

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER No. R2-2018-0007

**WASTE DISCHARGE REQUIREMENTS AND WATER QUALITY CERTIFICATION for:
CALIFORNIA STATE COASTAL CONSERVANCY
BEL MARIN KEYS UNIT V WETLAND RESTORATION PROJECT – PHASE 1
MARIN COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter the Regional Water Board, finds that:

- 1. Purpose:** The Bel Marin Keys Unit V Wetland Restoration Project (Project) will restore 1,146 acres in northern Marin County. The Project's property is composed of two parcels: the 906-acre Bel Marin Keys Unit V (BMKV) parcel, owned by the California State Coastal Conservancy (Conservancy), and the 240-acre North Antenna Field (NAF), owned by the State Lands Commission (SLC) (Figure 1). These two parcels and the former Hamilton Army Air Field (Hamilton Field) parcel are officially part of the larger Hamilton Wetlands Restoration Project (HWRP). The Regional Water Board permitted restoration at the Hamilton Field as the HWRP in 2005 (Order No. R2-2005-0034).

Project activities are limited to Phase 1 activities at the BMKV parcel only; future phases will be implemented on both the BMKV and NAF parcels. This Order serves as waste discharge requirements (WDRs) and a federal Clean Water Act section 401 water quality certification (WQC) for Phase 1 activities.

- 2. Site Location:** The Project's property is bounded to the north by Novato Creek and the Bel Marin Keys housing development, to the east by San Pablo Bay, to the south by the Hamilton Field portion of the HWRP, and to the west by Pacheco Pond and associated flood control basins. The receiving waters for the Project site are Novato Creek and San Pablo Bay. The property is composed primarily of agricultural lands that were reclaimed in the late 19th and early 20th century from historic tidal marshes as well as "centennial" tidal marshes that accreted outboard of levees on Gold Rush sediments. With the exception of the federal flood control levee that separates the property and Hamilton Field, the levees that surround the property are largely unengineered; drainage ditches separate the NAF parcel from the BMKV parcel. Flood protection for the Bel Marin Keys housing development is currently provided by the BMKV levee along San Pablo Bay.
- 3. Discharger.** This Order only applies to the named Discharger, the Conservancy. However, it is likely that the U.S. Army Corps of Engineers (the Corps) will be involved in future phases of the Project, especially if those efforts involve the procurement and beneficial reuse of dredged sediment. Therefore, amendments to this Order to address future phases of the Project may also name the Corps as a Discharger. In the alternative, since the Corps and the Conservancy are both named as Dischargers in the HWRP Order, that Order may be amended.
- 4. Permit Application.** On October 24, 2016, the Regional Water Board received an application from the Discharger that serves as an application for WDRs and a WQC. In its application, the Discharger proposes to excavate borrow soils, construct a new flood control levee, and create

approximately 25 acres of seasonal wetlands on a 650-acre portion of the BMKV parcel (Figure 2).

- 5. Relation to the Other Similar Projects in the Vicinity.** The adjacent Hamilton Field project aimed to restore tidal habitats in subsided baylands through the beneficial reuse of clean sediment dredged from the Port of Oakland. Future phases of the BMKV Project also propose to use dredged sediment to raise substrate elevations to intertidal elevations suitable to support vegetated intertidal marsh and then breach the outboard levee along San Pablo Bay to restore tidal flows. The Discharger serves as the local sponsor for the Corps' 644-acre Hamilton Field restoration, which was completed and breached to tidal action in 2014. The Discharger acquired the BMKV parcel in 2001 with the intent of expanding the HWRP to include BMKV. Restoration planning documents developed by the Corps, including a General Reevaluation Report (GRR), a 1998 Final Environmental Impact Report/Environmental Impact Statement, and subsequent supplemental documents to address HWRP project changes and remediation, propose a long-term vision for the HWRP, including the BMKV properties, that includes a mosaic of seasonal wetlands, tidal marshes, and terrestrial-estuarine transitional habitats.

The lands that comprise the Hamilton Field restoration were formerly part of the Hamilton Air Force Base/Army Air Field, a military installation that was active through the 1980s. Hamilton Field facilities included the NAF, which was used by the Army for the incineration of unexpended small arms, fire suppression practice, shooting practice, and waste disposal. These activities resulted in the pollution of NAF soils with metals, fuels, PAHs, pesticides, dioxins/furans, solvents, and volatile organics, which are currently being remediated under the Corps's Formerly Used Defense Sites program. Soil contamination and cleanup activities are limited to the NAF parcel and do not affect the BMKV parcel. Due to the contamination, the NAF was not included in the existing HWRP permitted by the Regional Water Board in 2005. Future phases of the Project propose to restore the NAF to tidal action once site cleanup activities are complete.

- 6. Project Overview.** The Project proposes to restore tidal marsh and non-tidal seasonal wetland habitats to support a broad range of plants, fish and wildlife, including special-status, resident, and migratory species. The specific objectives of Phase 1 are to construct the flood control levee that will be necessary in order to facilitate dredged sediment placement and future outboard levee breaching and create and enhance seasonal wetland habitats on the site. The construction elements of Phase 1 of the Project are illustrated in Figure 2. Phase 1 of the Project will:
- Excavate borrow soils from approximately 434 acres of the BMKV site to a depth of roughly 2 to 3 feet (Table 1);
 - Use the borrow soils to construct a new 11,800-foot-long, 95-acre levee to protect landward areas of the BMKV project site and the Bel Marin Keys housing development from tidal flooding in future Project phases (Table 1);
 - Modify the BMKV property's existing drainage network such that surface water and groundwater from areas landward of the new flood control levee can be transmitted seaward of the levee and eventually to San Pablo Bay;
 - Modify a portion of the Novato Sanitary District's effluent pipeline where it crosses the new flood control levee alignment;

- Create 9 acres of new seasonal alkali meadow habitat;
 - Create 16 acres of new seasonal wetlands (ponds); and
 - Construct a 1,500-foot-long, 20- to 40-foot-wide permanent access road within an existing Pacific Gas and Electric (PG&E) easement along the northern end of the BMKV property west of the new Bayfront levee and south of Novato Creek.
7. The Corps initiated informal Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for Phase 1 of the Project on March 14, 2017. USFWS concurred with the Corps on December 28, 2017, that Phase 1 of the Project may affect, but is not likely to adversely affect, the federally endangered salt marsh harvest mouse (*Reithrodontomys raviventris*), federally endangered Ridgway's rail (*Rallus obsoletus*)¹, and federally threatened western snowy plover (*Charadrius alexandrinus nivosus*). This concurrence is based on: (1) the lack of suitable habitat currently available at the site; (2) the low likelihood for foraging individuals to be present in the area prior to the completion of Phase 1 construction; and (3) the implementation of the proposed conservation measures, which are included in Attachment A of this Order.
8. **Existing Conditions and Projected Habitat Changes.** The Project site is predominantly undeveloped, diked agricultural baylands crisscrossed by a grid of drainage ditches. The agricultural fields are used to grow oat hay and are regularly disced and kept dry via the drainage ditch network and a pump station at the site's eastern terminus that discharges to San Pablo Bay. Most of the agricultural fields are subsided to roughly between -1 and -4 ft NAVD88², well below local Mean Lower Low Water (MLLW, approximately +0.11 ft NAVD88). Future phases of the Project intend to import clean dredged material to raise substrate levels in the fields to intertidal elevations suitable for the establishment of tidal wetland vegetation (at least to Mean Tide Level, or +3.38 ft NAVD88). Portions of the site's northwestern corner (near Novato Creek and the Bel Marin Keys housing development) support seasonal wetlands in borrow depressions formed by past levee repair activities; these areas are outside the footprint of agricultural operations.

The permit application described in Finding 4 states that construction of the Project as proposed would disturb approximately 4.32 acres of jurisdictional waters of the U.S. and State, including 2.30 acres of existing wetlands and 2.02 acres (17,619 linear feet) of other waters such as ponds and drainage channels. Of this amount, 1.47 acres (3,000 linear feet) would be temporary and 2.85 acres (14,419 linear feet) would be permanent. The Project will result in a net loss of -0.79 acres of saline emergent wetland, a net gain of 24.10 acres of seasonal wetlands, and a net gain of 0.80 acres of drainage channel. 227 acres of agricultural fields west of a proposed flood control levee would remain in agriculture after completion of Phase 1. Table 2 summarizes pre-versus post-Phase 1 conditions and jurisdictional waters; Table 3 displays the Project site's projected net change in wetlands and other waters.

9. **Benefits of Wetland Restoration.** Upon completion of future phases, the Project will make a significant and valuable contribution to tidal wetland restoration and seasonal wetland restoration in the San Francisco Bay Estuary, which was recommended by the *Baylands*

¹ Note that the USFWS informal consult letter uses the older taxonomic classification of Ridgway's rail, the California clapper rail (*Rallus longirostris obsoletus*).

² North American Vertical Datum of 1988.

Ecosystem Habitat Goals Report (1999; updated 2015), the *Comprehensive Conservation and Management Plan* (CCMP - 1993, updated 2016), the *San Francisco Bay Joint Venture Implementation Strategy* (2001), and the *Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California* (2013). Agricultural baylands reclaimed from tidal wetlands often support seasonal wetlands that provide important habitat for resident and migratory shorebirds and waterfowl. These reports encourage the return of diked agricultural baylands to tidal marsh where feasible, while preserving and restoring adequate seasonal wetlands and ponds for birds. The Project will provide valuable tidal wetland habitats while preserving and enhancing seasonal wetlands where feasible.

10. Other Related Restoration Projects in the North Bay. To the north, the Marin County Flood Control and Water Conservation District is in the initial stages of planning for the tidal restoration of diked baylands north of Novato Creek. Approximately 4 miles to the north and northeast are a series of tidal restoration and enhancement projects spanning the Sonoma Baylands between the Petaluma River and Sonoma Creek, including Carl's Marsh, Sonoma Baylands, Sears Point, Tolay Creek, Lower Tubbs Island, Tubbs Island Levee Setback, and Sonoma Creek Marsh. Implementation of the overall Project will result in an almost continuous band of tidal wetland habitat along the entire western, northern, and eastern shoreline of San Pablo Bay.

Project Description

11. Overview of the Restoration Activities. Phase 1 of the Project is divided into seven primary elements, described below: Earthwork volumes for these elements are presented in Table 1; the locations of these elements are displayed in Figure 2.

- **Construction of a New Flood Control Levee.** Phase 1 of the Project would construct a new flood control levee landward of the site's existing bayfront levee. The new levee would be approximately 11,800 feet long, extending in a north-south alignment from the existing levee along Novato Creek's southwestern bank in the north to the N1/N2 levees separating the HWRP parcel and BMKV parcel in the south (Figure 2). The new levee alignment would be a minimum of 2,300 feet and a maximum of 6,700 feet from the existing bayfront levee and cover 95 acres within the BMKV property. The levee crest would have a design height of +12 ft NAVD88 but would initially be overbuilt to a crest elevation of +13 ft NAVD88 to account for post-construction settlement. The levee would have a crest width of 10 feet and "core" side slopes of 3:1 (H:V) on both sides. Wide, flat stability berms on either side of the levee core would provide counter-balancing weight beyond the toe of the levee's main core. The levee will generally have two typical cross-sections, one for the southern portion (approximately 74% of the overall levee length) and one for the northern portion (approximately 26% of the overall levee length). The southern portion will have a bayside stability berm with a 10:1 slope from elevation +10 down to +3 ft NAVD88. The landside stability berm would have a 10:1 slope from elevation +7 down to +3 ft NAVD88. Both stability berms will have 3:1 slopes below +3 ft NAVD88.

The northern portion will have a bayside stability berm with a 15:1 slope from elevation +10 down to +3 ft NAVD88. The landside stability berm would have a 29:1 slope from elevation +8 down to +3 ft NAVD88. Both stability berms will have 3:1 slopes below +3 ft NAVD88.

- ***Onsite Borrow for Levee Construction.*** The new flood control levee would be constructed from approximately 1.8 million cubic yards (cy) of soil borrowed from roughly 434 acres of agricultural fields east of the proposed flood control levee (Table 1). These fields would be excavated to depths of 2 to 3 feet. To access the borrow areas, between 8 to 16 crossings would be constructed across the fields' existing drainage ditches. Culverts within the crossings would range from 50 to 200 feet in length, and from 30 to 48 inches in diameter. Most of these ditch crossings would remain until the Project's future phases to provide the site's farmer access to the fields for continued agricultural operations after Phase 1. Excavation in the proposed borrow areas may result in creation of temporary wetland habitat; these areas would be restored to tidal wetland habitat upon breaching of the site to tidal action in future Project phases.
- ***Novato Sanitary District Pipeline Modification.*** The Novato Sanitary District (NSD) discharges secondary-treated effluent to San Pablo Bay via a 54-inch diameter reinforced concrete pipe operating under pressure. This pipeline modification would not change the discharge point of the outfall. Within the Phase 1 Project limits, the pipeline alignment runs generally parallel to and along the north side of the HWRP's N1/N2 levees (located on the southern border of the BMKV property) and extends east to a submerged outfall in San Pablo Bay. The new flood control levee would tie in to the north-facing slope of the N1 levee, passing over the existing NSD pipe. To accommodate the new levee tie-in, the Conservancy would abandon 900 feet of the existing outfall pipe within the levee footprint and install a new 63-inch High Density Polyethylene bypass pipe to convey NSD effluent up and over the new flood control levee (Figure 3). The new pipeline would follow a new alignment to the north of the existing alignment, passing through the new flood control levee approximately 300-feet north of the existing pipe. This would require revisions to the location of the NSD easement within the Project's property. A lateral service connection, or secondary diversion pipe, would be installed in the NSD pipeline, on the landward side of levee tie-in, to provide water for moisture conditioning of the levee fill material, dust control during project construction, and potential use as a source of irrigation water for plant establishment.
- ***Site Drainage Modifications.*** The proposed new flood control levee would bisect several existing agricultural ditches and obstruct the flow of surface runoff from the landside of the proposed levee. To facilitate post-construction drainage, two new drainage ditches would be constructed: a 5,700-foot-long ditch west of the new levee and a 16,500-foot-long ditch east of the new levee (Figure 4). Similar to existing conditions, the new drainage ditches would route runoff towards the collector channel at the center of the site. A new pump station would be installed in the collector channel on the west side of the new levee to convey runoff over the levee and into the collector channel on the bayside of the new levee. North of the new pump station, a drainage ditch would not be constructed. Instead, runoff from the new flood control levee would drain to the newly created seasonal wetlands west of the levee (see below).
- ***Seasonal Wetland Complex Creation.*** The Phase 1 Project would create shallow depressions (seasonal ponds) and associated high ground to provide a seasonal wetland complex in the northwest portion of the Project site, west of the new flood control levee. Approximately 16 acres of seasonal ponds would be created over roughly 36 acres of land (Figure 2). The shallow depressions would be approximately 0.5 to 1 acre in size

with a maximum depth that would vary between 1 to 2 feet and 2 to 4 ft below the existing ground surface, respectively, in the northern and southern portions of the complex. The seasonal ponds would be fed by a combination of surface water and shallow groundwater; water levels would be managed using hand-operated weirs to facilitate ponding, vector control, and weed management. The ponds would be vegetated with appropriate native seasonal wetland species such as saltgrass (*Distichlis spicata*), field sedge (*Carex praegracilis*), common spikerush (*Eleocharis macrostachya*), and/or dwarf spikerush (*Eleocharis parvula*).

- **Alkali Meadow Creation.** The Phase 1 Project would use grading and planting to expand and enhance the existing saline wetland/open water area immediately east of the Bel Marin Keys South Lagoon by 9 acres (Figure 2). Vegetation community types in the newly created alkali meadow would mostly consist of salt grass (*Distichlis spicata*) meadow but also may include creeping wild rye (*Elymus triticoides*) meadow, nontidal saltmarsh plant species, and other alkali wetland species such as field sedge (*Carex praegracilis*), fat-hen (*Atriplex prostrata*), alkali heath (*Frankenia salina*), pickleweed (*Sarcocornia pacifica*), and jaumea (*Jaumea carnosa*).
- **Re-Alignment of the Pacific Gas & Electric Access Road.** To provide continued access to two power transmission towers owned and operated by PG&E, a permanent access road would be constructed within the existing PG&E easement on the northern end of the Project site, west of the new flood control levee and south of Novato Creek (Figure 2). The access road would be 1,500 ft long and approximately 20 to 40 ft wide. A 30-ft-long, 18-in-diameter culvert may be located under the new access road adjacent to the landside levee toe. This culvert would divert stormwater north of the PG&E access road into the newly created seasonal wetland complex.

12. Project Schedule and Time Frame. Project construction would be completed over two years. Construction would progress from south to north, with an anticipated construction start date of spring 2018 and completion date of December 2020. The levee construction would span two years, with approximately half the final levee height and/or volume constructed in the first year and the final height and volume achieved in the second year. During the first construction year, the new flood control levee would be constructed to an estimated elevation of +8 feet NAVD. The new levee's tie-in to the Novato Creek levee would also be constructed during the first construction year. Concurrent with the progression of levee construction and as existing drainage ditches within the levee alignment are filled, the new drainage ditches would be constructed on the east and west sides of the new flood control levee. During the second year, the levee would be constructed to an elevation of +13 feet NAVD. To minimize potential for disturbance to seasonal wetlands and species that will be attracted to the wetlands for habitat once constructed, the seasonal wetlands and associated access roads would also be constructed in year two. Subsequent levee height adjustments would be made over the next 20 years to address anticipated settlement of the levee crest.

13. Mitigation Incorporated into the Project Design as Conservation Measures. The USFWS concurrence letter provides measures to minimize environmental harm and protect biological species and waters of the State potentially affected by the Project. These conservation measures are incorporated into this Order and are included in Attachment A.

14. Sources of Sediment. Phase 1 of the Project will largely balance cut and fill onsite; the only

material that may be imported to the site would be sediment placed as a “cap” (wetland substrate) in the seasonal wetland restoration/enhancement areas. The anticipated volume of wetland substrate to be imported is approximately 13,000 cubic yards. No material will be exported from the site during Phase 1. During future Project phases, the Discharger intends to import clean dredged material suitable for beneficial re-use to the site, to raise the elevations of fields east of the new flood control levee to intertidal elevations. The target elevation for material placement will likely be at least Mean Tide Level (MTL, +3.38 ft NAVD88), so that low marsh vegetation such as native cordgrass (*Spartina foliosa*) can begin to establish. For high marsh vegetation such as pickleweed (*Sarcocornia pacifica*) to establish on imported sediments, substrate elevations must be higher, up to the Mean Higher High Water (MHHW, +6.21 ft NAVD88). Potential sources of sediment include maintenance dredging activities throughout central and northern San Francisco Bay. The Discharger has not yet determined the amount of dredged material proposed to be imported to the site, nor has it secured commitments from potential dredging projects to deliver their material to the BMKV site. During Phase 1 and future Project phases, the Discharger will be required to submit data characterizing the quality of all imported dredged material (Bay sediments) proposed for use as fill before placement at the Project site in accordance with Specification B of this Order.

- 15. Monitoring.** The Discharger developed a Draft Conceptual Monitoring and Adaptive Management Plan for the Project, which is cited in the Final Supplemental Environmental Impact Report/Environmental Impact Statement (FSEIR/EIS, see Finding 22 below). This draft plan proposes a framework to evaluate the overall Project and does not describe specific monitoring methods, locations, or performance criteria to evaluate the execution of Phase 1. Finding 22 and Provision 1 below describe how the Discharger must develop a stand-alone plan to monitor and adaptively manage the Project features to be constructed in Phase 1, primarily the new flood control levee and seasonal/alkali wetlands.

The Regional Water Board is a lead agency in the development and implementation of a San Francisco Bay Regional Wetland Monitoring Program (Wetlands RMP), a proposed coordinated and comprehensive long-term monitoring program with the goal of monitoring bayland wetlands to ensure their on-going management, restoration, and protection. Development and implementation of a San Francisco Bay Regional Wetland Monitoring Plan is also called for in the CCMP, updated as the Estuary Blueprint in 2016. Phase 1 monitoring and monitoring for future Project phases may be conducted collaboratively through a Wetlands RMP.

- 16. Basin Plan.** The San Francisco Bay Basin (Basin Plan) is the Regional Water Board’s master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes implementation programs to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), the Office of Administrative Law, and U.S. EPA, where required.
- 17.** The Basin Plan includes the following beneficial uses for San Pablo Bay and its tributaries: Ocean, Commercial and Sport Fishing; Estuarine Habitat; Wildlife Habitat; Fish Spawning and Migration; Preservation of Rare and Endangered Species; Shellfish Harvesting; Industrial Service Supply; Navigation; Water Contact Recreation; and Non-contact Water Recreation.
- 18.** The Project is consistent with the goals of the State Wetlands Policy and California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993), which is

incorporated in the Basin Plan, that includes ensuring “no overall loss” and achieving a “...long-term net gain in the quantity, quality, and permanence of wetland acreages and values...”. Senate Concurrent Resolution No. 28 states that “it is the intent of the legislature to preserve, protect, restore, and enhance California’s wetlands and the multiple resources which depend on them for benefit of the people of the State.” Section 13142.5 of the Water Code requires that the “[h]ighest priority shall be given to improving or eliminating discharges that adversely affect ...wetlands, estuaries, and other biologically sensitive areas.”

19. The Project is consistent with State Water Board Resolution No. 68-16, “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (Antidegradation Policy). The Antidegradation Policy states that discharges to existing high quality waters will be required to meet WDRs that will result in the best practicable treatment or control of the discharge necessary to assure that (a) a condition of pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained. Implementation of the Project is not expected to adversely affect existing or potential beneficial uses of the water, and existing water quality will be maintained or improved. Any potential impacts to beneficial uses are addressed under this Order.
20. This Order does not allow for the take, or incidental take, of any special status species. The Discharger shall use the appropriate protocols, as approved by the California Department of Fish and Wildlife (CDFW) and USFWS, to ensure that the Project not impact the beneficial use of the Preservation of Rare and Endangered Species.
21. **California Environmental Quality Act (CEQA).** CEQA requires that all projects approved by State agencies be in full compliance with CEQA. As lead agency, the Discharger certified the Final Supplemental Environmental Impact Report/Environmental Impact Statement (FSEIR/EIS) for the Bel Marin Keys Unit V Expansion of the Hamilton Wetland Restoration Project (April 2003). The FSEIR/EIS analyzed a concept-level schematic of BMKV restoration. In August 2017, the Discharger published an Addendum to the Final Supplemental Environmental Impact Report/Environmental Impact Statement (AFSEIR/EIS) for the Bel Marin Keys Unit V Expansion of the Hamilton Wetland Restoration Project, which certified that the Phase 1 Project would not result in any new impacts not previously disclosed in the certified FSEIR/EIS; nor would it result in a substantial increase in the magnitude of any significant environmental impact previously identified. Accordingly, the AFSEIR/EIS did not identify any new mitigation measures. The FSEIR/EIS and AFSEIR/EIS have been considered and relied upon in preparation of this Order.

The Regional Water Board, as a responsible agency under CEQA, finds that all environmental effects have been identified for Project activities that it is required to approve and that the Project will not have significant adverse impacts on the environment provided the Discharger: 1) finalize and implement the Draft Conceptual Monitoring and Adaptive Management Plan (Appendix K of the FSEIR/EIS), and 2) implement the CEQA mitigation described in Chapter 4 of the FSEIR/EIS.

22. **Water Quality Issues under CEQA for the Project.** The FSEIR/EIS found the following potentially significant or significant and unavoidable impacts to water quality from the Project:
 - Impact WQ-1: Potential for Degradation of Surface Water and Sediment Quality due to Increased Methylmercury Formation Potential

- Impact WQ-6: Potential Diesel Pump Spills into San Pablo Bay
- Impact WQ-8: Potential Changes to Circulation in Pacheco Pond
- Impact WQ-9: Potential for Degradation of Receiving Water Quality due to Dredged Material Placement
- Impact WQ-10: Potential for Spills from Fueling of Pump(s) at Pump Station

All of these impacts are associated with future phases of the Project, not Phase 1 activities. Nonetheless, the FSEIS/EIR describes mitigation measures for each of these impacts that reduce their impact to less than significant. The Regional Water Board concurs that impacts to water quality from Phase 1 activities will be less than significant provided the Discharger adheres to the water quality monitoring and protective measures identified in the Order.

The FSEIS/EIR found that construction-related activities during all Project phases, including Phase 1, would expose bare soil to erosion by water and wind and could increase erosion and sedimentation rates above pre-construction levels (Impact G-4). The Discharger is therefore required to develop and implement necessary water quality control measures in a Storm Water Pollution Prevention Plan (SWPPP) that prescribes temporary and permanent measures to control accelerated erosion and sedimentation in disturbed areas during and after construction.

23. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to adopt WDRs for the Project and provided them with an opportunity to submit their written views and recommendations. The Regional Water Board heard and considered all comments pertaining to the WDRs for the Project in a public meeting.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations, and guidelines adopted thereunder, that the Discharger, its agents, successors, and assigns shall comply with the following:

A. PROHIBITIONS

1. Discharges of water, material, or wastes not otherwise authorized by the Order are prohibited.
2. The direct discharge of wastes to surface waters or surface drainage courses is prohibited, except as authorized by this Order.
3. It is prohibited to import dredged materials without first following the testing and screening protocols described in Specifications B.1 and 2. Movement of onsite material within the Project site is allowed.
4. The activities subject to these requirements shall not cause a condition of pollution or nuisance as defined in sections 13050(i) and (m), respectively, of the Water Code.

B. SPECIFICATIONS

Dredged Material Screening Procedures - Data characterizing the quality of all imported dredged materials (Bay sediments) proposed for use as fill shall be submitted for Regional Water Board staff review and approval before placement at the Project site. The review shall be coordinated through the multi-agency Dredge Materials Management Office (DMMO), of which the Regional Water Board is a member.

Sediment characterization and placement shall follow the protocols specified in:

1. The DMMO guidance document, "Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region" (Corps Public Notice 01-01, or most current version), with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Attachment B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,
2. Regional Water Board May 2000 staff summary report, "Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines," or most current revised version. These levels are shown in Table 4, which are approved for the wetland surface criteria within the top three feet of the Project.

Modifications to these procedures may be approved on a case-by-case basis, using guidance from the two reports mentioned above, pending the Discharger's ability to demonstrate that the dredged materials are unlikely to adversely impact beneficial uses.

C. RECEIVING WATER LIMITATIONS

1. Project activities shall not cause:
 - i. Floating, suspended, or deposited macroscopic particulate matter or foam in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in receiving waters, or to unreasonably affect beneficial uses;
 - ii. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - iii. The temperature of any cold or warm freshwater habitat to be increased by more than 5 degrees Fahrenheit above natural receiving water temperature, unless a qualified biologist can demonstrate that such alteration in temperature does not adversely affect beneficial uses;
 - iv. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - v. Toxic or other deleterious substances to be present in concentrations or quantities that will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or that render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waters shall not cause violations of the following limits to be exceeded in receiving waters at any one place within 1 foot of the water surface:
 - i. 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
 - ii. Dissolved Sulfide: 0.1 mg/L, maximum
 - iii. pH: Variation from normal ambient pH by more than 0.5 pH units
 - iv. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and
0.16 mg/L as N, maximum
 - v. Nutrients: Receiving waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause

nuisance or adversely affect beneficial uses.

3. Turbidity of the receiving waters shall not increase by more than the following to the extent practicable:

| Receiving Waters Background | Incremental Increase |
|-----------------------------|----------------------------|
| < 50 NTU | 5 NTU maximum |
| ≥ 50 NTU | 10% of background, maximum |

4. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by both the State's Porter-Cologne Water Quality Control Act and the federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

D. PROVISIONS

1. **Project Monitoring and Reporting.** The Discharger shall submit a Monitoring and Adaptive Management Plan (MAMP) for Phase 1 of the Project. This MAMP can be a final version of the conceptual draft MAMP for the entire Project presented in the FSEIS/EIR or a stand-alone document focused on Phase 1 activities. The MAMP shall include monitoring methods, locations, performance criteria, and a reporting schedule for Phase 1 activities for a minimum of five years. The MAMP shall address all Phase 1 design elements, including (but not limited to):
- i. Geotechnical condition and settlement of the new flood control levee (including an as-built survey)
 - ii. Erosion control measures on the new flood control levee
 - iii. Presence/absence of temporary seasonal wetlands within levee soil borrow areas
 - iv. Hydrologic performance (depth and duration of flooding) of the seasonal wetlands and alkali meadows
 - v. Vegetation communities in the seasonal wetlands and alkali meadows, including native and non-native/invasive species
 - vi. Bird use of the seasonal wetlands and alkali meadows
 - vii. Condition and operation of water control structures in the seasonal wetlands
 - viii. Condition of culverts under new road crossings

The MAMP shall be consistent with the monitoring framework discussed in the Phase 1 Biological Assessment (ESA, 2016) and include measures to collect appropriate baseline data to illustrate physical and ecological change between existing and future (post-breach) conditions. The Discharger shall submit the MAMP to the Regional Water Board for acceptance by the Executive Officer. All monitoring data shall be posted to EcoAtlas (<http://ptrack.ecoatlas.org>) according to the schedule described in the MAMP.

It is expected that the Discharger may choose to implement the MAMP and comply with any requirement of this Provision through a collaborative effort (i.e., Wetlands RMP, see finding 16 above) to conduct or cause to be conducted the required monitoring.

Due Date for the MAMP: at least 90 days before construction starts.

2. **TAC.** The Discharger shall continue to utilize the existing HWRP Technical Advisory Committee (TAC) to assess Project progress and inform the development of future Project phases.
3. **EcoAtlas.** It has been determined through regional, State, and national studies that tracking mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's No Net Loss Policy for wetlands, the State needs to closely track wetland losses, gains, and mitigation/restoration project success. Therefore, the Discharger will use the California Wetlands Standard Form to provide project information related to impacts and mitigation/restoration measures. Project Tracker online data entry forms and instructions are available at <http://ptrack.ecoatlas.org>. Project information concerning impacts and mitigation/restoration will be made available on EcoAtlas (<http://www.ecoatlas.org>) and on the California Wetlands Portal at the web link: <http://www.californiawetlands.net>.

Due Date for California Wetlands Standard Form: 60 days after adoption of this Order.

4. **Submitting Monitoring Reports.** Monitoring reports shall be submitted either by uploading them to the Project's Files & Links library on EcoAtlas (<http://ecoatlas.org/regions/ecoregion/bay-delta/projects>) or via email. The Regional Water Board project manager shall be notified if monitoring reports are uploaded to EcoAtlas. In addition to uploading the Project to Project Tracker (<http://ptrack.ecoatlas.org/>) and monitoring reports to EcoAtlas (<http://ecoatlas.org/regions/ecoregion/bay-delta/projects>), the Discharger shall also send monitoring data and reports to the Regional Water Board as one hard copy and one electronic copy. In the case of large files, the electronic copy shall be sent on a CD or DVD or placed on an FTP site.
5. **Invasive Plant Species.** The Discharger is required to minimize invasive³ plant species on the Project's property, especially those that threaten sensitive native seasonal wetland and tidal marsh communities and functions. The MAMP described in Provision 1 shall describe monitoring methods, performance criteria, and potential corrective actions to minimize the establishment and spread of invasive species on the Project site. Some of these species, such as yellow star-thistle (*Centaurea solstitialis*), already occur onsite; others, including perennial pepperweed (*Lepidium latifolium*), Australian bentgrass (*Agrostis avenacea*), Russian thistle (*Salsola soda*), and stinkwort (*Dittrichia graveolens*) are present on adjacent properties and are known to colonize perennial and seasonal wetlands in bayland habitats.
6. **Erosion and Sediment Control Plan.** The Discharger shall, before construction begins, submit a Storm Water Pollution Prevention Plan (SWPPP), acceptable to the Executive Officer, and shall implement required Best Management Practices (BMPs) to prevent water pollution from restoration activities. Emergency response, routine maintenance, and preventative activities should be included in the SWPPP.

Due Date for SWPPP: at least 45 days before construction starts and updated annually prior to October 15.

³ "Invasive" includes plant species listed by the California Invasive Plant Council at <http://www.cal-ipc.org/ip/inventory/>

7. **Start-up and As-Built Reports.** The Discharger shall notify the Regional Water Board by email when construction starts and ends and submit an as-built report to note any changes that have occurred from the original design.

Due Date for Notification: when construction begins, and ends.

Due Date for As-Built Report: no more than 60 days after construction is complete.

Due Date for As-Built Report: 90 days after construction is completed.

8. **Construction Operations.** Construction shall last no longer than two years and will occur between April and December. The Discharger must obtain prior approval from the Executive Officer to extend the construction period or alter the construction window with appropriate SWPPP BMPs.

During construction, the Discharger will adhere to conservation measures to protect water quality and species as set forth in this Order. The Project covers protective measures for special status species including the endangered Ridgway rail, salt marsh harvest mouse, soft bird's beak, and others, which are listed in the FSEIS/EIR. To the extent feasible, the Discharger shall avoid construction activities in or near marsh habitat suitable for the salt marsh harvest mouse, Ridgway rail, or other protected species.

The Discharger shall minimize in-water construction during periods when listed species may be present. Construction activities shall be scheduled to avoid the local nesting periods of the special status wildlife species, to the extent practical. When construction is conducted during the nesting period of a special status species known to be present, the activities shall be restricted to maintain a 700-foot buffer between heavy equipment and the nesting sites. Construction activities shall be scheduled in such a way so as to limit the period of disturbance in a particular area to as brief a time window as is practical.

9. **Mosquito Abatement Provision.** The site is in the jurisdiction of the Marin-Sonoma Mosquito and Vector Control District. The Discharger shall coordinate with the district during design, implementation, and operation phases of the Project to mitigate for any increases in potential mosquito breeding habitat.
10. **General Provisions.** The Discharger shall comply with all the Prohibitions, Specifications, Limitations, and Provisions of this Order immediately upon adoption of this Order, unless otherwise provided.
11. The Discharger shall notify the Regional Water Board immediately whenever violations of this Order occur.
12. The Discharger shall remove and relocate any wastes that are discharged at any sites in violation of this Order.
13. The Discharger shall implement and comply with appropriate BMPs to prevent and control erosion and sedimentation.
14. No debris, soil, silt, sand, cement, concrete, or washings thereof, or other construction related materials or wastes, oil or petroleum products or other organic or earthen material shall be allowed to enter into or be placed where it may be washed or pumped from the site by rainfall

or runoff into Novato Creek or San Pablo Bay. When operations are completed, any excess material shall be removed from the work area and any adjacent area where such material may be washed into Novato Creek or San Pablo Bay.

15. Construction contractors working on the Project shall be required to provide their employees with spill prevention and response training and shall be required to have spill response equipment available at the job site, as directed by the Discharger. Contractors shall provide double containment for any hazardous materials or wastes at the job site. Contractors shall be prepared to respond to any spill immediately and to fully contain spills in the area, including any open-water areas.
16. The Discharger shall maintain a copy of this Order at its headquarters at 1515 Clay Street, Suite 1000, Oakland, CA 94612. The Order shall be available at all times to site personnel. The Discharger shall ensure that all individuals working on the site, including all contractors and sub-contractors, are familiar with the contents and requirements of this Order and with all relevant plans and BMPs.
17. The Discharger shall permit the Regional Water Board or its authorized representative, upon presentation of credentials:
 - i. Entry onto premises on which wastes are located and/or in which records are kept.
 - ii. Access to copy any records required to be kept under the terms and conditions of this Order.
 - iii. Inspection of any monitoring equipment, construction area(s), or monitoring method completed as part of the Project.
 - iv. Sampling of any discharge or surface water covered by this Order.
18. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, State, or local laws, regulations or rules of other programs and agencies; nor does this Order authorize the discharge of wastes without appropriate permits from this agency or other agencies or organizations.
19. The Discharger shall immediately notify the Regional Water Board by telephone or email whenever an adverse condition occurs as a result of the proposed discharge or construction activities. An adverse condition includes, but is not limited to, a violation or threatened violation of the conditions of this Order, significant spill of petroleum products or toxic chemicals, or other events that could affect compliance. Pursuant to Water Code section 13267(b), a written notification of the adverse condition shall be submitted to the Regional Water Board within two weeks of occurrence. The written notification shall identify the adverse condition, describe the action(s) necessary to remedy the condition, and specify a time schedule for performance, subject to modification by the Regional Water Board.
20. The Discharger shall halt work activities if dead or dying fish, or fish exhibiting stress, are observed within 1,000 feet of work activity or discharge. The Discharger shall immediately assign a qualified biologist to investigate the cause of the problem, and to identify an acceptable response, if the cause is determined to be the work activity or discharge. The Discharger shall immediately report all incidents of dead, dying, or stressed fish, as well as prescribed action plans, to the Regional Water Board by calling (510) 622-2369 and to the

California Office of Emergency Services at (800) 852-7550.

21. All reports pursuant to this Order shall be prepared under the supervision of a suitable professional in the State of California.
22. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the Water Code and section 3867 of Title 23 of the California Code of Regulations.
23. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to Title 23, section 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
24. The Discharger has paid in full the application fee for the Project of \$200.00, which was received by the Regional Water Board on October 24, 2016. An annual fee for WDRs pursuant to section 13260 of the Water Code is required.
25. The Regional Water Board may modify, or revoke and reissue, this Order if present or future investigations demonstrate that the discharge(s) governed by this Order shall cause, have the potential to cause, or shall contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters. The Regional Water Board may reopen this Order to review results of the Discharger's and Regional Water Board staff's studies and new data on section 303(d)-listed contaminants and decide whether effluent limits should be revised.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 14, 2018.

Bruce H. Wolfe
Executive Officer

References

Tables: 1-4

Figures: 1-4

Attachment A

References

- Environmental Science Associates. 2016. Joint Aquatic Resource Permit Application for WDR/401 Water Quality Certification for Bel Marin Keys Unit V Wetland Restoration Project, Sonoma County. Prepared for the California State Coastal Conservancy.
- Goals Project. 1999. Baylands Ecosystem Habitat Goals Report First Reprint. U.S. Environmental Protection Agency, San Francisco, CA, and San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
- Goals Project. 2015. The Baylands and Climate Change: What We Can Do. Baylands Ecosystem Habitat Goals Science Update 2015 prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. California State Coastal Conservancy, Oakland, CA.
- Jones & Stokes Associates, Inc. 1998. Hamilton wetland restoration plan, volume II: final EIR/EIS. December. (JSA 98-033.) Sacramento, CA. Lead agencies: California State Coastal Conservancy, Oakland, CA, and U.S. Army Corps of Engineers, Environmental Planning Section, San Francisco, CA.
- Jones & Stokes. 2003. Final supplemental environmental impact report/environmental impact statement (SEIR/EIS) Bel Marin Keys Unit V expansion of the Hamilton Wetland Restoration Project. April. (J&S 02-296.) Oakland, CA. Prepared for the California State Coastal Conservancy and U.S. Army Corps of Engineers.
- San Francisco Bay Regional Water Quality Control Board. 2000. Staff Summary Report (draft). Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines.
- San Francisco Estuary Partnership. 2016. Comprehensive Conservation and Management Plan (CCMP) for the San Francisco Estuary (Estuary Blueprint). Oakland, CA.
- U.S. Fish and Wildlife Service. 2005. Endangered Species Consultation for the Proposed Wetland Restoration Project at the Former Hamilton Army Air Field, City of Novato, Marin County, California (Biological Opinion).
- U.S. Fish and Wildlife Service. 2013. Recovery plan for tidal marsh ecosystems of Northern and Central California. U.S. Department of the Interior. Sacramento, CA.

TABLES

Table 1. Summary of Cut (Excavation) and Fill for Phase 1 of the Bel Marin Keys Wetland Restoration Project

| Project Element | Acres | Square feet | Total Excavation Amount (cubic yards) | Total Fill Amount (cubic yards) |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Project Area | 906 | 39,465,360 | 1.8 million (net) | 1.4 million |
| New Bayfront Levee | 85.95 –Total footprint | 3,702,600 | None | 1.4 million – permanent fill material from Borrow Areas, excavated seasonal ponds, excavated alkali wetlands, excavated new levee drainage ditches (levee fill would be compacted) |
| Borrow Areas | 146 – North Borrow Area 288 – South Borrow Area | 6,372,000 12,557,000 | 1.7 million – excavation to construct New Bayfront Levee | None |
| Seasonal Wetland Complex Creation | 16 | 696,960 | 60,000 – excavation to create seasonal wetlands | None |
| Alkali Meadow Creation | 9 | 392,040 | 20,000 – excavated to create alkali wetlands | None |
| Novato Sanitary District Effluent Pipeline | 0.10 – new HDPE pipe 0.003 – new outfall connection | 4,250 120 | 4,000 | 3,000 (backfill around new pipe) 450 (fill existing pipe to abandon) |
| Site Drainage Modifications | 0.53 – new drainage ditch west of new levee 1.43 – new drainage ditches east of new levee 0.05 – new levee pump station and pipe connection 0.001 – culvert at PG&E Access Road 0.02 – culvert at Borrow Area Access, mid-levee | 23,160 62,400 2,000 50 800 | 16,000 – new west drainage ditch 10,000 – new east drainage ditches | 0 (no net/permanent fill for culvert at Borrow Area Access, mid-levee) |
| Access Roads | 0.75 – PG&E Access Road (permanent) 0.59– total area of fill for access crossings within Borrow Areas (8-16 temporary or permanent ditch crossings) 0.04 – total area of fill for access crossings to alkali meadow creation area (2 temporary or permanent ditch crossings) | 32,500 27,450 | None | 600 – permanent fill (gravel) for PG&E access Road 10,200 – fill for all culverts in Borrow Areas 1,275 – fill for crossings to alkali meadow |

Table 2. Summary of Pre- and Post-Phase 1 Conditions and Jurisdictional Waters at the Bel Marin Keys Unit V Wetland Restoration Project

| Feature Type | Existing Condition | | Post-Project Conditions | | Net Change | |
|----------------------------------------------------------------------|--------------------|---------------|-------------------------|---------------|--------------|---------------|
| | Extent | | Extent | | Extent | |
| | Linear feet | Area (acres) | Linear feet | Area (acres) | Linear feet | Area (acres) |
| Wetlands | | | | | | |
| Saline emergent wetland | | 26.12 | | 25.33 | | -0.79 |
| Seasonal wetland | | 12.29 | | 36.39 | | +24.10 |
| Farmed wetland | | 0.11 | | 0.11 | | 0 |
| <i>SubTotal</i> | | 38.52 | | 61.83 | | +23.31 |
| Other Waters of the U.S. | | | | | | |
| Pond | | 13.01 | | 13.01 | | 0 |
| Drainage channel | 37,732 | 4.98 | 42,903 | 5.78 | 6,771 | +0.80 |
| <i>SubTotal</i> | 37,732 | 17.99 | 42,903 | 18.79 | 6,771 | +0.80 |
| Non-Jurisdictional Features | | | | | | |
| Transitional Habitat/ Uplands/Farmland/ Roads/Minor Built Structures | | 849.11 | | 825.00 | | -24.11 |
| <i>SubTotal</i> | | 849.11 | | 825.00 | | -24.11 |
| PROJECT TOTALS | | | | | | |
| Non-jurisdictional Features | | 849.11 | | 825.00 | | -24.11 |
| Wetlands and Other Waters (Jurisdictional) Features | | 56.51 | | 80.62 | | +24.11 |
| Total Acreage | | 905.62 | | 905.62 | | 0 |

SOURCE: ESA, 2016. Area subtotals subject to rounding.

Table 3. Net Change in Waters and Wetlands for Phase 1 of the Bel Marin Keys Unit V Wetland Restoration Project (includes wetlands and waters)

| | Temporarily Impacted | | Permanently Impacted | | Created | | Net Change | |
|---------------------------------|----------------------|--------------|----------------------|--------------|---------------|--------------|--------------|--------------|
| | Linear Feet | Area (Acres) | Linear feet | Area (acres) | Linear feet | Area (acres) | Linear feet | Area (acres) |
| Wetlands | | | | | | | | |
| Saline emergent wetland | | 0.61 | | 0.79 | | 0 | | -0.79 |
| Seasonal wetland | | 0 | | 0.90 | | 25.00 | | 24.10 |
| Farmed wetland | | 0 | | 0 | | 0 | | 0 |
| <i>SubTotal</i> | | 0.61 | | 1.69 | | 25.00 | | 23.31 |
| Other Waters of the U.S. | | | | | | | | |
| Pond | | 0 | | 0 | | 0 | | 0 |
| Drainage channel | 3,000 | 0.86 | 14,619 | 1.16 | 21,390 | 1.96 | 6,771 | 0.80 |
| <i>SubTotal</i> | 3,000 | 0.86 | 14,619 | 1.16 | 21,390 | 1.96 | 6,771 | 0.80 |
| Total | | 1.47 | | 2.85 | | 26.96 | | 24.11 |

Table 4. Dredged Material Screening Criteria (RWQCB 2000) Proposed for Use at the Bel Marin Keys Unit V Wetland Restoration Project*

| Constituent | Wetland Surface | Wetland Foundation |
|--------------------|------------------------|---------------------------|
| Inorganics | (mg/kg) | (mg/kg) |
| Arsenic | 15.3 | 70 |
| Cadmium | 0.33 | 9.6 |
| Chromium | 112 | 370 |
| Copper | 68.1 | 270 |
| Lead | 43.2 | 218 |
| Mercury | 0.43 | 0.7 |
| Nickel | 112 | 120 |
| Selenium | 0.64 | |
| Silver | 0.58 | 3.7 |
| Zinc | 158 | 410 |
| Organics | (µg/kg) | (µg/kg) |
| PAHs, total | 3,390 | 44,792 |
| Chlordanes, total | 2.3 | 4.8 |
| DDTs, total | 7 | 46.1 |
| Dieldrin | 0.72 | 4.3 |
| PCBs, total | 22.7 | 180 |
| **Dioxins (total | 0.02 | 0.02 |

*Note that burial of wetland foundation material under 3 feet of surface material is not approved, and depends on Executive Officer approval of a plan to isolate the material and prevent channel incision.

** Not required by the Regional Water Board; may be required by USFWS

FIGURES

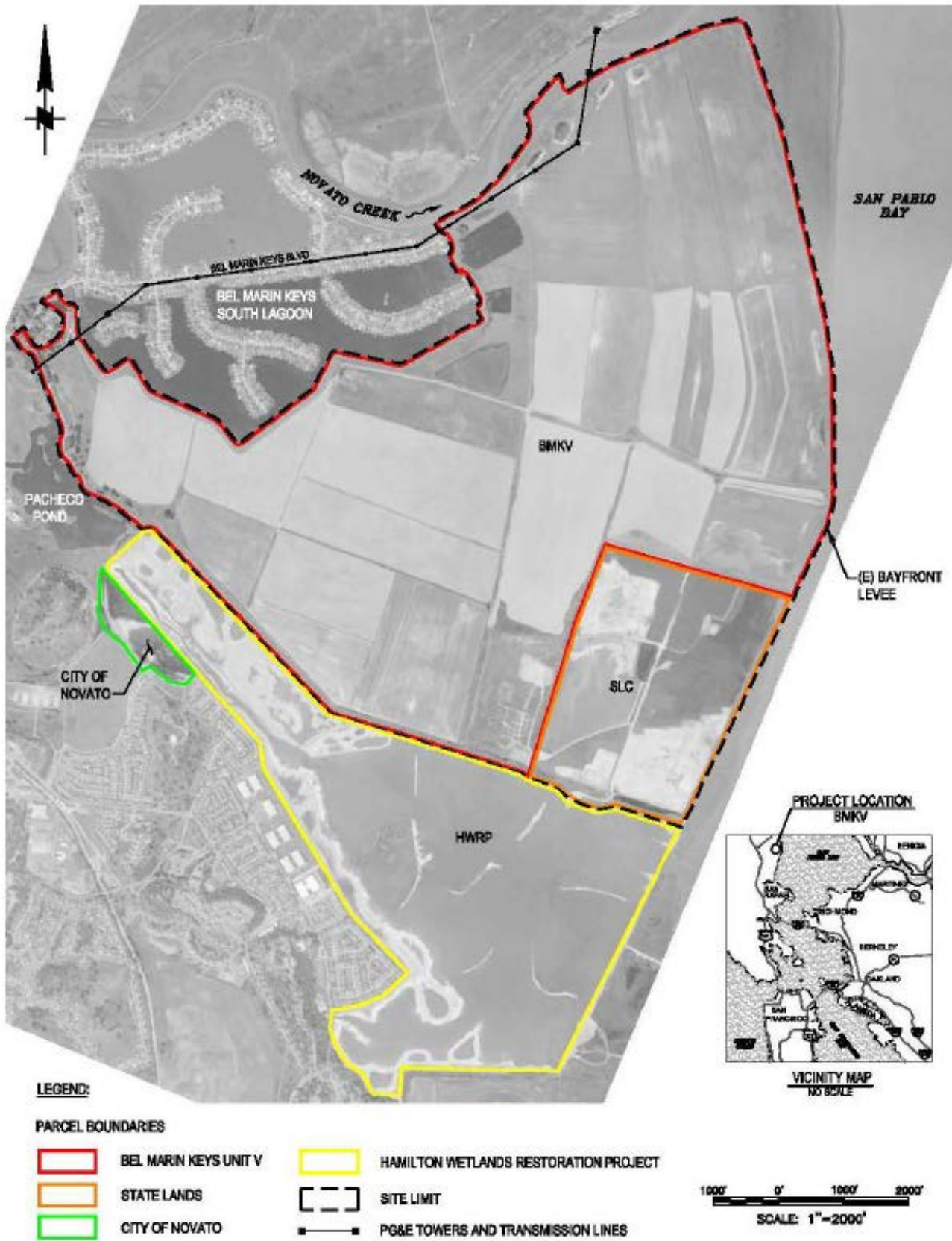


Figure 1. Project Location

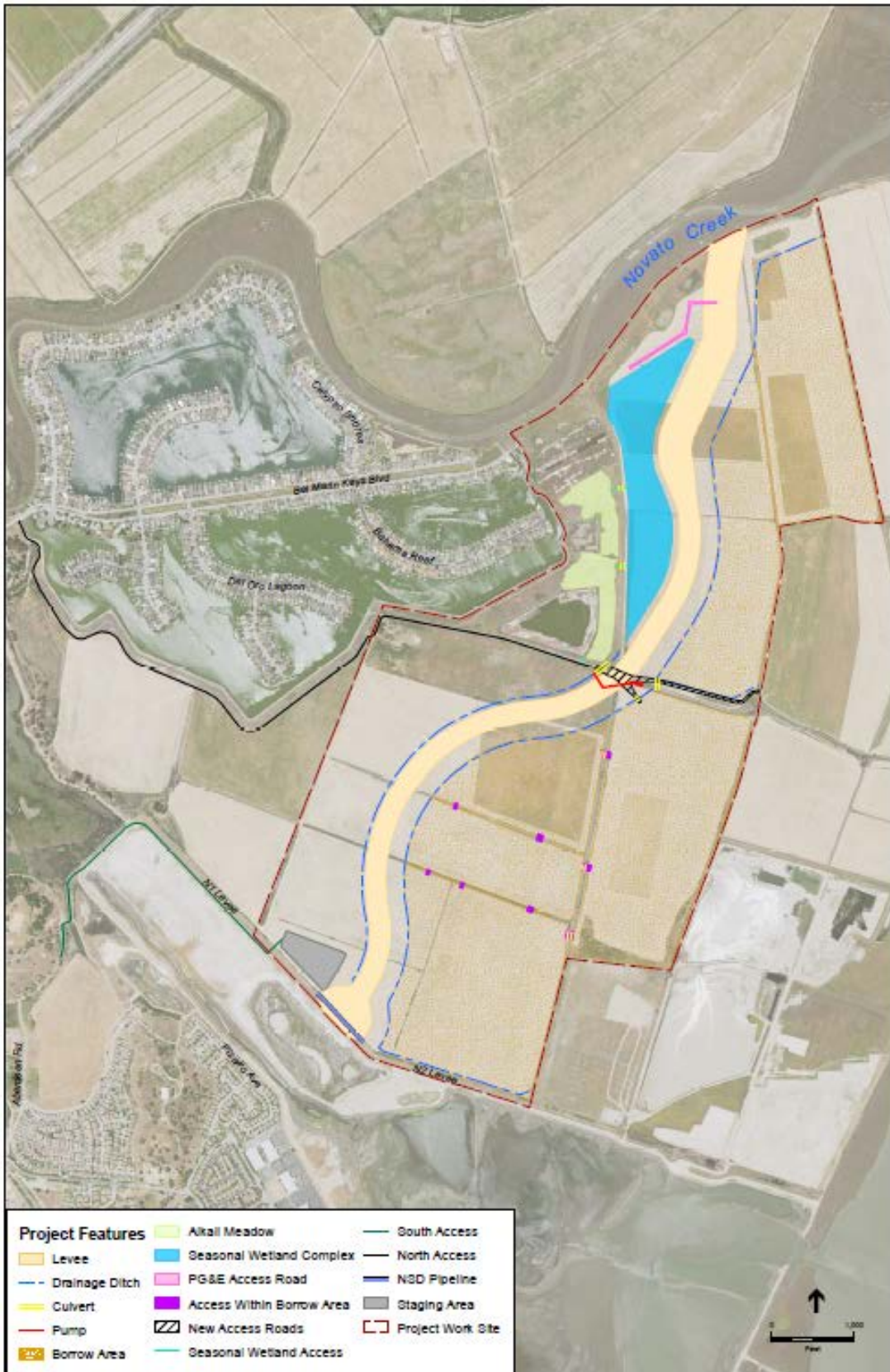


Figure 2. Project Elements

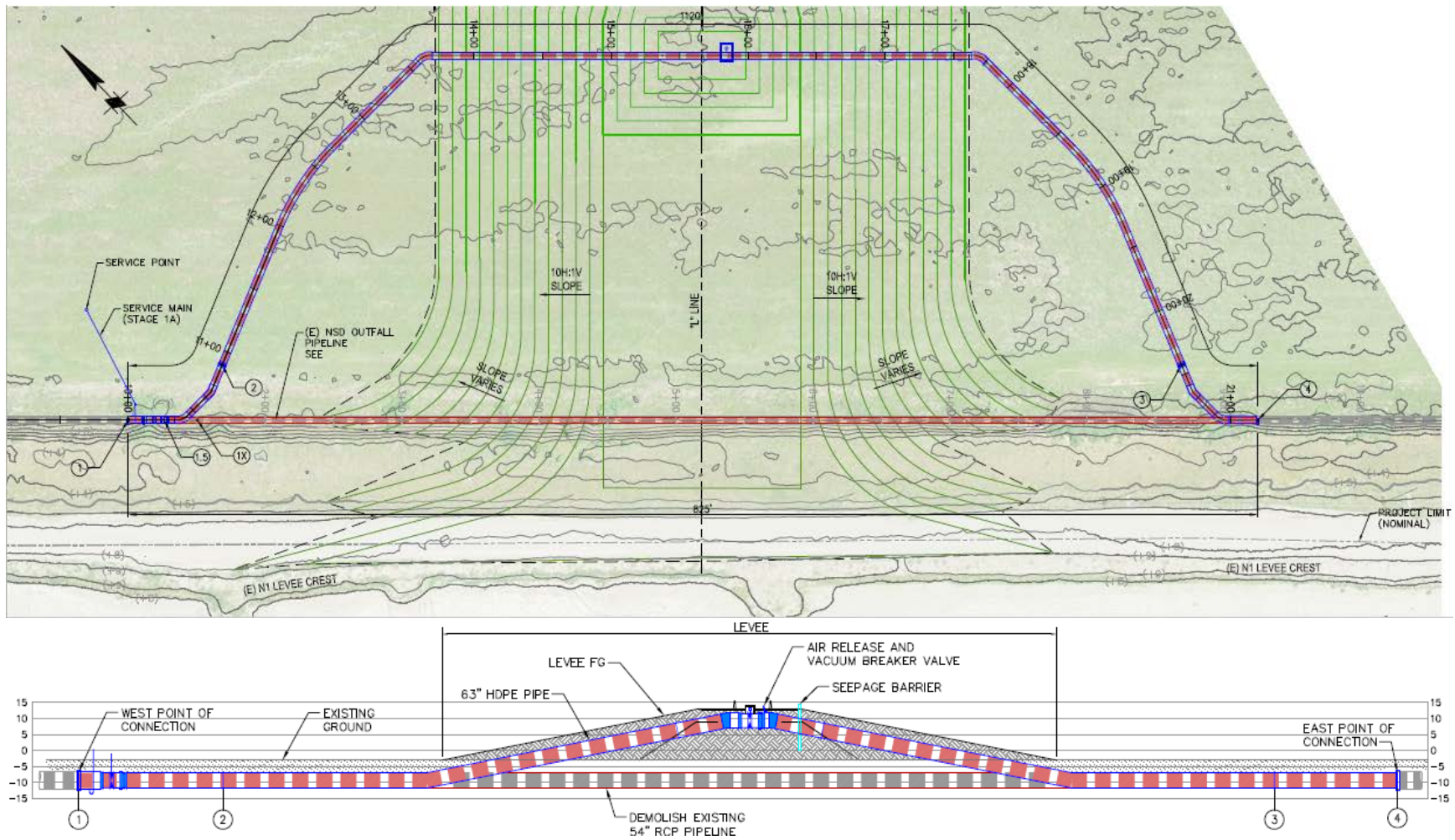


Figure 3. South Levee Tie-In & Future Novato Sanitary District Outfall

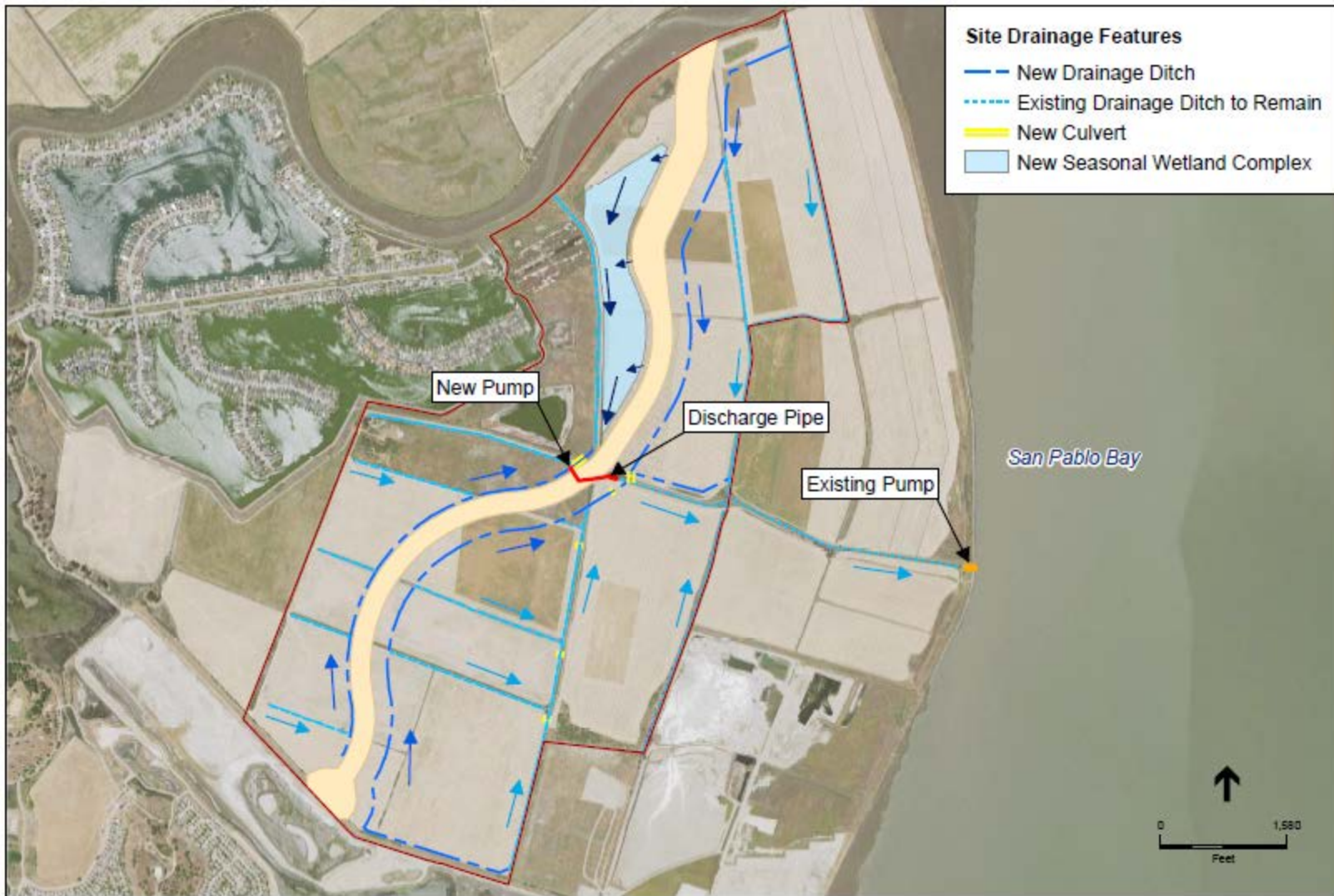


Figure 4. Site Drainage Modifications

ATTACHMENT A:
Conservation Measures to
Protect Water Quality and Other Environmental Features
From the 2017 U.S. Fish and Wildlife Service Concurrence Letter

The Applicant and their contractors will implement the following conservation measures to minimize adverse effects to all potential special-status species in the area, including western snowy plover:

1. Field and construction personnel involved with the Project will attend environmental resources training program developed by a Service-approved biologist. Material covered will include environmental rules and regulations applicable to the specific Project and requirements for avoiding sensitive resource areas.
2. If new personnel area added to the Project, the contractor will ensure new personnel receive the mandatory training before starting work. A representative will be appointed during the employee education program to be the point of contact for communicating with regulatory agencies for reporting or incidents.
3. Any special-status species observations during surveys will be reported to the appropriate agencies and added to the California Natural Diversity Database (CNDDB).

Salt Marsh Harvest Mouse

The Applicant and their contractors will implement the following conservation measures to minimize adverse effects to the salt marsh harvest mouse:

1. A Service-approved biologist will be onsite during all ground-disturbing activities within suitable wetland habitat and will be responsible for informing the construction crews of the need to halt work if sensitive species observations are made, documenting compliance with the conservation measures, and contacting the Service within one day if any work stoppage results from species observation at the work site.
2. Vegetation within salt marsh harvest mouse habitat will be removed to bare ground using hand tools and/or another method approved by the Service and California Department of Fish and wildlife.
3. Exclusion fencing will be installed around project work areas and immediately following vegetation removal. Fencing will consist of a material that does not allow salt marsh harvest mouse to pass through or over, and the bottom will be buried to a depth of at least six inches. Any supports for the exclusion fence (e.g., t-posts) will be installed on the interior of the Project Area.
4. Prior to the start of any daily ground disturbance activities, the Service-approved biologist will inspect the exclusion fence boundary and insure it has not been compromised. If any salt marsh harvest mice are discovered, construction activities will stop in the area, the Service will be contacted, and the individual mice will be monitored until they leave of their own volition.
5. All equipment will be staged on existing roadways, away from suitable wetland habitats,

when not in use. No project activities will occur within 50 feet of suitable habitat during extreme high tide events or when adjacent tidal marsh is flooded unless salt marsh harvest mouse exclusion fencing has been installed around the work area and the fence is not compromised by the flooding nor precluding the only refuge for the species.

California Clapper Rail

The Applicant and their contractors will implement the following conservation measures to minimize adverse effects to the California clapper rail:

1. Project activities occurring within 700 feet of tidal marsh areas containing suitable habitat for California clapper rails, will be avoided during the breeding season (February 1 through August 31).