds and South Bay in general, the South Baylands Mercury Project was initiated and has been underway to improve understanding of mercury levels in the ponds, the impact of breaching ponds to the adjacent sloughs, and the associated mercury methylation. The study focuses on the Alviso area where mercury levels are known to be high, but also includes sampling sites elsewhere in the South Bay. The study measures mercury levels in the sediment, water column, and various bio-sentinel species; measures the bioavailability of inorganic mercury in sediments; and measures mercury methylation across salinity gradients in managed ponds, marshes, and other habitat types.

Pond A8 has been of special concern because it contains a significant amount of mercury-laden sediment, about 2 to 10 times that seen elsewhere in the Bay. Because of this, Pond A8 was designed for restoration to muted tidal pond habitat as part of Phase One. This action was implemented with the ability to reverse the breach in the event that unacceptable ecological impacts begin to occur from muted tidal exchange with surrounding sloughs. This pond has been the focus of intense scrutiny to ensure that significant impacts from the contamination do not occur. The Monitoring and Adaptive Management Plan contains details of proposed actions to remedy potential impacts should they occur. The studies to date have provided favorable results, where initial spikes in methylmercury occurred, but since the initial spike, the levels of mercury have decreased, both pond sediment and water samples and body burden of fish and birds in the study. The project is in the process of preparing an integrated cross-discipline report that will summarize all of the mercury-related studies to date and present them to the regulatory agencies by the end of 2018.

The Phase Two action for Pond A8 and A8S includes fill for construction of transitional habitat in a fairly small portion of the ponds. While construction may have a temporary impact through sediment disturbance, the placement of fill would likely sequester some of the mercury-laden sediments beneath it. The breaching of Alviso-Mountain View Ponds and Ravenswood Pond R4 to tidal action may temporarily increase mercury methylation and exposure; however, over time because these ponds have significantly less mercury than the Alviso A8 complex, and are also subsided, sediment is expected to accrete in these ponds further reducing mercury levels through burial, and providing a net benefit to water and sediment quality.

As part of the Monitoring and Adaptive Management Plan, analysis of mercury data collected from the South Baylands Mercury Project and other South Bay projects will be used to determine appropriate triggers to implement further management actions to prevent increases in methylmercury production and bioaccumulation. The USFWS and its SBSPR project partners are committed to continuing this work and

managing these ponds to minimize impacts from mercury. Special Condition II-K.5 requires the continuation of methylmercury monitoring through the use of biosentinals, water and sediment sampling, and that the USFWS provide monitoring reports to the Commission for review and consideration. The Commission has determined that the proposed project is consistent with its policies on water quality.

- E. **Dredging.** As part of Phase Two, sediment (and other material) would be dredged both from the Commission's Bay and Salt Pond jurisdictions to: (1) breach levees; (2) create pilot channels through existing marsh; (3) create an internal channel; and (4) lower or remove portions of external or internal levees. The project description describes placement of the dredged sediment from project actions in the following areas: (1) in the proposed restored tidal areas to create ditch blocks and fill historic borrow ditches; (2) build transitional habitat; (3) create nesting islands. The Phase Two project does not include importing dredged sediment from other projects.

Bay Plan policies on dredging state in part, that "[d]redging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time..." According to Dredging Policy Two, the Commission should authorize dredging when it can find that (a) it serves a water-oriented use or other important public purpose; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions; (d) the project will result in the minimum dredging volume necessary; and (e) the materials would be disposed of in accordance with Policy 3." Dredging Policy Three states in part, that "Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay..." Further, Dredging Policy Eleven discusses the US Army Corps of Engineers and Port of Oakland's Middle Harbor Enhancement Project – a large fill project using dredged sediment to create shallow water habitat. This policy requires that until Middle Harbor Enhancement Project is shown to be a success, only a "minor amount of dredged sediment" can be used in Bay habitat projects.

The Bay Plan Salt Pond policies state, in part, that any restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should include an analysis of "[p]otential fill activities, including the use of fill material such as sediments dredged from the Bay and rock, to assist restoration objectives..."

The dredged sediment during Phase Two is proposed for use onsite to assist in meeting restoration and enhancement objectives for habitat features. No dredged sediment is proposed for disposal within the Commission's Bay jurisdiction but is being beneficially used. Phase Two as described is a water-oriented use as it would restore tidal action to the project site and would increase tidal habitats of the Bay increasing resident, migrant and endangered species habitat, an important public purpose. To protect listed species, dredging activities would comply with the work windows provided in the resources agencies biological opinions for the project, as described in the natural resources section.

As discussed above, the Water Board issued its Waste Discharge Requirement for the project and required that the project sponsor utilize the Dredged Material Management Office process, off which the Water Board is a participating agency, to make suitability determinations for the sediment use prior to dredging activities. This project proposes to dredge sediment only to provide access to the tidal water of the Bay, manage water quality, and improve habitat function for wildlife, and is not navigation dredging and therefore the Long Term Management Strategy for the Placement of Dredged Sediment in the Bay Region (LTMS) Program is not applicable.

Regarding Dredging Policy Eleven, the volume of sediment proposed for habitat construction (approximately 10,000 cy), is minor, given both the volume and the scope of the project. The acreage of dredged sediment placement is small, and primarily confined to ditch blocks and historic borrow ditch fill, bringing the ditch to existing grade throughout the respective ponds. Special Condition II-G ensures that the USFWS complies with the Commission's policies on dredging, water quality and wildlife protection when undertaking dredging or breaching activities. The Commission has determined that the proposed project is consistent with its dredging policies and use of dredged sediment in habitat restoration projects.

- F. **Climate Change, Shoreline Protection and Safety of Fills.** 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...."

The Bay Plan Safety of Fills Policy Four states, "[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. The Commission may approve fill that is needed to provide flood protection for existing projects and uses...."

The Bay Plan Shoreline Protection Policies One and Four state "New shoreline protection projects and the maintenance or reconstruction of existing projects...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; [and] (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....” The policies also state, “[w]henever 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.”

Finally, the Bay Plan Salt Pond Policy Three states in part that any project for the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should be designed and evaluated based partly on an analysis of flood management measures.”

In conducting its sea level rise analysis for Phase Two, the USFWS and its partners used the upper limits of the June 2012 National Research Council (NRC) report on Sea-Level Rise for the Coasts of California, Oregon, and Washington projections, which estimated for the South Bay, are a range of 12 to 61 cm (0.39 to 2.0 feet) through 2050 and 42 to 167 cm (1.38 to 5.48 feet) through 2100, which were the appropriate and available projections to use at the time of preparation.

The USFWS noted as part of its analysis that during both the 50-year and 100-year projected periods the restored habitats, flood risk management components, and public access features all have different vulnerability to rising seas. The lifespan of each also varies as does necessary maintenance. Tidal marsh restoration projects are intended to be self-sustaining in the face of SLR as permanent features of the landscape. The inclusion of habitat transition zones to allow vegetated tidal marsh areas to migrate upward along with tidal elevations facilitates this migration, and many of the former salt pond levees around breached ponds are intended to degrade over time and will be allowed to do so.

That said, there are specific potential resilience and adaptation actions that could be implemented such as adjusting the restoration phasing to better match the sediment supply; maintaining levees along the bayfront to shelter restored tidal areas from wave energy and encourage marsh formation; removing levees along the bayfront edge to restore sustainable mudflats within the ponds; restoring natural shorelines such as shell breaches and wrack lines; using imported fill to raise pond beds to elevations conducive to vegetation establishment; and prioritizing restoration of less subsided ponds and/or ponds close to sediment supplies within the project area. In addition, modeling that incorporates rising seas, sediment availability and transport, and hydrology that can inform decisions regarding which ponds to restore based on expected resiliency and better plans for restoration actions. All of these actions are tools that would be considered in the adaptive management process that guides the SBSPP project.

Unlike restored tidal marshes, managed ponds require ongoing maintenance and repair of levees and water control structures throughout their live span which varies by pond. If monitoring indicates that pond-dependent wildlife are adjusting to the gradual loss of former salt pond habitats, additional managed ponds may be breached and restored to tidal marsh, making them more sustainable over time. Others may remain by continual maintenance and raising of external levees.

In considering the likely accelerated pace of sea level rise, the project partners selected ponds for Phase 2 that were not so deeply subsided that sediment accretion would occur at a sufficiently rapid rate to allow marsh formation ahead of, and then in pace with rising seas. The project has also been tracking and monitoring sediment accretion rates at other locations around the South Bay and used those rates to model this potential. This strategy is based on the understanding that restoration projects that are creating or supporting natural systems are less vulnerable to storm surge and wave activity. By using naturalistic designs, creating habitat transition zones, and planning for erosion, settlement, and other changes over time, the SBSPR Project explicitly plans for future storms and other extreme events.

Even with these considerations and planning, Phase Two actions at each pond cluster have areas that will remain vulnerable to rising seas. At the Alviso-Mountain View Ponds, the improved flood protection levees would be sustainable at 2050 and 2100; however, the Pond A1 western levee and Pond A2W eastern levee would only be effective through 2050, in which case the Pond A2W levee trail would also be impacted by rising seas. At Ravenswood, the habitat transition zones would be likely inundated at 2050 as would the R5/S5 east levee trail, however the higher elevation viewing platform would be available, as would the All American Canal levee and transitional habitat between the R4 tidal marsh and R3 seasonal pond. None of these features would be usable at 2100.

The Island Ponds would likely require little management to adapt. They are designed to become natural areas with primarily tidal marsh habitat and is expected to continue to keep pace with rising seas. Similarly, construction of habitat transition zones at Ponds A8 and A8S provide the benefits of added habitat complexity, prior to the full tidal restoration of these ponds. Because this is a deeply subsided pond, additional sediment supply would benefit and likely speed up the restoration.

The addition of habitat transition zones and establishment of tidal marshes would reduce wave run-up and storm surge and add a layer of protection greater than that based solely on levee elevation. The habitat transition zones would protect the upland areas, including the closed landfill, from erosion and reduce wave run-up and storm surge, while also providing initial habitat complexity. If sea level rise occurs more rapidly than planned, more upland fill material could be added to the tops of the transition zones to allow them to continue to provide benefits. As at the Island Ponds and A8 Ponds, the accretion of sediment and formation of tidal marsh is expected to keep pace with the current projections of sea level rise, but if this expectation is incorrect, there are adaptive management mechanisms for delivering upland fill material or dredge

material to the ponds to raise their bottoms and “catch up”. Those actions would need environmental review and permitting, and are not proposed in Phase Two actions, but such future augmentations are included as part of the project’s Adaptive Management Plan.

Regarding the flood protection features of Phase Two, the project seeks to maintain, and in some cases improve flood protection for surrounding communities and infrastructure. The Alviso-Mountain View Ponds includes raising the west levee of Pond A1 to isolate its waters from the adjacent Charleston Slough and raising the Coast Casey Forebay levee to 14.7 feet NAVD88 to provide flood protection landward of the restoration. As stated previously, Special Condition II-M requires that the USFWS coordinates with the local flood protection agencies to ensure the Phase Two actions provide sufficient flood protection, and that they provide evidence of this coordination to the Commission staff.

The trail on top of the improved levees would be sufficient elevated to be protected from rising Bay water beyond mid-century. However, depending on the adaptive management strategies developed as the restoration of the salt ponds proceeds, some of the spur trails that run on top of pond levees may be regularly inundated or lost as sea level rises. In the future these trails may need to be improved, moved, or abandoned if space is not available at elevations sufficient to accommodate expected sea level rise. The USFWS notes that should public access areas be lost to natural processes, including SLR, they might not be replaced where they were originally built, or at all, if replacement is inappropriate.

The SBSPR Project is closely coordinated with the South Bay Shoreline Project (USACE and Santa Clara Valley Water District and improvements to San Francisquito Creek restoration (San Francisquito Creek Joint Powers Authority) and SAFER Bay, which is in the planning process. The projects are in close collaboration to make sure the alignments of levee improvements and associated trails and habitat transition zones are leveraged to reduce adverse habitat impacts and provide greater protection at lower cost. The Commission has determined that the proposed project is consistent with the policies on climate change, safety of fills, and shoreline protection.

G. Review Boards

1. **Engineering Criteria Review Board.** The Commission’s Engineering Criteria Review Board (ECRB) did not review the proposed project.
2. **Design Review Board.** The Design Review Board (DRB) reviewed this project at its April 17, 2017 meeting. The DRB focused on three aspects of the public access: (1) interpretation and educational aspects of the project; (2) wildlife compatibility; and (3) adequate seating and the potential to provide more natural seating consistent with the setting. The Board suggested different interpretative methods including mapping, highlighting the salt ponds history and the modes of public access available, including: bicycle lanes, pedestrian trails, parking areas, and how the area fits into surrounding trails and parks. The Board also discussed information regarding the ecological benefits of the project and suggested a video feature and that

providing views at higher elevations would improve appreciation of the site. The applicant's representative discussed the planned audio interpretative history that could be accessed along the trail via smart phones. The Board agreed that the Wildlife Refuge's restriction on dogs was appropriate and expressed an interest in educating the general public on protecting wildlife in these sensitive areas. The applicant's representative provided information regarding the existing and planned education programs for the public that may interface with wildlife.

The Board turned its attention to the viewing platforms and seating proposed for the site. The Board appreciated proposed siting of the viewing platforms and agreed that each provided a unique view of the different aspects of the project. The Board suggested rotating the focus of seating area to provide additional viewing opportunities and that the applicants consider more natural seating opportunities in some areas, such as large timber or logs, stack and secured so that people could sit in a less formal way while viewing the restoration site. The project team will incorporate the Board's comments into the final design. The Design Review Board's suggestions have been incorporated in the seating elements at the suggested location.

- H. **Commission CZMA Program Jurisdiction.** The Commission's Coastal Zone Management Program encompasses areas of Bay, salt ponds, managed wetlands, shoreline band and certain waterway jurisdiction, as well as areas that may affect the coastal zone outside the Commission's McAteer Petris Act and Suisun Marsh Act jurisdictions. Government Code Section 66610(c) defines the Commission's salt pond jurisdiction as "...all areas which have been diked off from the bay and have been used during the three years immediately preceding the effective date of the amendment of this section during the 1969 Regular Session of the Legislature for the solar evaporation of bay water in the course of salt production." All of the ponds that are a part of Phase Two satisfy those criteria and therefore are subject to this amended consistency determination and will continue to be with the Commission's salt pond jurisdiction. Commission Regulation Section 10710 supports this conclusion. It states that areas once subject to Commission jurisdiction remain subject to that same jurisdiction even if filled or otherwise artificially altered. Further, Government Code Section 66610(a) defines the Commission's "Bay" jurisdiction as "...all areas that are subject to tidal action..." Phase Two will result in breaching some salt pond levees and opening them to tidal waters and therefore, will extend the Commission's "Bay" jurisdiction inland to Mean High Tide or, in areas containing tidal marsh, to the inland edge of marsh vegetation up to five feet above Mean Sea Level.
- I. **Environmental Review.** The California Department of Fish and Wildlife (CDFW) and the USFWS, as lead agencies for the overall project, prepared, circulated and, on March 11, 2004, certified a Final Programmatic Environmental Impact Report/Environmental Impact Statement (PEIS/R) for the South Bay Salt Ponds Initial Stewardship Plan. The same two agencies prepared and circulated a revised version of the final PEIS/R, which evaluates the potential impacts of Phase One actions. The Final PEIS/R was issued in December of 2007 and certified by the CDFW in March 2008.

In April 2016, the project partners finalized and certified the Final EIS/EIR for Phase Two of the SBSPR Project, selecting the environmentally superior and environmentally preferred alternative, which is the subject of this consistency determination request. As part of this review, no significant environmental impacts were identified. However, in the 2008 final Programmatic EIS/EIR, areas of controversy and issues to be resolved were acknowledged. The areas of controversy include: the potential effects on mercury bioaccumulation in the South Bay; trade-offs between habitat restoration and public access/recreation; trade-offs between acreage of tidal marsh and managed ponds; the priority of flood protection in areas of tidal restoration; availability of funding for adaptive management and monitoring; and potential entrainment of salmonids and other native fish in managed ponds. During Phase One, many of these areas were addressed through monitoring and research leading to changes in Phase Two actions. However, during the Phase Two FEIS/EIR comment period, the same areas of controversy were identified, and two additional areas were added to Phase Two, including whether to include Charleston Slough in the restoration of the Alviso-Mountain View pond cluster, and the inclusion of the Bayfront Canal and Atherton Channel in the Ravenswood pond cluster. In both cases, the inclusion was examined and determined that additional work was necessary on the part of local governments prior to the inclusion of either of these areas. In particular, inclusion of Charleston Slough increased the potential for listed salmonids to be entrained in an unscreened water intake structure for a local recreation area. Further, the restoration as proposed would not preclude their inclusion in the future, and therefore were not identified as an impact, but rather an area for potential future coordination as additional plans are developed.

The issues to be resolved are included in the proposed Adaptive Management and Monitoring Plan and targeted studies. In addition, restoration techniques and progress monitoring will inform decisions for future phases of the SBSPR Project. These issues were identified in the Tidal Marsh and Tidal Flats policy discussions in Section 3a.

- J. **Conclusion.** For all of the above reasons, the Commission finds that the benefits of the USFWS's South Bay Salt Pond Project Phase Two exceeds the detriments of the fill and the project will sufficiently protect fish and wildlife resources and maintain water quality in the Bay. Therefore, the Commission finds that this project within the coastal zone, as described herein and in the information submitted, and as conditioned is consistent with the Commission's Amended Coastal Zone Management Program for San Francisco Bay, as approved by the Department of Commerce.

IV. Standard Conditions

A. **Concurrence.** This Letter of Agreement shall not take effect unless the USFWS executes the original of this Letter of Agreement and return it to the Commission within ten days after the date of the issuance of the Letter of Agreement. No work shall be done until the acknowledgment is duly executed and returned to the Commission.

B. **Notice of Completion.** The attached Notice of Completion and Declaration of Compliance form shall be returned to the Commission within 30 days following completion of the work.

C. **Assignment of Interest.** The rights, duties, and obligations contained in this Letter of Agreement are assignable. When the USFWS transfers any interest in any property either on which the activity is authorized to occur or which is necessary to achieve full compliance of one or more conditions to this Letter of Agreement, the USFWS/transferrors and the transferees shall execute and submit to the Commission an assignment form acceptable to the Executive Director. An assignment shall not be effective until the assignees execute and the Executive Director receives an acknowledgment that the assignees have read and understand the Letter of Agreement and agree to be bound by the terms and conditions of the Letter of Agreement, and the assignees are accepted by the Executive Director as being reasonably capable of complying with the terms and conditions of the Letter of Agreement.

D. **Letter of Agreement Runs with the Land.** Unless otherwise provided in this Letter of Agreement, the terms and conditions of this concurrence shall bind all future owners and future possessors of any legal interest in the land and shall run with the land.

E. **Other Government Approvals.** All required permissions from governmental bodies must be obtained before the commencement of work; these bodies include, but are not limited to, the U. S. Army Corps of Engineers, the State Lands Commission, the Regional Water Quality Control Board, and the city or county in which the work is to be performed, whenever any of these may be required. This Letter of Agreement does not relieve the USFWS of any obligations imposed by State or Federal law, either statutory or otherwise.

F. **Built Project must be Consistent with Application.** Work must be performed in the precise manner and at the precise locations indicated in your application, as such may have been modified by the terms of the Letter of Agreement and any plans approved in writing by or on behalf of the Commission.

G. **Life of Authorization.** Unless otherwise provided in this Letter of Agreement, all the terms and conditions of this Letter of Agreement shall remain effective for so long as the Letter of Agreement remains in effect or for so long as any use or construction authorized by this Letter of Agreement exists, whichever is longer.

H. **San Francisco Bay Coastal Zone.** Any area located at the time the Letter of Agreement is granted or thereafter in the Coastal Zone of the San Francisco Bay Conservation and Development Commission (BCDC) under the Coastal Zone Management Act (CZMA) and thus presumptively subject to the jurisdiction of the BCDC under the CZMA shall continue to be located within the Coastal Zone of the BCDC notwithstanding the placement of any fill or the implementation of any substantial change in use authorized by this Letter of Agreement. Any area not located within the Coastal Zone of the BCDC that becomes, as a result of any work or project authorized in this Letter of Agreement, subject to tidal action shall be considered to be located within the BCDC's Coastal Zone and thus presumptively subject to the Commission's CZMA jurisdiction.

- I. **Changes to the Commission's Coastal Zone Under the CZMA as a Result of Natural Processes.** This Letter of Agreement reflects the location of the shoreline of San Francisco Bay when the Letter of Agreement was issued. Over time, erosion, avulsion, accretion, subsidence, relative sea level change, and other factors may change the location of the shoreline, which may, in turn, change the extent and location of the Commission's Coastal Zone for purposes of the CZMA. Therefore, the issuance of this Letter of Agreement does not guarantee that the extent and location of the BCDC's Coastal Zone will not change in the future.
- J. **Permission to Conduct Site Visit.** The USFWS shall grant permission to any member of the Commission's staff to conduct a site visit at the subject property during and after construction to verify that the project is being and has been constructed in compliance with the authorization and conditions contained herein. Site visits may occur during business hours without prior notice and after business hours with 24-hour notice.
- K. **Abandonment.** If, at any time, the Commission determines that the improvements in the Bay authorized herein have been abandoned for a period of two years or more, or have deteriorated to the point that public health, safety or welfare is adversely affected, the Commission may require that the improvements be removed by the USFWS, or its assignees or successors in interest, or by the owner of the improvements, within 60 days or such other reasonable time as the Commission may direct.
- L. **In-Kind Repairs and Maintenance.** Any in-kind repair and maintenance work authorized herein shall not result in an enlargement of the authorized structural footprint and shall only involve construction materials approved for use in San Francisco Bay. Work shall occur during periods designated to avoid impacts to fish and wildlife. The USFWS shall contact Commission staff to confirm current restricted periods for construction.