SAFER BAY PROJECT

PERMITTING STRATEGY

ABSTRACT

This document describes key steps and decision points to complete CEQA/NEPA and environmental permitting for the SAFER Bay Project.

San Francisquito Creek Joint Powers Authority

November 8, 2024

SAN FRANCISQUITO CREEK
JOINT POWERS AUTHORITY

SAFER BAY PROJECT

Contents

Attachments

A – FEMA Endangered Species Act Consultation with USFW, February 2022 and February 2023
B – Site Management Plans for Brownfield Redevelopment Areas, East Palo Alto
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SAFER Bay Project
Permitting Strategy

SUMMARY

The Strategy to Advance Flood protection, Ecosystem restoration and Recreation along San Francisco Bay Project (SAFER Bay) addresses tidal flood protection by improving or rebuilding flood protection features along San Francisco Bay within SFCJPA jurisdiction. The project area encompasses the San Francisco Bay shorelines of East Palo Alto and Menlo Park within San Mateo County (Figure 1). A Public Draft Feasibility Report was issued in 2016.

SOURCES: HDR, 2024; ESA, 2024

NOTES: Reaches to be evaluated at a project-level of detail are shown in solid lines; reaches to be evaluated at a program-level of detail are shown as dashed lines. The northern parts of the Bedwell Bayfront Park Reach would tie into high ground at Bedwell Bayfront Park.

SAFER Bay Project

Figure 1
Project Location and Components

ESA

Figure 1. Location of SAFER Bay Project and Reaches

This permitting strategy document describes key steps and decision points to enable programmatic California Environmental Quality Act (CEQA) clearance for the entire project, project-specific CEQA clearance for the first phases of construction, National Environmental Policy Act (NEPA), and regulatory permitting via the San Francisco Bay Restoration Regulatory Integration Team (BRRIT). The BRRIT includes all of the state and federal regulatory agencies with discretionary authority over the natural resources that will be affected by the project.

A key element of the permitting strategy is SAFER Bay's inclusion of ample onsite habitat restoration within the Ravenswood Salt Pond Complex to compensate for impacts to regulated natural resources from all project reaches (both project-level and program-level reaches). The proposed restoration also advances the objectives of the South Bay Salt Pond Restoration Project (SBSPRP) and U. S. Fish and Wildlife Service (USFWS) Don Edwards National Wildlife Refuge (Refuge). The onsite salt pond habitat restoration, which covers habitat mitigation requirements for the entire project, is incorporated into the project description and will be included in the BRRIT permitting process.

Although not a CEQA requirement, the SFCJPA has determined that a public *Draft Project Description* based on the 10 to 30% engineering designs will be a useful tool to convey the current project status prior to the *Draft Environmental Impact Report* (DEIR) that is planned to be released by August 2025. The Draft Project Description was submitted to SFCJPA September 25, 2024, and is currently being revised based on internal comments. It is expected to be released November 2024. Community-based organizations, Climate Resilient Communities and Nuestra Casa are planning for a meeting in early December to present the public *Draft Project Description*. Formal comments are not required, as the official time for public input will be during the public comment period for the Draft EIR. Of course, if any significant errors are identified, these will be corrected prior to the release of the Draft EIR in late 2025.

The SFJPA intends to request that the BRRIT issue permits based on the entire project; proposed flood protection in all reaches and proposed pond habitat restoration necessary to compensate for impacts to regulated habitats and species. This strategy will enable construction of SAFER Bay's salt pond habitat restoration first or at the same time as other funded reaches, thereby reducing the temporal loss of regulated wetland habitats from impacts as future reaches of flood protection are constructed; and providing ample habitat mitigation for the entire SAFER Bay project.

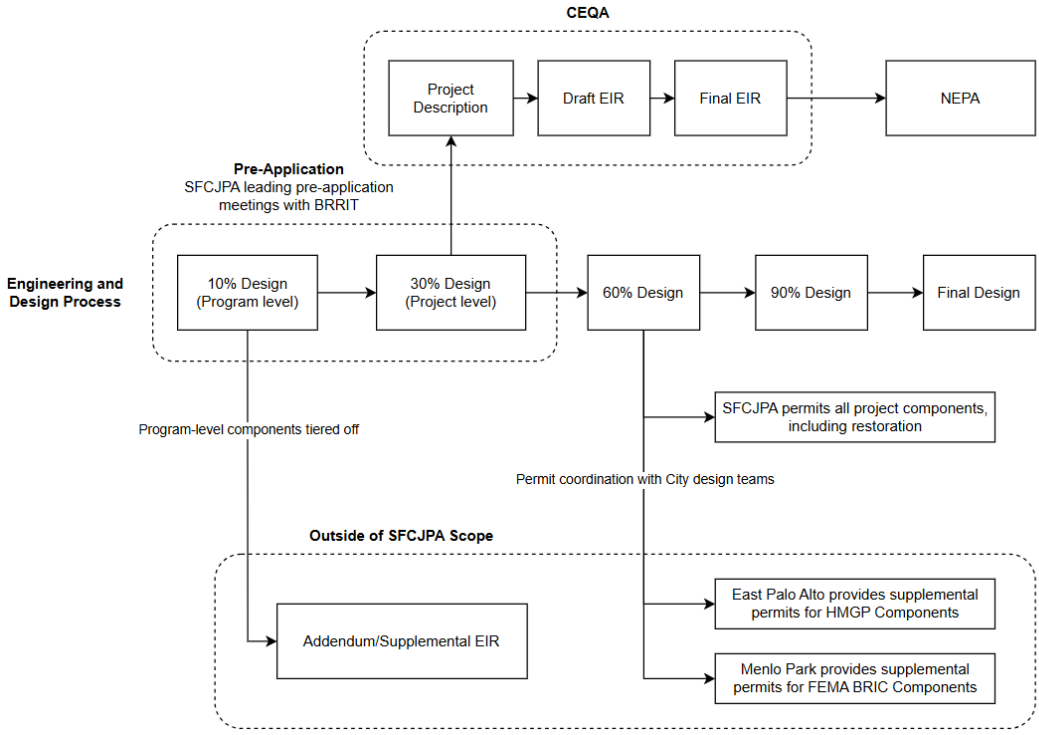

Figure 2. SAFER Bay Project Permitting Roadmap

The SAFER Bay Project is using a programmatic approach for CEQA, with project-level evaluations included for aspects of the project that are designed to the 30% level for the CEQA analysis (SFJPA 2022). The programmatic CEQA process will allow SFCJPA member cities to tier off the programmatic CEQA document for their specific reaches. The SFJPA is the CEQA Lead Agency. The SFCJPA has led the project's early pre-application communications with the BRRIT (5 BRRIT meetings and a tour thus far) and will lead the forthcoming formal BRRIT permitting process in 2025-2027, which will cover all project reaches and the onsite Ravenswood Pond Complex restoration components. The intent is to acquire BRRIT permits for flood protection infrastructure for all reaches and onsite habitat restoration such that the restoration work provides compensatory mitigation for the natural resource impacts from all project reaches. The exact permitting process for project-level vs program-level reaches will be discovered by the SFCJPA in communications with the BRRIT. This will require that the SFCJPA coordinate closely with the Cities of Menlo Park and East Palo Alto to incorporate updates made by the Cities design teams to the HDR Team's 10-30% design packages into the BRRIT permit applications.

NEPA will follow CEQA and is expected to be completed by FEMA as the NEPA lead agency.

The following key federal and state regulatory permitting strategies for the SAFER Bay Project are identified:

- The project will impact waters of the U.S./State, several State and Federal threatened and endangered species, and land that is under BCDC jurisdiction. Therefore, the following federal and state permits will be required:
    - ✓ Clean Water Act (CWA) Section 404 Individual Permit from U. S. Army Corps of Engineers (USACE)
    - ✓ Federal Endangered Species Act (FESA) Section 7 Biological Opinion from USFWS and National Marine Fisheries Service (NMFS)
    - ✓ Clean Water Act Section 401 Water Quality Certification from San Francisco Bay Regional Water Quality Control Board (RWQCB)
    - ✓ McAteer-Petris Act, Major Permit from Bay Conservation and Development Commission (BCDC)
    - ✓ Lake and Streambed Alteration Agreement from California Department of Fish and Wildlife (CDFW)
    - ✓ California Endangered Species Act (CESA) Section 2081 Incidental Take Permit from California Department of Fish and Wildlife (CDFW) should the project impact species listed as threatened or endangered under CESA that do not have Fully Protected status.
    - ✓ National Historic Preservation Act of 1966 (NHPA) Section 106 review of project effects on historic properties.
    - ✓ Lease with State Lands Commission. Portions of the Project area include State-owned sovereign land under the jurisdiction of the Commission. Therefore, a lease from the Commission will be required for any portion of

the Project encroaching on State sovereign land.

- The BRRIT is the preferred regulatory vehicle for obtaining the first six permits listed above for SAFER Bay Project's impacts on ecological resources (e.g., wetlands, threatened/endangered species). The SFCJPA's EIR/engineering design team has taken a proactive approach to the alternatives development process, with early input from the SFCJPA's member agencies, the BRRIT, and other key stakeholders input in the formulation of the draft EIR. The SFCJPA will continue to pro-actively engage the BRRIT after completion of the EIR and into the permitting process and include Cities as well as other land owners, as appropriate in these meetings. As noted above, SAFER Bay's habitat restoration within the Ravenswood Pond Complex is a project-level component of the forthcoming DEIR and is being designed to be sufficient to reduce impacts from all project reaches (project-level and program-level) to a less-than-significant level.
- SAFER Bay's wetland and threatened/endangered species habitat mitigation approach includes:
    - The provision of onsite habitat restoration and enhancement within the South Bay Salt Pond Restoration Project's Ravenswood Pond Complex to mitigate for impacts to wetland and threatened/endangered species habitat from the entire project (both the program-level and project-level reaches).
    - Construction of the ecological restoration/mitigation components in the Ravenswood Pond Complex (including the levees in Ponds SF2 and R2) before or during the same construction timeline as construction of the first levee reaches to be built outside of the restoration area. This timeline for habitat restoration will reduce temporal loss of wetland habitats, as is required by the regulatory agencies. Moreover, the habitat restoration proposed in the Ravenswood Pond Complex involves actions taken to restore habitats at the scale of entire salt ponds and these construction actions cannot be feasibly split into discrete sub-projects. With this approach, the habitat restoration/mitigation for all reaches would be constructed prior to completion of construction for all of SAFER's flood protection reaches. The SFCJPA would work with the BRRIT to determine the BRRIT's preferred process for documenting and accounting for the excess habitat mitigation constructed, such that this excess mitigation can be utilized to compensate for wetland and endangered/threatened species impacts from future reaches without engendering the need for subsequent habitat mitigation.
- The USACE CWA Section 404 Individual Permit process will require preparation of a Section 404(b)(1) Alternatives Analysis that demonstrates that the preferred project is the Least Environmentally Damaging Practicable Alternative (LEDPA) that achieves the project's purpose and need. The Section 404(b)(1) Alternatives Analysis must include a robust alternative evaluation and clearly identify the optimal SAFER Bay flood protection alignment and design that achieves the

LEDPA. USACE also requires a consultation with State Historic Preservation Officer (SHPO) and tribal representatives to comply with NHPA Section 106 unless it is done by the NEPA lead agency.

- The Regional Water Quality Control Board has a broader definition of waters of the State. The LEDPA evaluation of alternatives must also consider the Water Board's definition of waters, which is larger than the definition used for the USACE LEDPA evaluation.
- The SFCJPA's project team believes that the LEDPA is reflected in the DEIR and the earlier public Draft Project Description. .
- Coordinate closely with FEMA. Submit a Conditional Letter of Map Revision (CLOMR) to FEMA when designs are sufficiently advanced for FEMA review.
- The BRRIT permit applications will require the SFCJPA team's preparation of the following technical documents:
    - ✓ Section 404(b)(1) Alternatives Analysis (summarized above)
    - ✓ FESA Section 7 Biological Assessment (documenting the project's effects on federal threatened/endangered species)
    - ✓ Wetland Habitat Restoration and Monitoring Plan (documenting the project's impacts on regulated wetlands and other waters, and federal/state listed species and the proposed habitat mitigation and monitoring plan within the Ravenswood Pond Complex) The RMP is expected to cover the entire SAFER Bay Project. It will reference the South Bay Salt Pond Restoration Program (SBSPRP) monitoring and adaptive management program, which is already approved and in place.

- Portions of the SAFER Bay project in East Palo Alto overlap with US Environmental Protection Agency (USEPA) Region 9 brownfield areas. Coordination with the USEPA is required to ensure that the SAFER Bay Project can comply with deed restrictions and requirements specified in the Site Management Plans.
- The SAFER Bay Project is the first project to use the Adapting to Rising Tides format. This should lead to greater comfort with regulated and affected communities but could increase costs and timeline if not carefully managed by the SFCJPA.

The following schedule was developed with team input and grant deadlines considered.

Task	Estimated Completion Date
SFCJPA's Programmatic and Project-level CEQA (EIR)	2025

Task	Estimated Completion Date
Addendum/Supplemental EIR(s)/NEPA	2026
Engineering Design for 30%, project-level and 10% program-level reaches	2024-2026
Engineering Design for 60%, 90% and Final Designs for Project-level reaches	2024-2026
Construction begins for Project-level reaches	2027*
Public outreach*	2030+*
Right-of-Way Acquisition and Agreements for O&M	2026 and beyond, as dictated by reach schedules.
*Community engagement will continue through construction.	

Table 1. Preliminary SAFER Bay Schedule Summary

Detailed schedules developed for each project as funded will determine if this preliminary schedule is still accurate.

Introduction

This permitting strategy describes the path forward for the SAFER Bay through CEQA, NEPA and natural resource regulatory permitting via the BRRIT. It does not touch on funding, but acknowledges that the following sources of funding are being used:

- DWR Grant with match funding from Cities of East Palo Alto and Menlo Park;
- San Francisco Bay Restoration Authority Measure AA Funding;
- East Palo Alto Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program Phase 1 funding; and
- Menlo Park FEMA BRIC Phase 1 funding.

This permitting strategy is for the SAFER Bay Project in San Mateo County within the Cities of East Palo Alto and Menlo Park.

Project Background

Project Objectives

The overall purpose of the Project is to protect people, property and infrastructure from current tidal flooding and projected sea level rise through engineered and natural features that enhance shoreline ecosystems and improve recreational opportunities. The specific objectives of the Project include:

- Reduce the risk of flooding within the cities of East Palo Alto and Menlo Park from San Francisco Bay waters, including consideration of up to 3.5 feet of future sea level rise, and support the communities' objective to be removed from the FEMA floodplain;

- Enable adaptation to our changing climate by using tidal marsh areas for flood protection in ways that sustain marsh habitat and facilitate marsh restoration associated with the SBSPRP and other restoration efforts;

- Expand opportunities for recreation and community connectivity in collaboration with the Bay Trail Program and efforts to enhance local trails;

- Minimize future maintenance requirements; and

- Partner with agencies and organizations pursuing similar goals and objectives and with assets to be protected by the Project.

The SAFER Bay Project will not rely on projects by other entities to achieve these objectives but will coordinate with other sea level rise and flood reduction efforts in the nine county Bay Area to ensure overall consistency.

Design Criteria

Design criteria are documented in the SFCJPA team's draft Design Criteria Memorandum. Preliminary design criteria are listed below and have been developed to be consistent with the completed SFCJPA Flood Risk Reduction, Ecosystem Restoration and Recreation Project from Highway 101 to San Francisco Bay and local, state and federal guidance, and other SLR

adaptation projects in planning or design along the San Francisco Bay shoreline.

Minimum design elevation (1% SWL only)		
Elevation or Height	*Average* Existing Condition	Considering 3.5 ft of SLR
1% SWL elevation (100-year tidal floodplain)	11.0 ft	14.5 ft
Freeboard above the SWL (minimum of 2 feet is required at most locations)	3.0 ft	2.5 ft
Preliminary design elevation	***14.0 ft***	***17.0 ft***

Notes: SWL = still water level
Does not include settlement or wave runup as these vary by location.

Table 2. Preliminary Design Elevations for SAFER Bay Project

Proposed Activities

The SAFER Bay project will include restoration of tidal marsh, enhancement of managed pond(s), and construction of traditional earthen levees, horizontal levees, floodwalls and hybrid floodwall-earthen slope options. The types of flood protection infrastructure will vary by location and site constraints. It is a multi-benefit flood protection and restoration project. Inherent in its purpose and design is the expectation that the SAFER Bay Project will protect people and critical infrastructure, restore historic tidal marsh habitats and their associated flood control functions and restore sensitive species habitat. The SFCJPA's project team is designing the project to be self-mitigating and to result in a net long-term ecological uplift for wetland and aquatic habitats and the associated sensitive species.

A draft Community Outreach Plan was developed in February 2022. Outreach is being led by community- based organizations, Climate Resilient Communities and Nuestra Casa. A Community Advisory Group is engaged for SAFER Bay, whose input will inform SAFER Bay from design through construction. The project has broad support from stakeholders and forms a unique private- public partnership of funding.

Environmental Compliance

California Environmental Quality Act (CEQA)

The Project is subject to the requirements of the CEQA; the SFCJPA is serving as the CEQA lead agency. Responsible and trustee agencies pursuant to CEQA include the CDFW, RWQCB, State Lands Commission, BCDC, and the cities of East Palo Alto, Menlo Park, and Palo Alto.

The Project is expected to have the potential to create significant impacts and the SFCJPA has determined that an EIR is appropriate. A Notice of Preparation (NOP) was issued April 2022 (SCH # 2022040504), and comments received are being used to inform the EIR. The NOP announced the document's approach, and the list of topics to be more fully analyzed. The October 2022 NOP Scoping Report summarizes the NOP process and includes summary responses to comments received on the NOP.

Supplemental CEQA documentation (e.g., supplemental EIRs) are envisaged as

individual reaches are funded.

Although not required under CEQA, the SFCJPA has determined that a public draft Project Description will be useful to the public and our partners. The Draft Project Description will be posted on the SFCJPA website and otherwise made available in the fall of 2024.

National Environmental Policy Act (NEPA)

FEMA is the project's NEPA lead agency as a project funder for SAFER Bay. FEMA has solicited input from USFWS as a consulting agency and will engage USACE as part of their process in the future. FEMA's Environmental and Historic Preservation (EHP) review for design activities, informal consultations with USFW on geotechnical borings were completed in February 2022 as part of the City of East Palo Alto's Hazard Mitigation Grant Program funded by FEMA, and February 2023 for the City of Menlo Park's FEMA BRIC grant. This early consultation is an informal Section 7 consultation with the USFWS San Francisco Bay-Delta Fish and Wildlife Office guiding field investigation activities and is presented in Attachment A that consists of the following items from 2022 and 2023 evaluations:

- Endangered Species Act Compliance Package Transmittal Letter
- FEMA's Letter Requesting Informal Consultation to USFWS SFBDFWO
- USFWS Letter of Concurrence (ESA Section 7 Informal Consultation – SFBDFWO)
- HMGP-4344-541-93 Biological Assessment SAFER Bay Project Phase 1b San Mateo County, City of East Palo Alto, CA
- ESA Compliance Memorandum

FEMA staff stated that they intend to complete NEPA shortly following the SFCJPA's completion of the CEQA process.

Brownfield Redevelopment

Portions of the Ravenswood Shores Business District of East Palo Alto are a USEPA Brownfield Redevelopment Area. Coordination with USEPA is required to ensure that the SAFER Bay Project can comply with deed restrictions and requirements specified in Site Management Plans. Attachment B provides approved Site Management Plans that have been received to date.

Regulatory Outreach Conducted to Date

The project is being permitted via the BRRIT. The BRRIT process is summarized in Figure 3. The SFCJPA's project team has attended the following preapplication meetings with the BRRIT:

Meeting 1: March 4, 2020

Meeting 2: September 2021

Meeting 3: November 2022

Meeting 4: August 16, 2023

Meeting 5: June 12, 2024

The BRRIT's comments on the SAFER Bay Project, and SFCJPA response are included in Attachment B.

In addition to the pre-application meetings listed above, the SFCJPA hosted a tour for the BRRIT of the SAFER Bay project area on May 17, 2022.

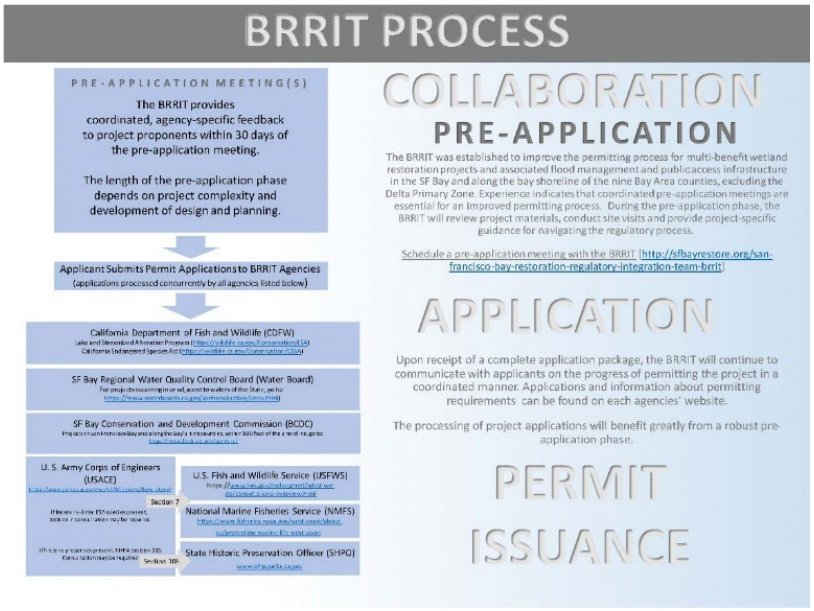

Figure 3. Permitting Process using BRRIT

The estimated schedule for regulatory permitting listed below was submitted to the BRRIT at their request in late 2022 for their planning purposes. :

- Submit applications : 4/2026
- Permits needed: 2/2027
- Start construction of restoration and initial flood control reaches: 6/2027

.

Anticipated Permits Required

The SAFER Bay Project will require permits and/or approvals from local, state, and federal regulatory agencies. Anticipated permits and authorizations required for project implementation, including permit triggers, key notes, and approximate timelines, are summarized in Table 3 (at end of document- page 20); it is organized by first presenting federal permits, followed by state, and then regional/local permits expected to be required.

It should be noted that the approximate agency review/processing times shown in Table 3 do not include the time needed to prepare and submit permit applications (and their required supporting information, as summarized in Table 4 (page 28)). The SFCJPA team's preparation of permit applications and associated technical documents will take

approximately 6-12 months, not including any biological studies which may require longer durations or protocol requirements to be conducted during specific times of year.

Based on the list of permits expected to be required (per Table 3), a typical timeframe of approximately 12-18 months is needed for BRRIT permit application review and issuance, following submission of formal permit applications.

CEQA is being conducted in advance of project permitting as is required by the California state regulatory agencies. NEPA will be conducted by FEMA following CEQA. Note that the permit processing timelines shown in Table 3 reflect agency review and processing timeframes under targeted/'ideal' conditions, and may not reflect time that may be needed for complex multijurisdictional projects like SAFER Bay, even under the accelerated BRRIT permitting process.

Assumptions

At this point, prior to detailed design and CEQA, it is assumed that the following actions are likely to occur:

- Flood protection is assumed to be primarily standard 3:1 levee, sheet pile for areas that do not have enough room; and combination of both in certain areas;
- Where sheet pile floodwalls are used against marsh areas, the marsh side will have a transition zone.
- No dredging is assumed to be part of SAFER Bay project;
- CDFW 1600 Streambed Alteration Agreement will be needed if the project design necessitates impacts to drainages under CDFW jurisdiction;
- While state and local permit applications can be submitted prior to CEQA completion, final state and local permits cannot be issued without a certified CEQA document or Notice of Determination (NOD).
- Qualified wildlife biologists will identify whether any surveys are needed for federal and/or state threatened or endangered species such as the western snowy plover, California Ridgway's rail and salt marsh harvest mouse in collaboration with the USFWS and CDFW representatives on the BRRIT. If required such surveys are restricted to certain seasons and may need to be conducted well in advance of the preparation of permit applications.
- The USFWS must approve resumes of qualified biologists to conduct preconstruction surveys prior to geotechnical borings under the existing Letter of Concurrence for those activities. USFWS has requested that future resumes be submitted for review.
- Piles could be required for certain structural needs. If piles are proposed, the specific location and/or installation methods could drive the need for different permits than those cited in Table 1. For example, in-water pile installation could pose potential harm to marine mammals or fish, and noise related to pile installation could pose harm to upland terrestrial (marsh) species.
- New or replacement concrete or other structures could be required in association with the relocation of an existing culvert headwalls. The specific

location, nature, and quantity of such solid fill could drive the need for different permits than those cited in Table 1.

This assessment **does not address the following permits or agreements**, some of which may be required for Project implementation:

- Rights of way for temporary and permanent easements
- Access agreements from landowners
- Permits, approvals, or any coordination related to hazardous materials (including Department of Toxic Substances Control), if required;
- City-required Development, Building, Construction or Grading permits; or
- Permits that may be required for upland transport and/or disposal of excavated materials (including potentially contaminated materials)

The following federal, state, or regional **permits have been considered and are assumed not to be needed**, based on the anticipated existing site conditions (including potentially present resources):

- USACE Sec 103 Permit (for transport and dumping of dredged materials in ocean waters) or Section 408 Permit (for engineering approval of modifications to USACE-built or -maintained facilities such as flood control channels or levees)
- USCG Special Use Permit
- Dredge Material Management Office (DMMO) approvals (as no dredging is proposed)

Permitting Challenges, Strategies and General Recommendations

Permitting Challenges

The following are some of the key permitting/regulatory challenges based on information to date:

1. **Permanent impacts to existing waters and wetlands** (such as tidal marsh, non-tidal wetlands, and 'other waters') – due to the permanent placement of fill in, and the resulting losses of, jurisdictional waters/wetlands and will therefore be required to provide compensatory wetland habitat mitigation to the satisfaction of the BRRIT.

2. **Impacts to special-status species** (e.g., state- or federally-listed species such as Western Snowy Plover, Salt Marsh Harvest Mouse, California Ridgway's Rail, etc.). Adverse impacts to special status species are expected to occur not only during construction (temporary impacts), but also potential long-term adverse effects (e.g., loss of habitat due to tidal restoration scenarios that result in a net benefit for some species (California Ridgeway's Rail, Salt Marsh Harvest Mice will result in loss of habitat for other species (e.g., Western Snowy Plover).

3. **Net Loss of Jurisdictional Waters.** The project may result in a net loss of jurisdictional waters because the salt ponds are currently jurisdictional habitats and their restoration does not provide large acreages of new waters of the U.S./State.

4. **Impacts to High Tide Refuge Habitat.** Construction of flood protection on the edge of existing tidal salt marshes will impact existing high tide refuge habitat on the slopes of the existing levees/berms at the landward edge of the marshes. Loss of high tide refuge habitat would adversely affect the California Ridgway's Rail and Salt Marsh Harvest Mouse.

5. **Type Conversion**.The project would likely convert jurisdictional habitat types from one type to another (e.g., conversion of open water in a salt pond to tidal salt marsh via marsh restoration actions). The project design process is also considering the pros and cons of converting jurisdictional habitats to non-jurisdictional uplands for the purpose of construction of horizontal levees that would provide transition zone habitat from tidal marsh to upland habitat to create additional high tide refugia habitat and tidal marsh transgression space as a SLR adaptation strategy.

6. **Coordination with Ravenswood Shores Business District** redevelopment in East Palo Alto
    a. Integration with any approved RBD projects is necessary in order to achieve levee design/flood protection.
    b. Compliance with Site Management Plans is required. These generally specify that there be no disturbance to existing contaminant remediation systems and site caps.

7. **SLC and BCDC processes:**

    a. The State Land Commission's lease amendment process may be lengthy, have iterative requests for information (See Table 3), and require legal team involvement.

    b. The BCDC's permit process also tends to be lengthy, detailed requirements, and their review timeline technically does not begin until after receipt of all other completed environmental compliance requirements (completion of CEQA/NEPA, issuance of final permits, etc.) This timeline should be minimized using the BRRIT permitting process.

8. **Federal Aviation Administration (FAA)** The SAFER Bay Project is evaluating levees, floodwalls and site specific refugia along segments of the flood control levees and creating tidal wetland habitat as mitigation to impacted wetlands which could occur within 5,000 feet of the San Francisco International Airport. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5200-33C.pdf

    a. FAA 2020 guidance specifies that FAA should work with local and regional planning and zoning boards to be aware of proposed land-use changes, or modification of existing land uses, that could create hazardous wildlife attractants including wetland development within 5,000 feet of an operational airport.

    b. FAA regulations require coordination with and/or approvals by

the FAA for proposed construction/development projects at and in the vicinity of airports.

i. An obstruction aeronautical study is required by the FAA to evaluate any proposed structures, and make a determination of permanent and temporary impacts.

ii. The FAA Obstruction Evaluation / Airport Airspace Analysis (Form FAA 7460-1 – Notice of Proposed Construction or Alteration) should be submitted when design details are known, and additional filings are required to the FAA to assess temporary construction impacts a minimum of 45 days prior to the start of work. Suggested strategies to address the Projects' anticipated challenges are presented below (in an order corresponding to the above challenges); some general strategies for streamlining and/or increasing successful permitting follow

Recommended Permitting Strategies

As noted in the Summary section above, The SFCJPA will lead the forthcoming formal BRRIT permitting process in 2025-2027, which will cover all project reaches and the onsite salt pond restoration components. The intent is to acquire BRRIT permits for flood protection infrastructure for all reaches and onsite habitat restoration such that the restoration work provides compensatory mitigation for the natural resource impacts from all project reaches. The exact permitting process for project-level vs program-level reaches will be discovered by the SFCJPA in communications with the BRRIT. This will require that the SFCJPA coordinate closely with the Cities of Menlo Park and East Palo Alto to incorporate updates made by the Cities design teams to the HDR Team's 10-30% design packages into the BRRIT permit applications.

The SFCJPA's permitting team intends to employ the following permitting strategies during their permitting work with the BRRIT to address the challenges enumerated above:

1. Permanent impacts to existing waters of the U.S./State, including wetlands- Using BRRIT resource agency coordination, we will incorporate recent and developing policy changes that are aimed at restoration and sea level rise adaptation Projects in the Bay:

   a. The SFCJPA and partner cities will continue BRRIT Pre-Application Interagency meetings to solicit key agency feedback on potential fatal flaws or recommended approaches, as well as early conceptual agency support for the Project.

      The SFCJPA's permitting team will continue to provide regular updates to, and request feedback from, the BRRIT staff, throughout the Project's duration. The SFCJPA's team will coordinate with the Cities of Menlo Park and East Palo Alto to incorporate design updates from the City's respective flood control design teams into the SFCJPA's impact analyses and permit applications to the BRRIT.

      Following the resolution of certain key issues and final site selection, the SFCJPA's permitting team will **request that the BRRIT permit the project in a manner that documents that SAFER Bay's upfront construction of large-scale restoration of tidal wetlands and endangered species habitat in the**

Ravenswood Pond Complex in Menlo Park will provide ample mitigation for the entire SAFER Bay program (project-level and program-level reaches).

b. Engage with higher-level agency staff/management, who have broader regional vision and decision- making power, and can empower staff at the permit-processing level to interpret existing regulations more broadly to support restoration.

c. **Identify the LEDPA according to USACE and RWQCB guidance via a robust alternative evaluation**. We will utilize options assessed by the HDR team during preparation of the 10-30% design packages, as well as any additional trade offs identified by the design teams with the Cities of Menlo Park and East Palo Alto.

d. **Align with the BCDC's Bay Plan Amendment policy regarding the placement of in-Bay fill for habitat restoration**, found in the 'Fill for Habitat Amendment' to the San Francisco Bay Plan (BCDC Fill for Habitat Fact Sheet).
In 2019, BCDC adopted a major amendment to the Bay Plan (Bay Plan Amendment No. 2-17) to allow large scale San Francisco bayland restoration projects to place more fill into the Bay to facilitate adaptation of these natural areas to sea level rise.

BCDC also acknowledges that allowing more fill in the Bay for habitat projects could result in some adverse impacts and conversions of some habitat types (a.k.a. 'type conversion') to another (such as marsh to upland to allow future marsh migration), the consequences of which are difficult to predict. To address the potential harm, BCDC proposes that, where appropriate, additional habitat monitoring and plans that provide additional actions where impacts may be significant (adaptive management plans) should be developed and carried out.

e. As soon as possible during the BRRIT permitting process, the SFCJPA will **identify whether the RWQCB will require additional offsite wetland habitat creation beyond the onsite wetland restoration in the Ravenswood Complex.**

f. Seek **relevant expertise** from experts throughout Project design advancement, **to best communicate Project constraints, design choices, and post-Project benefits**.

g. Present/**showcase the Project as part of the region's "Transforming Shorelines Collaborative,"** to increase awareness and publicity about the Project as well as to plan to collect input on key project challenges and to share lessons learned.

h. **Continued and Expanded Public outreach** will be key for this large and complex project- site tours, fact sheets, and visualization tools to educate and inform.

2. Type conversion - **Same as #1** above.

Consider the value of utilizing the EPA/Corps/RWQCB's in-progress/draft scientific and/or policy changes regarding type conversion associated with multi-objective

restoration projects, outlined in the 'Framework for Wetland "Type Conversion" Analysis' request for proposals recently issued by EPA Region 9. These 3 agencies are working towards developing improved and consistent strategies for assessing aquatic resource type conversions within the Clean Water Act framework, to assist in permitting and compensatory mitigation decisions.

3. Impacts to sensitive species **- Same as #1** above.

   Plan for seasonal avoidance of sensitive species (such as western snowy plover and California Ridgway's rail nesting season from January through August, migratory bird nesting season from February to August, and conducting in-water work within species work window of June 1 to November 30th) to the extent practicable. **Actual work windows for SAFER Bay will be determined both in the forthcoming DEIR and in the BRRIT permit conditions. Actively coordinate with the Project design team to ensure sensitive species avoidance measures can be carried out** (such as utilizing biological monitors, exclusion fencing when practicable, buffers around active bird nests, avoidance of marsh-adjacent construction during extreme high tides, hand-removal of vegetation to the extent practicable, etc.). Actively engage the BRRIT during permitting and other CEQA responsible agencies, as appropriate, to confirm the required special-status species avoidance and minimization measures in light of potential 'take' of listed species. See Attachment 1 for more information.

4. Potential challenges with State Lands Commission (SLC) and BCDC processes- Complete the Project Description and circulate for comments. This project will require BCDC Design Review Board approval.

   The draft permit applications should include the avoidance, minimization, and mitigation measures required by the SLC, Water Board and BCDC. Include discussion of increased public shoreline access as a result of SAFER Bay and adherence to Bay Trail guidance.

Recommendations for Streamlining Permitting and/or Increasing Permitting Success:

The following permitting strategies are recommended for the SAFER Bay Project:

- **Submit design to FEMA for approval via a Conditional Letter of Map Revision** (CLOMR). This is not required for project permitting but discussions with FEMA in 2022 indicated that this step is the time when FEMA will provide comments on flood protection components prior to final design. This should be done when designs are at 60 to 90%. Cities may initiate this process, noting FEMA accredits levee systems, not individual components.

- **Use a 'Permit Tracking Table'** to best stay on schedule and manage concurrent permitting processes

- Empower and encourage the Project design team to **identify and document constraints in siting, design configurations, and/or construction methodologies**, which can then be conveyed to regulators to increase understanding and support of the final selected site and proposed design.

- **Leverage municipal resources and political attention to encourage agency cooperation and support, especially from higher-level staff (i.e., management and directors)**; this can smooth out some regulatory issues that may arise at the staff level, if current regulations or guidance (generally not written to facilitate restoration at this time) are interpreted too narrowly.

- **Leverage existing Project support from regulatory agencies and the scientific community**, to encourage additional agency and stakeholder support. For example, BCDC's Letter of Support as part of FEMA BRIC application.

- With respect to sensitive species and/or habitats, develop a schedule to represent sensitive windows (such as nesting seasons) for those species with high potential to be present at the site; actively coordinate with engineers and construction specialists throughout Project design, to **ensure construction timing can maximize avoidance of the site's sensitive species windows**.

- Craft **definitions of and timelines for mitigation 'success criteria' carefully**, to ensure they are realistic; focus on qualitative and readily measured and achievable quantitative metrics and realistic timeframes for attainment; avoid commitments that would be 'in perpetuity.' Collaborate with the SBSPRP and Refuge to determine how the SBSPRP's Adaptive Management Plan can be utilized for monitoring and management of SAFER Bay's restoration and enhancements in the Ravenswood Pond Complex.

- Carefully consider and **limit the duration and level of detail proposed for long-term Project and/or mitigation monitoring and reporting**, as these efforts are often committed to without enough consideration (in order to facilitate expedited permitting) but may be far costlier than originally envisioned.

- The **O&M Plan** is a key document needed for FEMA accreditation. Request that the O&M Plan be due after construction. It should serve as a deliverable for FEMA and include as-builts.

Conclusions

- The BRRIT is the preferred method for state and federal natural resource permitting the SAFER Bay Project.

- The SFCJPA will lead the forthcoming formal BRRIT permitting process in 2025-2027, which will cover all project reaches and the onsite salt pond restoration components. The intent is to acquire BRRIT permits for flood protection infrastructure for all reaches and onsite habitat restoration such that the restoration work provides compensatory mitigation for the natural resource impacts from all project reaches. The exact permitting process for project-level vs program-level reaches will be discovered by the SFCJPA in communications with the BRRIT.

- Close coordinate between the SFCJPA's permitting team and the Cities of Menlo Park and East Palo Alto will be necessary to ensure that the SFCJPA's team

incorporates updates made by the Cities design teams to the HDR Team's 10-30% design packages into the BRRIT permit applications.

- Identification and selection of the LEDPA as the preferred project is key to SAFER Bay project permitting using USACE and RWQCB guidance; this process includes a robust alternatives evaluation that clearly identifies the optimal SAFER Bay flood protection alignment and design. The SFCJPA believes that the LEDPA is the public Draft Project Description and DEIR that will be solicited for public comment. The SFCJPA's permitting team will prepare a Section 404(b)(1) Alternatives Analysis Report to document the LEDPA during the forthcoming permitting process.
- The SFCJPA's project team has incorporated an onsite habitat restoration and enhancement design into SAFER Bay's public draft Project Description at the Ravenswood Pond Complex in collaboration with the SBSPRP, Refuge, and BRRIT. We believe the proposed restoration and enhancement provides ample habitat mitigation for the project's impacts to waters of the US/State and to FESA/CESA listed species from all project reaches. We intend to continue to incorporate design, permitting, and construction of this restoration into the project moving forward. The construction schedule for the project's habitat restoration should be commensurate with the schedule for initial levee construction. The SFCJPA will collaborate with the BRRIT to arrive at a means by which the BRRIT permits document that SAFER Bay's habitat restoration in the Ravenswood Pond Complex provides mitigation for the entire SAFER Bay program (both project-level and program-level reaches).
- The Cities of Menlo Park and East Palo Alto should submit a CLOMR to FEMA when designs are sufficiently advanced for FEMA review.

Table 3. Anticipated Permits, SAFER Bay Project

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type/ Anticipated Timeline[a]	Notes
Federal					
USACE	Sec. 404/10 Permit: NWP, LOP, or IP (CWA/RHA)	filldischarge into waters and/or wetlands within USACE jurisdiction (i.e., placement of structures or fill of any kind)	Aquatic Resources Delineation (of jurisdictional waters/wetlands) Biological Assessment (BA) for federally-listed species and habitats – *see NMFS & USFWS below* 404(b)(1) Alternatives Analysis to demonstrate the project is 'least environmentally damaging practicable alternative (LEDPA) Cultural Resources Assessment – s*ee SHPO below* NOTE: As federal lead agency[b], the USACE requires compliance with other related federal laws listed below, prior to permit issuance: • Sec. 7 FESA/MSA (per USFWS/ NMFS) • Sec. 106 NHPA (SHPO) • CZMA (BCDC) • NEPA (if applicable)	Individual Permit: ~12-18 months* *requires completion of other federal environmental compliance processes (see left) which may increase timeframes by 3-12 months	USACE will require an Individual Permit for SAFER Bay

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type and Anticipated Timeline[a]	Notes
Federal (cont.)					
NMFS	Sec. 7 Compliance (FESA) and MSA	Adverse effects (harm, harassment, injury, mortality) to federally-listed aquatic species or critical habitats, typically from in-water equipment operations, turbidity or WQ impacts, and hydroacoustic effects (e.g., pile driving)- not currently anticipated	*Biological Assessment* (BA) for federally-listed aquatic species, habitats, and Essential Fish Habitat (EFH)	~6-8 months	It is expected that NMFS will engage in formal consultation and issued a Biological Opinion to cover the potential for incidental take of federally-listed fish. The Biological Opinion will include EFH recommendations. Will require work windows for minimization of impacts to federally-listed listed fish. May require pre-construction surveys. May require mitigation for construction-related impacts and/or permanent loss of habitat/take of species though SAFER's proposed mitigation (tidal habitat restoration) should satisfy any such compensatory mitigation requirements. Some example fish species regulated by NMFS with potential to occur[c]: green sturgeon and their CH; Central California Coast steelhead and their CH; Central Valley fall-run Chinook salmon; eelgrass; EFH.
	MMPA Compliance *not currently anticipated to be necessary*, if no in-water pile driving or dredging is proposed	Adverse effects (harm, harassment, injury, mortality) to non-listed marine mammals, typically from equipment operations and hydroacoustic effects from impact and/or vibratory hammers - *not currently anticipated to result*	Analysis of effects, including hydroacoustic calculations *not currently anticipated to be necessary*	Permit (IHA/LOA, for construction-related 'take'): ~6-12 months. *not currently anticipated to be necessary*	Take permit (IHA or LOA) is not likely to be necessary (assuming adequate avoidance related to in-water impacts, no in-water pile driving or dredging) Species with potential to occur[c]: non-listed marine mammals including Pacific harbor seals.

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type and Anticipated Timeline[a]	Notes
Federal (cont.)					
USFWS	Sec. 7 Compliance (FESA)	Adverse effects (harm, harassment, injury, mortality) to federally-listed species and/or critical habitats	Biological Assessment (BA) for federally-listed species and habitats	Biological Opinion (for construction-related 'take'): ~8-12 months	Take permit (Biological Opinion) anticipated Will require work windows for minimization of impacts to federally-listed species. May require pre-construction and/or protocol-level surveys. May require mitigation for construction-related impacts and/or permanent loss of habitat/take of species, though SAFER's proposed mitigation (tidal habitat restoration) should satisfy any such compensator mitigation requirements. Some example species with potential to occur[c]: salt marsh harvest mouse, California Ridgway's rail, western snowy plover, longfin smelt

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type and Anticipated Timeline[a]	Notes
State					
SWRCB/ RWQCB	401 WQ Cert/WDRs (CWA/Porter-Cologne)	In-water work; discharge of structures or fill in waters; potential for degradation of waters of the State and their designated Beneficial Uses (per Basin Plans)	Aguatic Resources Delineation (of jurisdictional waters/wetlands including all waters of the state) Impact assessment for WQ/designated Beneficial Uses Hydrologic study(ies) NOTE: San Francisco Bay RWQCB requires an Alternatives Analysis to demonstrate the project is 'least environmentally damaging practicable alternative' (LEDPA), regardless of USACE permit type	~8-12 months	**Alternatives Evaluation** Waters of the State include all federal waters plus additional areas not federally regulated. The LEDPA evaluation requires an evaluation of alternatives. CEQA must be completed to issue a permit; SWRCB/RWQCB is a Responsible Agency pursuant to CEQA but permitting will require additional evaluation if not included in CEQA. Will require mitigation for any 'net loss' of waters/wetlands, in compliance with State's 'No Net Loss' policy[f]
	NPDES Construction General Permit Compliance (CWA)	Ground disturbance >1acre	Storm Water Pollution Prevention Plan (SWPPP) Post Construction Stormwater Management Plan		Construction contractor (a licensed QSP/QSD) typically prepares SWPPP and applies for confirmation of coverage, just prior to construction
			Post Construction Stormwater Management Plan		Part of 401 submittal

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type and Anticipated Timeline[a]	Notes
State (cont.)					
CDFW	California Fish and Game Code 1600 et seq.	Substantially divert or obstruct natural flow or substantially change the bed, channel, or bank of any river, stream, or lake	Mapping of CDFW jurisdictional habitats/areas.	Lake and Streambed Alteration Agreement (LSAA)	Several earthen stormwater drainage features on landward side of existing levees likely fall within CDFW jurisdiction, and would be modified by SAFER Bay, likely requiring an LSAA Needs completed CEQA to issue permit; CDFW is a Responsible Agency pursuant to CEQA
	Sec. 2080/2081 Compliance (CESA)	Adverse effects (harm, harassment, injury, mortality) to state-listed species or critical habitats	Incidental Take Permit (ITP) application for state-listed species and/or habitats if necessary	ITP: ~8-12 months *if necessary*	Project expected to result in some construction-related short-term potential for take of CESA listed species. Seek *'Consistency Determination'* (CD) with federal B.O. for co-listed species (listed under FESA and CESA) or *Incidental Take Permit* (ITP) for CESA-listed spp. That are not fully protected (FP), such as longfin smelt No ITPs can be issued for FP species such as salr marsh harvest mouse and California Ridgway's rail, and California black rail, so adequate avoidance measures must be developed for FP species.
	California Fish and Game Code Section 3503 Compliance	Killing or destroying migratory birds, bird nests, and eggs Potential for bird strikes	Avoidance and Minimization Measures designed to protect Fully-Protected Species		Best to **restrict vegetation/tree removal to outside nesting bird season (remove from Sept 1 – Jan 31)to minimize** effects on protected birds. May require pre-construction and/or protocol-level surveys. May require mitigation for construction-related impacts and/or permanent loss of habitat/take of species. Some example CESA listed species with potential to occur[c]: Salt Marsh Harvest Mouse, CA Ridgway's Rail, CA black rail, longfin smelt.

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type and Anticipated Timeline[a]	Notes
State (cont.)					
SHPO	Sec. 106 Compliance (NHPA)	Adverse effects to tribal, archaeological, or historic resources, if present	*Inventory of Resources, Findings of Effects Report* (including tribal coordination, archaeology, and historic resources) suitable for use in Sec. 106 consultation	~3-12 months	
State Lands Commission (SLC)	Lease Amendment	Construction and/or structures within leased land. Known leases within the project vicinity are: 1.U.S. Department of the Interior, Fish and Wildlife Service including Ravenswood Slough (1981). General Lease – Public Agency Use, Lease No. PRC 6045.9, with the San Francisco Bay National Wildlife Refuge, The lease will expire August 31, 2047. 2.Flood Slough with the Menlo Park Sanitary District (1979), Public Agency Use, No. PRC 5468.9, for the sanitary pumping station. This lease will expire on May 31, 2044. The Project area may contain other leases or existing facilities.	Final Design Plans, stamped Engineering Design Drawings, and a contractor's Work Execution Plan (prior to start of construction) Proof of Property Ownership Current NPDES Permit (and for life of Lease) Spill Prevention and Control Plan Litter and Waste Management Plan Environmental Justice evaluation Pre-construction species surveys Avoidance measures for sensitive species (incl. Western Snowy Plover, SMHM, Ridgway's Rail, etc.)	~6-18 months +	Needs completed CEQA to issue Amendment; SLC is a Responsible Agency pursuant to CEQA. Will require restoration of temporary construction-related impacts. Will require legal team review from both applicant and SLC. Other information/studies required (see left) informed by recent Lease Amendment (Lease No. PRC 9143.9) for same/nearby property.

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval Type	Trigger	Information or Studies Required	Permit Type and Anticipated Timeline[a]	Notes
Regional					
BCDC	Regionwide Permit (McAteer-Petris Act, San Francisco Bay Plan [e])	In-water work; discharge of structures or fill in or above waters of the Bay; landside improvements within the 100-ft Shoreline Band	Final Design Plans (prior to start of construction) Proof of Property Ownership Landscaping Plans Public Access Plan Detailed Public Improvements Plans Utilities and Emergency Response Plans Traffic and Circulation (including bicyclist and pedestrian) Plans Sea Level Rise Adaptation Study Demonstration of consistency with the CZMA and Bay Plan, as amended[e]	~12-18 months* *requires completion of other local, state, and federal environmental compliance processes May require the iterative DRB/ECRB review processes, which may increase timeframes to 12-18 months + - *per BRRIT Pre-Application Meeting input, <u>not currently anticipated to be necessary</u>* See also *Notes* on right	**Major Permit is** required- along with presenting project to BCDC Design Review Board. BCDC has requested joint presentation with Harvest Properties, the first project in the Brownfield Redevelopment area in East Palo Alto. As a regional planning and land use agency, BCDC requires compliance with other related federal, state, and regional laws (including CEQA). Technically a**ll other permits (404, 401, 1600, SLC, CEQA, etc.) must be issued and included in a 'complete application' to BCDC**, to begin BCDC permit processing (though BRRIT's BCDC staff typically agree to begin review/processing prior to having all final permits in-hand). As such, <u>the BCDC permit process usually ends last (or second to last, with USACE being last) and usually takes the longest to complete.</u> BCDC makes a CZMA consistency determination as a part of their final Permit action Will likely require mitigation for any 'net loss' of waters/wetlands (including overwater shading). However, the 2019 Bay Fill fo Habitaqt Amendment to the Bay adds flexibility for in- Bay fill used for habitat projects in tidal waters.[e]
	Consistency - Coastal Zone Management Act (CZMA)	Activities and improvements within the coastal zone (local CZMA authority delegated from CA Coastal Commission to BCDC)			

TABLE 3 (CONTINUED)
SAFER BAY PROJECT
ANTICIPATED PERMITS AND APPROVALS REQUIRED

NOTES:

[a] Timeline assumes a 'complete application' has been submitted. Does not include agency delays, which are common and can result from lack of staffing, workload challenges, budget or hiring freezes (including government shutdowns), and other unforeseen delays outside of ESA and the Project proponent's control. Also does not include time spent awaiting other agency permits or approvals required prior to final permit issuance.

[b] For the purposes of this Memo it is assumed that the USACE will serve as the federal lead agency. However, if the Project receives significant federal funds (e.g., from the EPA), this assumption may no longer be valid.

[c] This species list is tentative, and based upon other nearby studies; it has not been verified for the site.

[d] Several resource agencies (such as USFWS, NMFS, CDFW) have existing 'programmatic' consultations, which are issued to authorize certain common activities if they meet the specific terms and conditions of the programmatic consultation. See *Recommended Permitting Strategies* #3 below for more detail.

[e] The BCDC amended its San Francisco Bay Plan (Bay Plan) to allow for additional flexibility for 'Bay fill' placed for habitat restoration. See *Recommended Permitting Strategies* #1f below for more detail, including BCDC's position on related adverse effects, 'type conversion,' and a planned new Regionwide Permit for restoration.

[f] The EPA Region 9, in coordination with the USACE and SF Bay RWQCB, is in the process of developing is scientific and/or policy changes regarding 'type conversion' associated with multi-objective restoration projects, including changing the agencies' approaches to assessing 'type conversion' and related permitting and mitigation requirements under the CWA.

ACRONYMS:

BCDC	San Francisco Bay Conservation and Development Commission	MRP	Municipal Regional Permit
BPA	Bay Plan Amendment	MSA	Magnuson-Stevens Fishery Conservation and Management Act
BRRIT	Bay Restoration Regulatory Integration Team	NEPA	National Environmental Protection Act
CDFW	California Department of Fish and Wildlife	NHPA	National Historic Preservation Act
CEQA	California Environmental Quality Act	NMFS	National Marine Fisheries Service
CESA	California Endangered Species Act	NLTAA	Not Likely to Adversely Affect
CZMA	Coastal Zone Management Act	NPDES	National Pollutant Discharge Elimination System
EFH	Essential Fish Habitat	NWP	Nationwide Permit
FAA	Federal Aviation Administration	QSP/QSD	Qualified SWPPP Practitioner/Developer
FESA	Federal Endangered Species Act	RWQCB	Regional Water Quality Control Board
IHA	Incidental Harassment Authorization	SHPO	State Historic Preservation Officer
IP	Individual Permit	SMHM	Salt Marsh Harvest Mouse
LOA	Letter of Authorization	SWPPP	Stormwater Pollution Prevention Plan
LOP	Letter of Permission	USACE	U.S. Army Corps of Engineers
LTMS	Long Term Management Strategy	USCG	U.S. Coast Guard
MBTA	Migratory Bird Treaty Act	USEPA	U.S. Environmental Protection Agency
MMPA	Marine Mammal Protection Act	WDRs	Waste Discharge Requirements
		WQ Cert	Water Quality Certification

SOURCE: Adapted from Environmental Science Associates (ESA), 2019

Table 4. List of Supporting Studies, SAFER Permitting

SAFER BAY PROJECT
SUPPORTING STUDIES EXPECTED TO BE REQUIRED FOR PERMITTING

Study	Permit or Approval Type Requiring It	Notes
Aquatic Resources Delineation Report Formerly called a 'Wetland Delineation'	USACE Section 404/10, RWQCB Section 401 Cert/WDRs, and BCDC Permit	Used to quantify and characterize existing features, and to calculate project impacts.
Biological Assessment (BA)	USACE Section 404/10 – to demonstrate FESA compliance; SLC Lease	Assesses potential presence of, and project effects on, federally listed species and/or habitats (protected by NMFS and/or USFWS)
CDFW Avoidance Memo	CDFW Concurrence with no take for Fully Protected Species; SLC Lease	Memo documenting proposed avoidance and/or minimization measures to ensure no take of fully protected species (ideally to be developed in coordination with CDFW)
Protocol-level species surveys	USFWS/NMFS Biological Opinion or Concurrence (for FESA compliance), CDFW CESA compliance; SLC Lease	May be required to support USFWS/NMFS decisions about listed species presence and/or impacts. May have seasonal restrictions and need to be conducted well in advance of permit application preparation. May be required to support determination that no CDFW ITPO is required for state-listed CESA-protected species.
Geomorphic Marsh Evolution	BRRIT request, 2022	The BRRIT wants to know if the marsh may have the capacity to aggrade and if so, may have some adaptive capacity for sea level rises.
Site Specific Refugial Habitat Evaluation, Faber and Laumeister Marshes	BRRIT request, 2022	The BRRIT wants to know what are the optimal location for refugial habitat and recommended a study to evaluate site specific locations so that these may be proposed as part of the project with sound basis.
Rare Plant Surveys	USFWS Biological Opinion or Concurrence (for FESA compliance)	May be required to support USFWS decisions about rare plant presence and/or impacts. May have seasonal restrictions and need to be conducted well in advance of permit application preparation.
Cultural Resources Assessment/Section 106 Report	USACE Section 404/10 – to demonstrate NHPA compliance	Assesses potential presence of, and project effects on, cultural resources such as tribal, archaeological, or historic architectural resources (regulated by SHPO)
Calculation of Project Impacts to Aquatic Resources	USACE Section 404/10, RWQCB Section 401 Cert/WDRs, and BCDC Permit using different definitions of state and federal waters	Overlay Project Design (including cut and fill) over Aquatic Resources Delineation polygons (and other key jurisdictional datum like BCDC '100 ft Shoreline Band). Distinguish between permanent and temporary impacts.
Comparison of Pre-and Post-Project Aquatic Resource Functions and Services	USACE Section 404/10, RWQCB Section 401 Cert/WDRs, and BCDC Permit using different definitions of state and federal waters	Used to demonstrate project benefits, justify project impacts, and calculate the need for compensatory mitigation (if applicable)
Hydrology Report	RWQCB Section 401 Cert/WDRs, BCDC Permit	Must include interior drainage evaluation and emergent groundwater with SLR. Required to demonstrate adequate design considerations for erosion, water treatment, or hydrologic support for target restoration species.
SWPPP	SWRCB Construction General Permit and Post Construction Plan	Required for construction projects > 1ac, to demonstrate adequate construction-period erosion protection and provide rationale for post- construction storm water quality treatment.
Spill Prevention and Control Plan	SLC Lease	

TABLE 4 (CONTINUED)
SAFER BAY PROJECT

SUPPORTING STUDIES EXPECTED TO BE REQUIRED FOR PERMITTING

Study	Permit or Approval Type Requiring It	Notes
Litter and Waste Management Plan	SLC Lease	
Environmental Justice evaluation	SLC Lease	Per a recently implemented Policy: https://www.slc.ca.gov/envirojustice/
Public Access Plan; Public Improvements Plan	BCDC Permit	To demonstrate pedestrian and bicycle access routes, amenities (trash, signage, etc.)
Water Board Alternatives Evaluation	401 Permit	To demonstrate pedestrian and bicycle access routes, amenities (trash, signage, etc.)
Interior Drainage Report and Emergent Groundwater Evaluation	FEMA	Emergent groundwater may be a separate report
Operation and Maintenance Plan	401 and FEMA	Water Board may allow O&M Plan to be finalized after construction and as-Builts are completed.
Sea Level Rise Adaptation Study	BCDC Permit	To demonstrate adequate calculation of and design measures to respond to SLR
Landscaping Plans, Utilities and Emergency Response Plans	BCDC Permit	May not be required for this project/site; to confirm with BCDC
Traffic and Circulation Plans	BCDC Permit	May not be required for this project/site; to confirm with BCDC
Alternatives Analysis (per SF Water Board guidance and USACE 404b1 Guidelines)	RWQCB Section 401 Cert/WDRs, USACE Section 404/10 and BCDC Permit	Proposed project is required to demonstrate proposed project is the 'least environmentally damaging practicable alternative" which accomplishes the stated project purpose,
Obstruction Aeronautical Study	FAA Guidelines/approval (on airport land or adjacent)	
FAA Obstruction Evaluation/ Airport Airspace Analysis (Form FAA 7460-1 – Notice of Proposed Construction or Alteration	FAA Guidelines/approval (on airport land or adjacent)	

Source: Adapted from adapted from Environmental Science Associates (ESA) 2019

References

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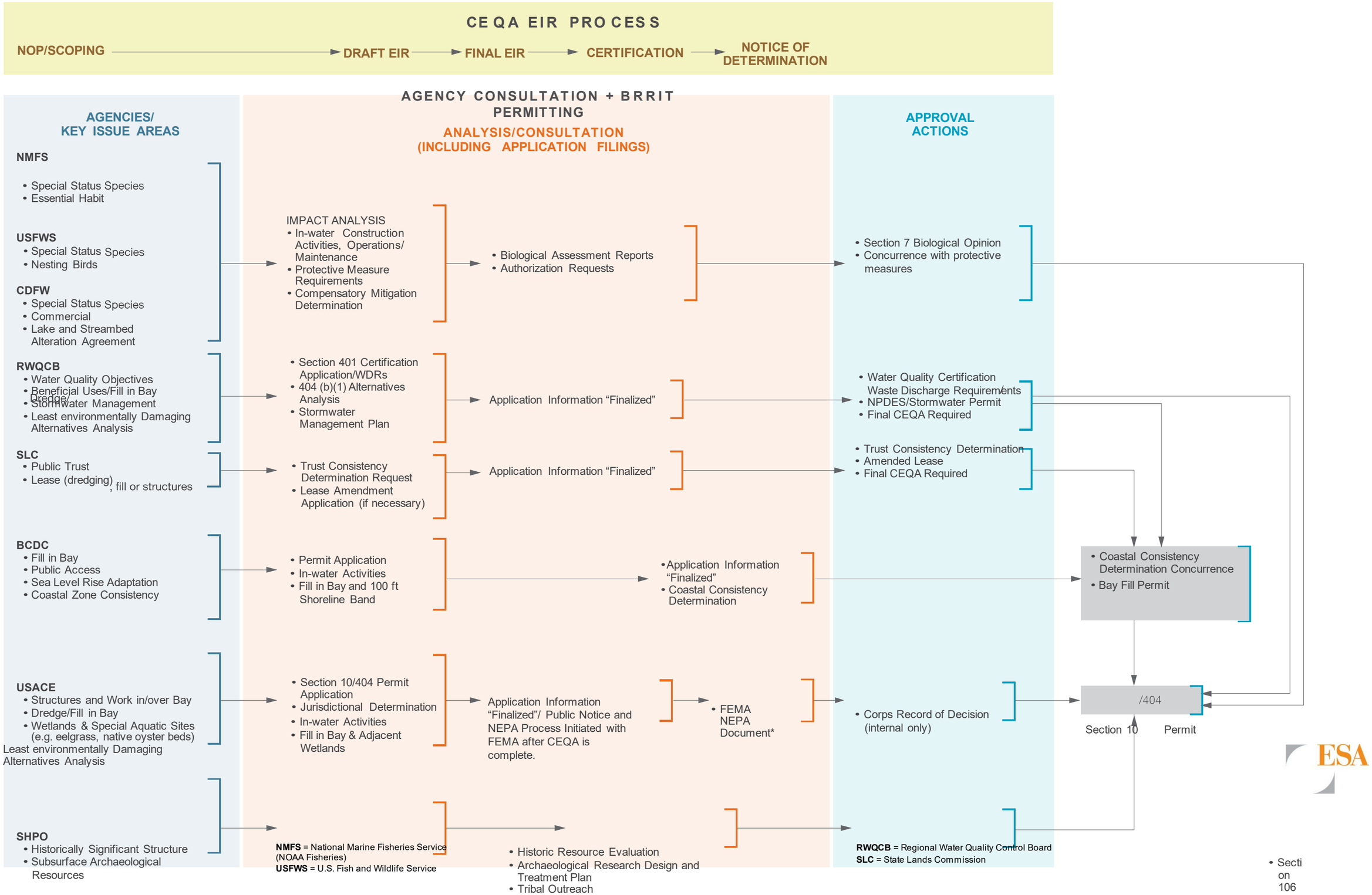
Figure 4. SAFER Project Permitting Flow Chart



Concurrence Request

• Section 106 Concurrence Determination

BCDC = San Francisco Bay Conservation and Development Commission
USACE = U.S. Army Corps of Engineers

Figure 2 SAFER Bay Project CEQA and Permitting Flow Chart

Source: ESA 201

CDFW = California Department of Fish and Wildlife

SHPO = State Historic Preservation Office

BRRIT=Bay Area Regulatory Integration Team

Attachments

A – FEMA Endangered Species Act Consultation with USFW, February 2022 and February 2023

B – Site Management Plans for Brownfield Redevelopment Areas, East Palo Alto

C– BRRIT Initial Consultation Permitting Comments and Responses

Attachment A

FEMA Endangered Species Act Consultation
with USFW, February 2022 and February 2023

FEMA Endangered Species Act Compliance Memorandum
HMGP-4344-541-93 Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b (geotechnical investigations)
Subrecipient: City of East Palo Alto

On behalf of City of East Palo Alto, I have read the requirements from FEMA's Biological Assessment (BA) to the US Fish and Wildlife Service San Francisco Bay-Delta Fish and Wildlife Office and the associated U.S. Fish and Wildlife Service Letter of Concurrence (LOC) for the FEMA Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b (geotechnical investigations) that are specific to this project and plan to implement them accordingly. I understand that failure to implement the required General Avoidance and Minimization Measures (AMMs) and Species-Specific Conservation Measures (CMs) may jeopardize funding for the subject project. The City of East Palo Alto accepts implementation of the required measures described in the BA and LOC as a stipulation of funding for HMGP-4344-541-93 Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b (geotechnical investigations).

Humza Javed	City Engineer
Print	**Title**
	3/3/2022
Signature	**Date**

FEMA Endangered Species Act Compliance Memorandum
HMGP-4344-541-93 Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b (geotechnical investigations)
Subrecipient: City of East Palo Alto

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

February 28, 2022

Kevin Murray
Senior Project Manager
San Francisquito Creek Joint Powers Authority
615-B Menlo Avenue
Menlo Park, CA 94025

Subject: Notice of Endangered Species Act Compliance
FEMA-HMGP 4344-541-93 Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b
Subrecipient: City of East Palo Alto

Dear Mr. Murray:

FEMA Environmental and Historic Preservation (EHP) received the enclosed Letter of Concurrence signed by the U.S. Fish and Wildlife Service (USFWS) San Francisco Bay-Delta Fish and Wildlife Office. This completes the Section 7 consultation for the following Project:

FEMA Project #	Title	ESA Effects Determination
HMGP 4344-541-93	Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b	USFWS: May affect, but is not likely to adversely affect (**NLAA**) salt marsh harvest mouse (*Reithrodontomys raviventris*) (species)
HMGP 4344-541-93	Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b	USFWS: May affect, but is not likely to adversely affect (**NLAA**) California clapper rail1 (*Rallus longirostris obsoletus*) (species)
HMGP 4344-541-93	Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b	USFWS: May affect, but is not likely to adversely affect (**NLAA**) California least tern (*Sterna antillarum browni*) (species)
HMGP 4344-541-93	Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER) Bay Project, Phase 1b	USFWS: May affect, but is not likely to adversely affect (**NLAA**) the western snowy plover (*Charadrius nivosus nivosus*) (species)

The proposed actions have been covered under the enclosed Letter of Concurrence issued by the U.S. Fish and Wildlife Service San Francisco Bay-Delta Fish and Wildlife Office (SFBDFWO) February 9, 2022. The Letter of Concurrence was in response to a Biological Assessment (BA) submitted to the SFBDFWO. The BA describes the potential impacts and contains a list of applicable General Avoidance and Minimization Measures (AMMs) and Species-Specific Conservation Measures (CMs) which the City of East Palo Alto (Subrecipient) shall implement for the duration of the proposed project. It is the responsibility of the Subrecipient to comply with all applicable AMMs, CMs, and terms and conditions of the BA and Letter of Concurrence.

Failure to comply with any of the AMMs, CMs, and terms and conditions listed within the BA may jeopardize federal assistance including funding.

Please sign the enclosed ESA Compliance Memorandum confirming receipt and understanding of the ESA compliance requirements and return to FEMA EHP by Friday March 4, 2022.

If you require additional information related to this correspondence, please contact Scott Mullner at scott.mullner@fema.dhs.gov or (202) 893-0097. For information regarding the USFWS concurrence, contact Valary Bloom, Senior Fish and Wildlife Biologist valary_bloom@fws.gov (916) 930-2645 or Kim Squires, SFBD Office Section 7 Division Chief (kim_squires@fws.gov) or telephone (916) 930-5634.

Sincerely,

David R. Cohen for
Kenneth Sessa
Acting Environmental Officer
FEMA Region IX

Attachments:
Endangered Species Act Compliance Package Transmittal Letter
FEMA's Letter Requesting Informal Consultation to USFWS SFBDFWO
USFWS Letter of Concurrence (ESA Section 7 Informal Consultation – SFBDFWO)
HMGP-4344-541-93 Biological Assessment SAFER Bay Project Phase 1b San Mateo County, City of East Palo Alto, CA
ESA Compliance Memorandum (to sign and return)

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

January 13, 2022

IN REPLY REFER TO:
DC-HMGP-4344-541-93

Valary Bloom
Senior Fish and Wildlife Biologist
Bay Restoration Regulatory Integration Team
San Francisco Bay- Delta Fish and Wildlife Office
650 Capitol Ave, Suite 8-300
Sacramento, CA 95814

Re: City of East Palo Alto – SAFER Bay Project Phase 1b, HMGP-4353-002-029
Request for Informal Consultation under Section 7 of the ESA with USFWS

Dear Ms. Bloom

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance under its Hazard Mitigation Grant Program (HMGP) to the City of East Palo Alto (Subapplicant). The Proposed Project would conduct geotechnical explorations as Phase 1b of the Strategy to Advance Flood protection, Ecosystems and Recreation (SAFER) Bay project, located on the western edge of San Francisco Bay.

With this letter, FEMA initiates informal consultation on the Proposed Project with the USFWS under Section 7 of ESA of 1973, as amended (16 U.S.C. § 1536). Accordingly, FEMA is submitting the enclosed Biological Assessment (BA) for your review of the Proposed Project. FEMA has determined that with implementation of the avoidance and minimization measures described in the BA, the Proposed Project may have the potential to affect federally listed species and to occur in the Action Areas and their critical habitat. Table 1 provides a summary of the ESA effect determinations on federally listed species and their critical habitat.

Table 1: Summary of Effects Determination
HMGP-4344-541-93, SAFER Bay Project, Phase 1b
City of East Palo Alto

Common Name/ (Scientific Name)	Listing Status[1]	Critical Habitat (CH)	Determination
Salt marsh harvest mouse (*Reithrodontomys raviventris)*	FE	No effect (no Critical Habitat designated)	may affect, but is not likely to adversely affect (**NLAA**)
Ridgway's rail (*Rallus obsoletus obsoletus*)	FE	No effect (no Critical Habitat designated)	may affect, but is not likely to adversely affect (**NLAA**)
California least tern (*Sterna antillarum browni*)	FE	No effect (no Critical Habitat designated)	may affect, but is not likely to adversely affect (**NLAA**)

Western snowy plover (*Charadrius nivosus nivosus*)	FT	No effect	may affect, but is not likely to adversely affect (**NLAA**)

[1] FT = Federally Threatened
[2] FE = Federally Endangered

FEMA requests your response with a Letter of Concurrence for the Proposed Project. If you have questions about the Proposed Project or FEMA's request, please contact Scott Mullner at (202) 893-0097 or by email at scott.mullner@fema.dhs.gov. Thank you in advance for your assistance.

Sincerely,

David R. Cohen
for Michael Audin
Acting Environmental Officer
FEMA Region IX

Enclosure

Attachment 1: Biological Assessment and Appendices for City of East Palo Alto – SAFER Bay Project Phase 1b, HMGP-4353-002-029

Biological Assessment

SAFER Bay Project Phase 1b

San Mateo County, City of East Palo Alto, CA

HMGP-4344-541-93

January 2022

Federal Emergency Management Agency
Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, CA 94607

This document was prepared by

CDM Smith
200 Montgomery Street, Suite 1418
San Francisco, CA 94104

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Attachments

Acronyms

AA	Action Area
AMM	avoidance and minimization measures
BA	Biological Assessment
BMP	best management practice
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CLT	California least tern
CPT	cone penetration testing
CNDDB	California Natural Diversity Database
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
PBO	programmatic biological opinion
RR	Ridgway's rail
SAFER	Strategy to Advance Flood protection, Ecosystems and Recreation
SFWO	Sacramento Fish and Wildlife Office
SMHM	salt marsh harvest mouse
USFWS	United States Fish and Wildlife Service
WSP	western snowy plover

EXECUTIVE SUMMARY

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide federal financial assistance—through the California Governor's Office of Emergency Services (Applicant)—to the City of East Palo Alto, California (Subapplicant) to conduct geotechnical explorations as Phase 1b of the Strategy to Advance Flood protection, Ecosystems and Recreation (SAFER) Bay project, located on the western edge of San Francisco Bay. The SAFER Bay Phase 1b (Proposed Project), would occur within the City of East Palo Alto in San Mateo County, California. These activities would be funded by FEMA's Hazard Mitigation Grant Program (HMGP), which is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

The Subapplicant applied for FEMA funding assistance to construct 6,800 feet of new flood protection levees and 5,300 feet of ecotone habitat in East Palo Alto, San Mateo County, California, adjacent to San Francisco Bay. The SAFER Bay Project would mitigate frequent flooding in an area of East Palo Alto where more than 1,500 structures and 5,000 residents are in the 100-year tidal floodplain special flood hazard area. Phase 1b of the SAFER Bay Project includes only the geotechnical survey work necessary to complete the design and is the only proposed action covered under this Biological Assessment (BA). The Subapplicant proposes to conduct subsurface exploration at 15 sites along the proposed levee alignment.

FEMA has prepared this BA to evaluate the potential effects of the Phase 1b project (geotechnical borings only) on species that are listed or proposed for listing under the Endangered Species Act of 1973 (ESA). Potential effects on federally listed species have been evaluated in accordance with Section 7 of the ESA. Measures to avoid and/or minimize take or disturbance to potentially affected species are included in this BA.

Summary of Proposed Project

The proposed project footprint comprises all the areas that would be directly disturbed by implementation of the proposed project, including staging areas, access routes, and all areas associated with the proposed activities.

The proposed project would conduct subsurface exploration at 15 sites along the proposed levee alignment. Geotechnical explorations would occur at seven sites and cone penetration testing (CPT) would occur at eight sites. Five borings and three CPTs are planned for the northern portion of the project area, north of CA State Route 84 and around an existing Pacific Gas and Electric (PG&E) Substation. Two borings and five CPTs are planned for the southern portion of the project area, along the paved Bay Trail.

Access to geotechnical investigation locations would be along existing roads, trails, and on top of levees. No vegetation would be removed from the geotechnical investigation locations and no wetlands would be impacted. Impacts would be limited to existing disturbed and compacted areas, dominated by bare ground and non-native vegetation. Two paved staging areas are planned for Phase 1b, one within the existing PG&E Substation facility to the north and one in the parking lot of Cooley Landing Park.

Phase 1b would occur over a 3-week period. During this time, noise would be generated from the boring and CPT drill rigs.

FEMA has proposed best management practices (BMPs) and general and species-specific avoidance and minimization measures (AMMs) that would be implemented to reduce potential effects to listed species.

Federally Listed Species and Critical Habitat Potentially Affected

Based on a search of federal and state databases, seven federally listed plant species and 15 federally listed wildlife species were identified as having potential to occur in the vicinity of the two Action Areas (AAs). Upon completion of a desktop analysis and the existing habitat conditions, it was determined that no federally listed plant species have the potential to occur in the AAs. The review identified four federally listed wildlife species that may have potential to occur in the project area: the endangered salt marsh harvest mouse (SMHM, *Reithrodontomys raviventris*), the endangered Ridgway's rail (aka California clapper rail) (RR, *Rallus obsoletus obsoletus*), the endangered California least tern (CLT, *Sterna antillarum browni),* and the threatened Western snowy plover (WSP, *Charadrius nivosus nivosus*). The north AA overlaps with designated critical habitat for the WSP. Potential effects to the SMHM, RR, CLT, WSP, and WSP critical habitat are evaluated in this BA.

Summary of Effects to Federally Listed Species

The proposed project occurs adjacent to potentially suitable habitat for one listed mammal species and three listed bird species. The northern AA overlaps designated critical habitat for the WSP. The SMHM, RR, CLT, and WSP are reasonably likely to occur in the AAs.

The effects to federally listed species identified as having the potential to occur in the AA are summarized as follows:

- ***May affect, but is not likely to adversely affect*** the SMHM
- ***May affect, but is not likely to adversely affect*** the RR
- ***May affect, but is not likely to adversely affect*** the CLT
- ***May affect, but is not likely to adversely affect*** the WSP
- ***No effect*** on WSP critical habitat

The implementation of BMPs and general and species-specific AMMs, as described in Sections 2.4 and 2.5, would avoid or reduce potential adverse effects to these species or on critical habitat to the maximum extent practicable.

SECTION 1. INTRODUCTION

1.1 Purpose and Need

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide federal financial assistance—through the California Governor's Office of Emergency Services (Applicant)—to the City of East Palo Alto, California (Subapplicant) to conduct geotechnical explorations as Phase 1b of the Strategy to Advance Flood protection, Ecosystems and Recreation (SAFER) Bay project, located on the western edge of San Francisco Bay. The SAFER Bay Project would construct 6,800 feet of new flood protection levees and 5,300 feet of ecotone habitat in East Palo Alto, San Mateo County, California, adjacent to San Francisco Bay. The project would mitigate frequent flooding in an area of East Palo Alto where more than 1,500 structures and 5,000 residents are within the 100-year tidal floodplain special flood hazard area. Phase 1b of the SAFER Bay Project, evaluated in this BA, would conduct subsurface exploration at 15 sites along the proposed levee alignment to collect geotechnical data that would inform the engineering analyses and design. Geotechnical exploratory boring would occur at seven sites and cone penetration testing (CPT) would occur at eight sites and is the only activity proposed for coverage under this assessment. Further consultation would be required for Phase 2 in the construction of the new flood protection levees and ecotone habitat.

1.2 Federal Nexus

FEMA's financial assistance would be provided through the Hazard Mitigation Grant Program (HMGP). The HMGP provides funding for eligible mitigation measures that seek to reduce or eliminate long-term risk to people and property from future disasters, thus resulting in safer communities that are less reliant on external financial assistance.

Under Section 7 of the Endangered Species Act (ESA), federal agencies are required to evaluate the potential for effects to federally listed species and their habitats. The purpose of this Biological Assessment (BA) is to review the proposed project (i.e., the federal action) in sufficient detail to determine if it may affect any federally listed threatened or endangered fish, plant, or wildlife species; species proposed for listing; or designated critical habitat.

All federal agencies are required to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) in accordance with Section 7(a)(2) of the ESA regarding potential effects to federally listed or proposed species. The federal agency that is initiating or funding the "action" in question must ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of a federally listed threatened or endangered species or a species proposed to be listed, or result in the destruction or adverse modification of designated or proposed critical habitat.

1.3 Project Location

The proposed project area is in the City of East Palo Alto, San Mateo County, California. The planned geotechnical investigations would be grouped into two Action Areas (AAs)—a northern AA and a southern AA. In the northern AA, the borings and CPTs would be placed adjacent to California State Highway 84 (Bayfront Expressway) and around the perimeter of the Pacific Gas and Electric (PG&E) substation to the north of the Expressway. In the southern AA, the borings

and CPTs would be placed along the Bay Trail north of San Francisquito Creek and to the northwest of Cooley Landing along the western border of Ravenswood Preserve (Figures 1 and 2).

Figure 1. Project Vicinity

Figure 2. Project Vicinity (zoomed in street view)

SECTION 2. PROPOSED ACTION

2.1 Project Description

The Proposed Action is to conduct geotechnical exploration to support design of the SAFER Bay Project, for which Phase 2 would include construction of 6,800 feet of new coastal flood protection levees and 5,300 feet of transitional ecotone habitat in East Palo Alto, California to improve flood protection and enhance existing wetland ecosystems along San Francisco Bay. The SAFER Bay Project would mitigate flooding on the west side of the bay in an area of East Palo Alto where more than 1,500 structures and 5,000 residents are within the 100-year tidal floodplain. The 1,500 structures include homes, apartments, businesses, schools, churches, parks, an electrical substation, and a stormwater drainage facility. The proposed levee would protect this area from the frequent flooding it currently experiences. The SAFER Bay Project would also help to protect primary marsh habitat on the bay side (east side) of the levee by reducing backflows into the bay during floods. The proposed improvements would reduce tidal flood risk and future risk of flooding from projected sea level rise. The new levee would be constructed with a minimum top elevation of 5 feet above the base flood elevation. The SAFER Bay Project comprises the following phases and tasks:

Phase 1a – Engineering and design, public outreach, geotechnical boring

Phase 1b – Geotechnical investigation and final design development

Phase 2 – Property acquisition and construction

This BA is for Phase 1b of the SAFER Bay Project only. The proposed work would include geotechnical investigations at 15 sites, including seven borings and eight CPTs at the following locations:

- Seven sites are directly along or adjacent to California State Route 84, adjacent to Ravenswood Slough, and surrounding the perimeter of the PG&E Substation on the west side of the Dumbarton Bridge (Figure 3). Work in the northern AA includes five borings and three CPTs. Specific details are shown in Figure 3a.
- Remaining eight sites begin at the southern end of Ravenswood Open Space Preserve and are along the walking path (Bay Trail) south to north of the O'Conner Pump Station/ San Francisquito Creek (Figure 3). Work in the southern AA includes two borings and five CPTs. Specific details are shown in Figure 3b.

Two paved staging areas are planned for Phase 1b, one within the existing PG&E Substation facility to the north and one in the parking lot of Cooley Landing Park.

Methods:

- Fifteen borings would be drilled or pushed using CPT, 60 to 70 feet deep. Borings would be advanced with a rotary auger drill. During cone penetration testing, a CPT rig pushes a steel cone with a diameter between 3.6 and 4.4 centimeters, down vertically into the

ground at a controlled rate, measuring resistance of soil, soil pressure, and other geotechnical properties.

- Equipment would include truck-mounted drill rigs and CPT rigs for drivable locations and track-mounted rigs for locations that are more difficult to access.
- All work would be conducted in accordance with seasonal work windows for ESA-listed species. Regarding the three listed bird species, work would occur after September 15 and prior to February 1.
- Drill cuttings and fluids would be contained in drums and transported to a nearby temporary storage area.
- No vegetation would be removed, and no wetlands would be disturbed for the Phase 1b geotechnical survey work.
- Boring B-105 (Figure 3, 3a, and 4) is on USFWS Refuge Land. The Subapplicant would need to obtain a signature from CDFW (as the property owner) for a San Mateo County drilling notification permit. In addition, the Subapplicant would need to obtain a Special Use Permit from the USFWS.

2.2 Project Duration

Geotechnical boring/CPT work activities would occur throughout 3 weeks between September 15, 2022 and February 1, 2023. Different drill rigs and separate mobilizations are required for the borings and CPTs. It is estimated that two 5-day weeks (Monday through Friday) would be required to complete the borings (1 to 2 days [8-16 hours] at each location), and one 5-day week would be required to complete the CPTs (less than 1 day [8 hours] at each location). If the borings and CPTs are performed consecutively without a break in time, completion would require a total of approximately 3 weeks. If a break in time is scheduled between the boring and CPT operations, the total time for completion would be extended accordingly. A typical work week would be 7:00 am to 5:00 pm, Monday through Friday, holidays excluded. A full workday would be 8 to 10 hours, and a half-day would be 4 to 5 hours. Figures 3a and 3b depict the planned access routes for the geotechnical investigations.

Geotechnical exploration would be performed after September 15, when permissions and site access have been granted by property owners, permitting agencies, and reviewing agencies.

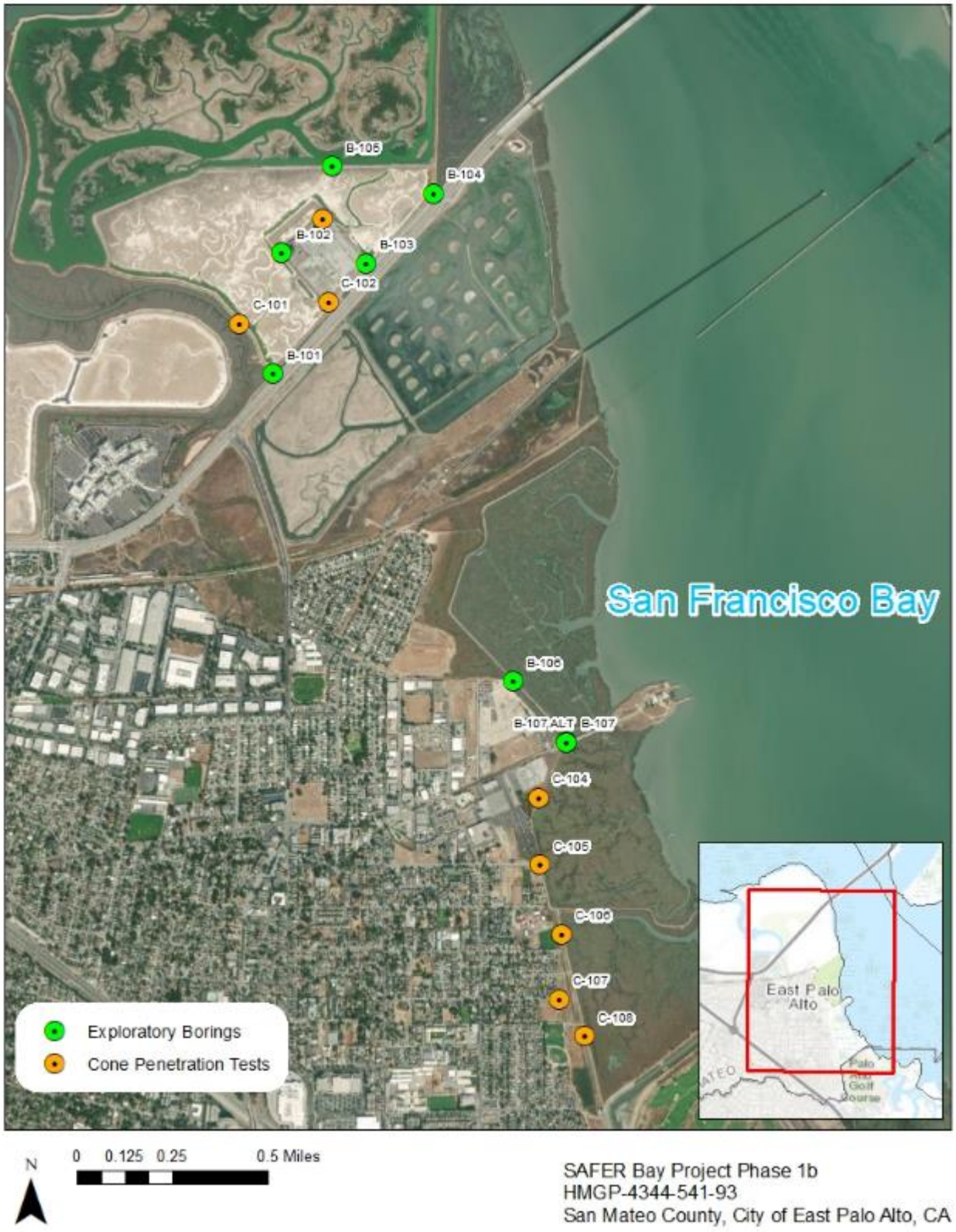


Figure 3. Proposed Geotechnical Exploration Overall Plan

Figure 3a. Proposed Geotechnical Exploration – North project area

Figure 3b. Proposed Geotechnical Exploration – South project area

2.3 Equipment

All proposed geotechnical exploration locations are on previously disturbed sites. No vegetation clearing equipment would be required to access or conduct drilling at these locations. The geotechnical exploration investigations are follow-on work to geotechnical investigations performed in the same area as part of the Feasibility Study Report. No new access routes will be created for drill rigs to reach the proposed boring or CPT locations. Drill rigs will access the boring locations via previously disturbed access roads, trails, road shoulders, and top of levees, to limit potential impacts on nearby vegetation and water quality. Figures 3a and 3b show the proposed access routes for all boring and CPT locations. No vegetated areas would be disturbed, and no equipment would be used off-levee or off-trail.

Vehicles to be used on roads, established trails, top of levees, and road shoulders for the project include employee vehicles, truck-mounted drill rigs, and track-mounted drill rigs. Drill crews would have equipment and supplies such as tubs, hoses, casings, drums, bags, and any other items associated with self-contained drilling operations. All boring/CPT-related equipment and materials would be stored at either the northern AA staging area, which is the City of Menlo Park Firefighting Training Facility, or at a location at the City of East Palo Alto Cooley Landing Park parking lot just east of the southern AA (Figures 3a and 3b). Both staging areas are paved surfaces with ample vehicular access. There will be no staging in the marsh or on the levees.

Borings would be advanced using self-contained mud rotary drilling methods. This would prevent drilling mud, fluids, fuel, and lubricants from entering nearby water and habitats. Drill rigs, equipment, and refueling would be kept on previously disturbed areas to limit adverse impacts on water and habitats.

2.4 Best Management Practices

The following best management practices (BMPs) will be implemented during all project-related activities:

- Limit the hours of operation to daytime hours on weekdays.
- Restrict vehicle and equipment parking in staging areas to paved areas to the extent practicable.
- Restrict all construction activities to the minimum footprint required within designated access routes and work areas.
- Borings will be advanced using mud rotary drilling methods.
- Drill rigs and drill crews will have equipment and supplies such as tubs, hoses, and casings, as appropriate, to provide a self-contained drilling system. This will limit drilling mud, fluids, fuel, and lubricants from entering nearby water and habitats.
- Drill rigs and equipment will be kept on previously disturbed areas to limit adverse impacts on water and habitats.

2.5 Avoidance and Minimization Measures

General (GEN) avoidance and minimization measures (AMMs) and AMMs specific to the listed species covered by this BA will be implemented during this project. Where noted, and to improve clarity, these AMMs have been modified to eliminate elements that are not applicable to this project.

2.5.1 General Avoidance and Minimization Measures

GEN AMMs provided in the Sacramento Fish and Wildlife Office (SFWO) programmatic biological opinion (PBO) to FEMA will be implemented (USFWS 2019) as appropriate. The GEN AMMs are numbered according to the system in the SFWO PBO and may not be sequential in this BA.

GEN AMM-3 Dust Control Measures (modified): To reduce dust, all traffic associated with the Subapplicant's construction activities will be restricted to a speed limit of 15 miles per hour when traveling off highways or on county roads.

GEN AMM-4 Spill Control Planning: Subapplicant will prepare a Spill Prevention and Pollution Control Plan to address the storage of hazardous materials and emergency cleanup of any hazardous material, and will be available on-site, if applicable. The plan will incorporate hazardous waste, stormwater, and other emergency planning requirements.

GEN AMM-5 Spill Prevention and Pollution Control Measures (modified): Subapplicant will exercise every reasonable precaution to protect covered species and their habitats from pollution caused by fuels, oils, lubricants, construction by-products, and pollutants such as construction chemicals, fresh cement, saw-water, or other harmful materials. Water containing mud, silt, concrete, or other by-products or pollutants from construction activities will be treated by filtration, retention in a settling pond, or similar measures. Construction pollutants will be collected and transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

No petroleum product chemicals, silt, fine soils, or any substance or material deleterious to covered species will be allowed to pass into or be placed where it can pass into a stream channel. There will be no side casting of material into any waterway.

The Subapplicant will store all hazardous materials in properly designated containers in a storage area with an impermeable membrane between the ground and the hazardous materials. The storage area will be encircled by a berm to prevent the discharge of pollutants to groundwater or runoff into the habitats of covered species. A plan for the emergency cleanup of any hazardous material, as well as adequate materials for spill cleanup, will be available and maintained on-site.

GEN AMM-6 Equipment Inspection and Maintenance: Well-maintained equipment will be used to perform the work and, except in the case of a failure or breakdown, equipment maintenance will be performed off-site. Equipment will be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and properly disposed. Fueling of equipment will be conducted in accordance with procedures to be developed in the Spill Prevention and Pollution Control Plan.

Vehicles and equipment that are used during the course of a project will be fueled and serviced in a "safe" area (i.e., outside of sensitive habitats) in a manner that will not affect covered species or their habitats. Spills, leaks, and other problems of a similar nature will be resolved immediately to prevent unnecessary effects on covered species and their habitats. A plan for the emergency cleanup of any hazardous material, as well as adequate materials for spill cleanup, will be available and maintained on-site.

GEN AMM-7 Fueling Activities: AMMs will be applied to protect covered species and their habitats from pollution caused by fuels, oils, lubricants, and other harmful materials. Vehicles and equipment that are used during project implementation will be fueled and serviced in a manner that will not affect covered species or their habitats. Machinery and equipment used during work will be serviced, fueled, and maintained on uplands to prevent contamination to surface waters. Fueling equipment and vehicles will be kept more than 200 feet away from waters of the United States. Exceptions to this distance requirement may be allowed for large cranes, pile drivers, and drill rigs if they cannot be easily moved.

GEN AMM-8 Equipment Staging: No staging of construction materials, equipment, tools, buildings, trailers, or restroom facilities will occur in a floodplain during flood season at the proposed project location, even if staging is only temporary.

GEN AMM-9 Materials Storage and Disposal (modified): All hazardous materials will be stored in upland areas, inside storage trailers and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use will be permitted, provided the same containment precautions are taken as described for hazardous materials storage. Once project construction is complete, all construction materials, wastes, debris, sediment, rubbish, trash, and fencing will be removed from the site and transported to an authorized disposal area, as appropriate, in compliance with applicable federal, state, and local laws and regulations. No storage of construction materials or debris will occur within a floodplain during the flood season.

GEN AMM-11 Waste Management: Work area will be kept free of loose trash, including small pieces of residual construction material, such as metal cuttings, broken glass, and hardware.

All food waste will be removed from the site on a daily basis.

Once the project is completed, all construction material, wastes, debris, sediment, rubbish, vegetation, trash, and fencing will be removed from the site and transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

GEN AMM-13 Work Area Designation to Minimize Disturbance (modified): Subapplicant will reduce, to the maximum extent practicable, the amount of disturbance at a site to the absolute minimum necessary to accomplish the project.

Project planning must consider not only the effects of the action itself, but also all ancillary activities associated with the actions, such as equipment staging and refueling areas, material

storage areas, disposal sites, routes of ingress and egress to the project site, and all other related activities necessary to complete the project.

GEN AMM-14 Access Routes and Staging Areas (modified): When working on stream banks or floodplains, disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance to sensitive habitats (e.g., stream banks, stream channel, and riparian habitat) as much as possible. When possible, existing ingress or egress points will be used and/or work will be performed from the top of the stream banks.

All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, above areas of tidal inundation, away from riparian habitat or wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.

GEN AMM-15 Environmental Awareness Training for Construction Personnel: All construction personnel will be given environmental awareness training by the project's environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the covered species that may occur on-site, their habitats, general provisions and protections afforded by the ESA, measures to be implemented to protect these species, and the project boundaries. This training will be provided within 3 days of the arrival of any new worker.

As part of the environmental awareness training, construction personnel will be notified that dogs or any other pets under control of construction personnel will not be allowed in the construction area. Also, no firearms will be permitted in the construction area unless carried by authorized security personnel or law enforcement.

GEN AMM-17 Daily Work Hours: Construction activities that may affect suitable habitat for covered species will be limited to daylight hours during weekdays, leaving a nighttime and weekend period for the species. Work will be allowed on weekends if the proposed construction is 14 days or fewer in length.

GEN AMM-19 Water Quality Protection (modified): Contractors will exercise every reasonable precaution to protect covered species and their critical habitats from construction by-products and pollutants (e.g., construction chemicals, fresh cement, saw-water, or other deleterious materials). Fresh cement or uncured concrete will not be allowed to come into contact with any waterway. Construction waste will be collected and transported to an authorized upland disposal area, as appropriate, and per federal, state, and local laws and regulations.

GEN AMM-21 Restoration of Upland Areas to Pre-Project Conditions: Subapplicant will use native plants, to the maximum extent practicable, for projects that require restoration of upland areas to pre-project conditions as a result of ground disturbance during project activities. Similarly, when hydroseeding, only native seed mix will be used.

2.5.2 Salt Marsh Harvest Mouse Minimization Measures

The following AMMs specific to the salt marsh harvest mouse (SMHM) (*Reithrodontomys raviventris*) will be implemented as provided by the USFWS (USFWS 2021a). Suitable SMHM habitat has been identified within the AAs.

SMHM AMM 1 Biological Monitor: USFWS-approved biological monitor will be present during all ground clearing and construction work taking place in or adjacent to salt marsh and pickleweed-dominated habitats that have potential to support the SMHM. The monitor will have demonstrated experience in monitoring sensitive resource issues on construction projects and knowledge of the biology of the SMHM. Prior to the initiation of construction, qualifications of the prospective biological monitor will be submitted to the USFWS for review and approval. The monitor(s) will have the authority to halt construction, if necessary, if noncompliance actions occur. The biological monitor(s) will be the contact person for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured, or entrapped listed species.

SMHM AMM 4 Salt Marsh Harvest Mouse Observation: If a SMHM is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the mouse leaves the vicinity of the work area on its own volition and the USFWS is notified. If the mouse does not leave the work area, work will not be reinitiated until the USFWS is contacted and has made a decision on how to proceed with work activities. The biological monitor will direct the contractor on how to proceed accordingly. The biological monitor or any other persons at the site will not pursue, capture, handle, or harass any SMHM observed.

SMHM AMM 5 USFWS Personnel Access: If requested before, during, or upon completion of construction, USFWS personnel will be allowed access into work areas to inspect effects, if any, of the actions pertaining to the SMHM.

2.5.3 Ridgway's Rail Minimization Measures

The following AMMs specific to the Ridgway's rail (RR) (*Rallus obsoletus obsoletus*) will be implemented as provided by the USFWS (USFWS 2021a). Suitable RR habitat has been identified within the AAs but does not occur within the project area. The geotechnical investigations would occur outside the RR breeding season of February 1 to August 31.

RR AMM 2 Construction Buffer (modified)**:** Construction work within 700 feet of potential RR nesting habitat will be conducted on or after September 15 and completed on or before January 31 to avoid the February 1 through August 31 nesting season of the RR.

RR AMM 3 Grading and Excavation: Grading, excavation, and other project construction work within 700 feet of potential RR nesting habitat would not take place until September 1, unless RR protocol level surveys have been performed. If construction work within 700 feet of potential RR habitat is proposed between the January 31 to September 1 timeframe, protocol-level surveys for the RR will be conducted to determine the extent and location of nesting RRs. Likewise, these surveys will be conducted if any of the work that was scheduled to commence after September 1 is proposed to take place between June 1 and September 1. Results of

protocol-level breeding surveys will be submitted to the USFWS for a determination of whether work proposed within 700 feet of a RR nest (or the activity center of vocalizing RRs) discovered during such surveys must be rescheduled to occur during the period from September 1 to January 31. Notification that protocol-level surveys will be conducted must be submitted to the USFWS for approval by December 15 preceding the year construction is proposed.

RR AMM 4 Ridgway's Rail Observation: If an RR is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the RR leaves the vicinity of the work area on its own volition and the USFWS is notified. If the RR does not leave the work area, work will not be reinitiated until the USFWS is contacted and has made a decision on how to proceed with work activities. The biological monitor will direct the contractor on how to proceed accordingly. The biological monitor or any other persons at the site will not pursue, capture, handle, or harass any RR observed.

RR AMM 5 USFWS Personnel Access: If requested before, during, or upon completion of construction, USFWS personnel will be allowed access to work areas to inspect effects, if any, of the actions on the RR.

2.5.4 California Least Tern Minimization Measures

The following AMMs specific to the California least tern (CLT) (*Sterna antillarum browni*) from the SFWO PBO to FEMA will be implemented (USFWS 2019). Suitable CLT foraging habitat has been identified near the AAs and potentially within the AAs.

CLT AMM 4 Habitat Protection: No soil stabilization materials or off-site materials (e.g., decomposed granite, soil, rocks) will be added to the surface within occupied habitat. No excavation or grading will be allowed within occupied habitat.

CLT AMM 5 Flagging: When necessary to minimize the area affected by the project, work site boundaries will be marked with flagging or other visible materials by a monitor, which will be removed at the conclusion of the project.

CLT AMM 6 Avoid Placement of Predator Perches: Workers will avoid temporary or permanent placement of structures (e.g., posts, railings, tall equipment, or fence lines) that could provide elevated perches for predatory birds near or within occupied habitat.

CLT AMM 7 Access Restrictions: Access to work sites in occupied habitat will be by foot travel only. Motorized vehicles, including all-terrain vehicles, will not be used in occupied habitat.

CLT AMM 8 Restoration of Work Areas: At the conclusion of the project, areas temporarily affected by project activity will be restored to their pre-project condition (e.g., footpaths will be raked to their original ground contour and native vegetation will be reestablished, if necessary).

CLT AMM 9 Waste Management: Trash, food, food containers, and food waste will be secured at all times by individual workers or placed in animal-proof trash containers placed at the work site. The contents of trash containers will be transferred from the work site at the end of each day.

2.5.5 Western Snowy Plover Minimization Measures

The following AMMs specific to the Western snowy plover (WSP) (*Charadrius nivosus nivosus*) from the SFWO PBO (USFWS 2019) and the Arcata/Yreka Fish and Wildlife Office (FWO) Programmatic Letter of Concurrence (PLOC) to FEMA (USFWS 2018) will be implemented. Suitable WSP habitat has been identified within the AAs, but not within the project area.

WSP AMM 1 Seasonal Avoidance: Project construction activities in suitable nesting habitat will occur during the species nonbreeding season—the period beginning September 15 and continuing through February 28 of the following year or through February 29 in a leap year.

WSP AMM 2 Use of Handheld Tools: Project construction activities in suitable nesting habitat will be limited to the use of handheld tools, including handheld motorized implements such as chain saws and power augers. No heavy equipment will be allowed within suitable nesting habitat.

WSP AMM 3 Guidelines for Handheld Tools: If handheld motorized implements are used, operators will employ BMPs to avoid and minimize soil and water contamination from fuel and lubricants. Measures include:

a. Use spill-resistant fuel and lubricant containers.

b. Consider the use of a portable containment pad for refueling in the field.

c. Immediately report petroleum spills to the landowner, or land management agency, and notify appropriate local authorities for advice and action on containment and cleanup of spills.

d. Clearly mark the location and/or boundaries of the spill site to enable rapid remedial action.

WSP AMM 4 Biological Monitor: If project construction activities occur adjacent to, but not within, suitable nesting habitat, then project activities will be conducted during the species nonbreeding season, if possible. If nonbreeding season construction is not possible, then the Subapplicant will employ a USFWS-approved biologist to conduct weekly WSP surveys. If WSP are observed, the USFWS-approved biologist will notify the USFWS within 1 day of the observation and will monitor all construction activities conducted adjacent to WSP suitable nesting habitat. The qualified biologist will have the right and responsibility to stop work if adverse effects of nesting WSP are observed.

WSP AMM 5 Flagging: When it is necessary to minimize the area affected by the project, the Subapplicant or their contractors will mark the work site boundaries with flagging or other visible materials and remove those markers at the conclusion of the project.

WSP AMM 6 Avoid Placement of Predator Perches: Workers will avoid temporary or permanent placement of structures (e.g., posts, railings, tall equipment, or fence lines) that could provide elevated perches for predatory birds.

WSP AMM 7 Access Restrictions: Access to work sites will be by foot travel only. Motorized vehicles, including all-terrain vehicles, are not permitted on work sites located within suitable nesting habitat.

WSP AMM 8 Site Restrictions: Vehicles used for transport of personnel will be restricted to existing parking lots or roadside parking areas.

WSP AMM 9 Restore Contours of Temporarily Disturbed Areas: At the conclusion of the project, areas temporarily impacted by project activity will be restored to their pre-project condition (e.g., footpaths are to be raked to their original ground contour and cut vegetation is to be removed or piled for future disposal).

WSP AMM 10 Waste Management: Trash, food, food containers, and food waste will be secured at all times by individual workers or placed in animal-proof trash containers placed at the work site. The contents of trash containers will be transferred from the work site at the end of each day.

WSP AMM 11 Prohibition of Pets Onsite: Pets will be prohibited from all work sites.

2.6 Action Area

Project AAs are identified for the analysis of potential effects of the proposed project on listed species. The AAs include areas where project activities could result in effects to federally listed species. The ESA defines effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.02). Thus, consequences may include direct harm to species within work areas, staging areas, and access routes as well as disturbance from project-related noise and human presence. The AAs are defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action” (50 CFR § 402.02). Therefore, observable or measurable effects of the project are not expected beyond the boundaries of the AA.

The farthest-reaching effect of the proposed project would be noise generated during boring/CPT activities. Construction for this project includes geotechnical investigations in 15 locations in previously disturbed areas. No vegetation is expected to be disturbed during the geotechnical boring work. However, the drill rigs will generate noise.

The AAs were defined to extend to the point where noise would be expected to attenuate to background levels. This is estimated to be approximately 500 feet along the east side of the southern AA. For the east side of the southern AA and around the northern AA, the AAs are extended to 700 feet to account for nesting habitat of the RR to the east. The northern AA is approximately 217 acres, the southern AA is approximately 163 acres, and the total acreage for the AAs is approximately 380 acres (Figures 4 and 5). The staging areas are not included in the AA because they are on existing paved parking lots and would only be used to store equipment.

Figure 4. Northern Action Area

Figure 5. Southern Action Area

SECTION 3. ENVIRONMENTAL SETTING

3.1 Environmental Setting

The AAs are located adjacent to San Francisco Bay. The northern AA is primarily along the perimeter of a PG&E Substation and California State Highway 84 (also known as the Bayfront Expressway) and adjacent to the Don Edwards San Francisco Bay National Wildlife Refuge. The southern AA is located along the Bay Trail, between the predominantly residential area to the west of East Palo Alto and the marsh and estuarine habitats of San Francisco Bay to the east, known as the Ravenswood Open Space Preserve. The southern AA is more than 250 feet north of San Francisquito Creek (Figure 5).

3.2 Land Use Type / Vegetation Communities

The actual project footprint for the SAFER Bay Phase 1b project is the very small areas around each of 15 proposed geotechnical investigation locations (Figures 3, 3a, and 3b). Land use within the project footprint primarily consists of developed and disturbed land. Surrounding areas that overlap the AAs include residential and commercial development to the west of the Bay Trail, and marsh preserve lands to the east and north on the fringe of San Francisco Bay. Access to the test locations would be along existing roads, trails, paths, and on top of levees. The land use in the two proposed staging areas is previously disturbed and developed land, primarily parking lots (Figures 4 and 5). The project footprint is completely within previously disturbed land, dominated by compacted soils along roadways, paths, trails, and the existing levees. Attachment C contains photographs of each of the proposed boring locations and adjacent areas.

The northern AA consists of a 700-foot buffer around the proposed boring/CPT locations on the northern portion of the project. The 217-acre northern AA includes the PG&E Substation, perimeter road around the substation, and managed marsh lands. The marsh areas include Ponds R1, R2, and SF2. There are numerous existing levees and access roads (Figure 3a). WSP designated critical habitat exists to the south of the Bayfront Expressway and west of Pond SF2 (Figure 9). A paved staging area is located in the City of Menlo Park Firefighting Training facility, to the northeast of the PG&E Substation (Figure 4).

The southern AA consists of a 500-foot buffer to the west of the proposed boring/CPT locations and a 700-foot buffer to the east (Figure 5). The 163-acre southern AA includes urban residential, commercial, and industrial land uses to the west and extensive marsh and wetlands on the shores of San Francisco Bay to the east. Disturbed and cleared parcels and roads occur west of the Bay Trail, which runs north and south near the proposed boring/CPT locations. The proposed staging area is located within the paved parking lot of Cooley Landing Park, at the east end of Bay Road (Figure 5). San Francisquito Creek is more than 250 feet south of the southern border of the southern AA (Figure 5).

Vegetation communities in the northern AA consist of disturbed vegetation along roads, trails, and levees as well as tidally influenced water, wetlands, and mid- and high-marshes that include pickleweed (*Salicornia virginica*), cordgrass (*Spartina* sp.), and alkali bulrush (*Bolboschoenus maritimus*). Other habitats present include barren ground, mudflats, salt flats, and sandy areas, depending on the time of year and management activities by USFWS (e.g., water level management and habitat management). The PG&E Substation property is dominated by

pavement and compacted soils with fringes of ruderal vegetation (Figures 3, 3a, and 4, Attachment C).

Vegetation communities in the southern AA are quite different on the west side (urban area) versus the east side (San Francisco Bay) of the Bay Trail. Vegetation along the paved Bay Trail consists of disturbed barren ground, non-native weeds, and grasses typical of compacted and disturbed areas. These same habitats dominate the tops of the existing levee. To the west of the Bay Trail are existing residential, commercial, and industrial properties along with cleared and disturbed lots dominated by ruderal vegetation. East of the Bay Trail are expansive tidally influenced water, wetlands, and mid- and high-marshes associated with the shores of San Francisco Bay and the Ravenswood Open Space Preserve. Vegetation on these marsh lands also includes pickleweed, cordgrass, and alkali bulrush (Figure 5 and Attachment C).

3.3 Federally Listed Species with Potential to Occur in the Action Area

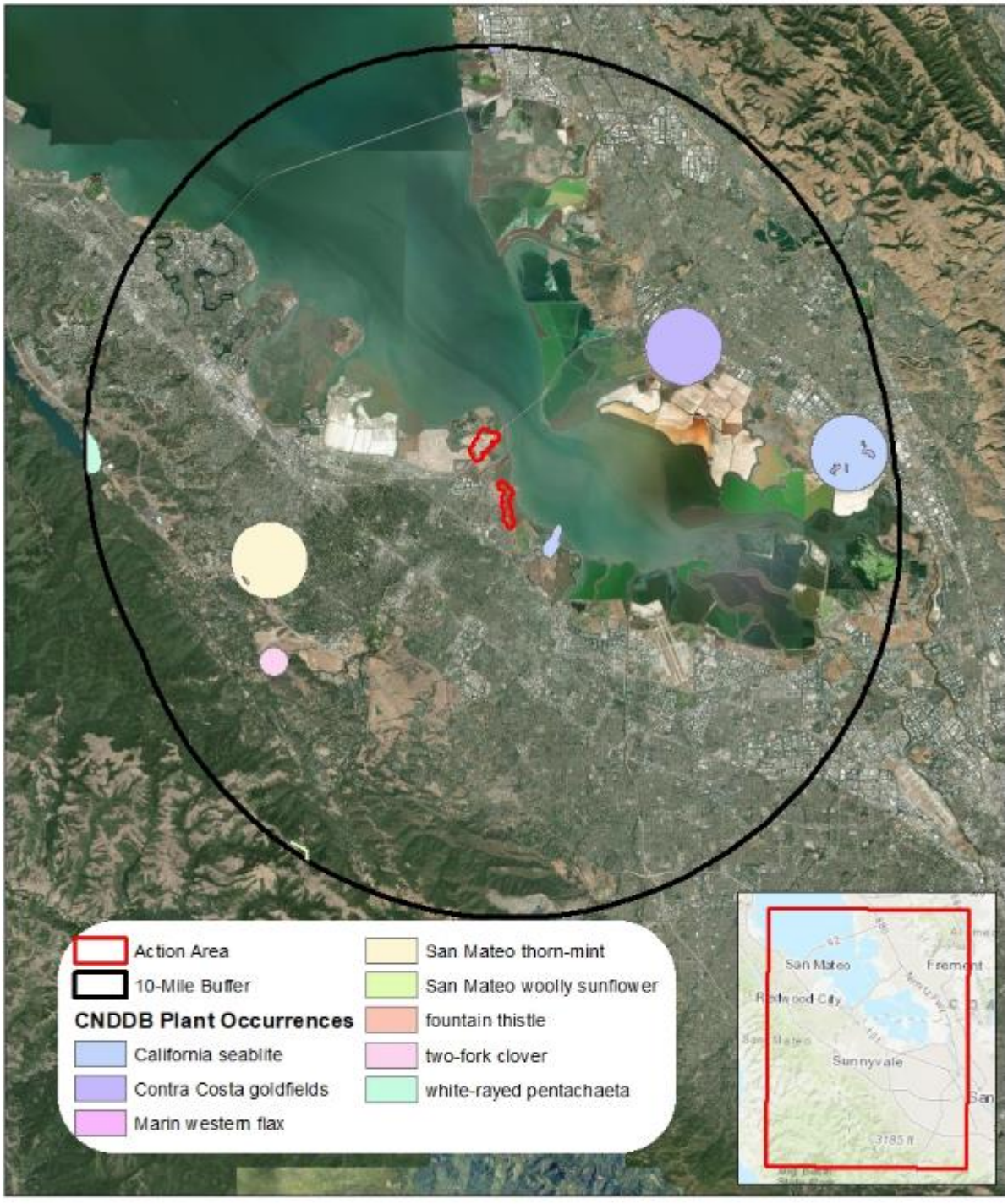
A desktop review was conducted to collect information on federally listed species under NMFS and USFWS jurisdiction with potential to occur within or in the vicinity of the project footprint. The scope of the desktop review included the area occurring within a 10-mile radius of the AAs which identified 22 federally listed plant and animal species as having the potential to occur in the AAs (Attachment B). Marine species were ruled out and require no further analysis because all work is to take place outside the zone of tidal influence.

The following sources were consulted for information regarding occurrences of federally listed species and their designated critical habitats in the vicinity of the AAs:

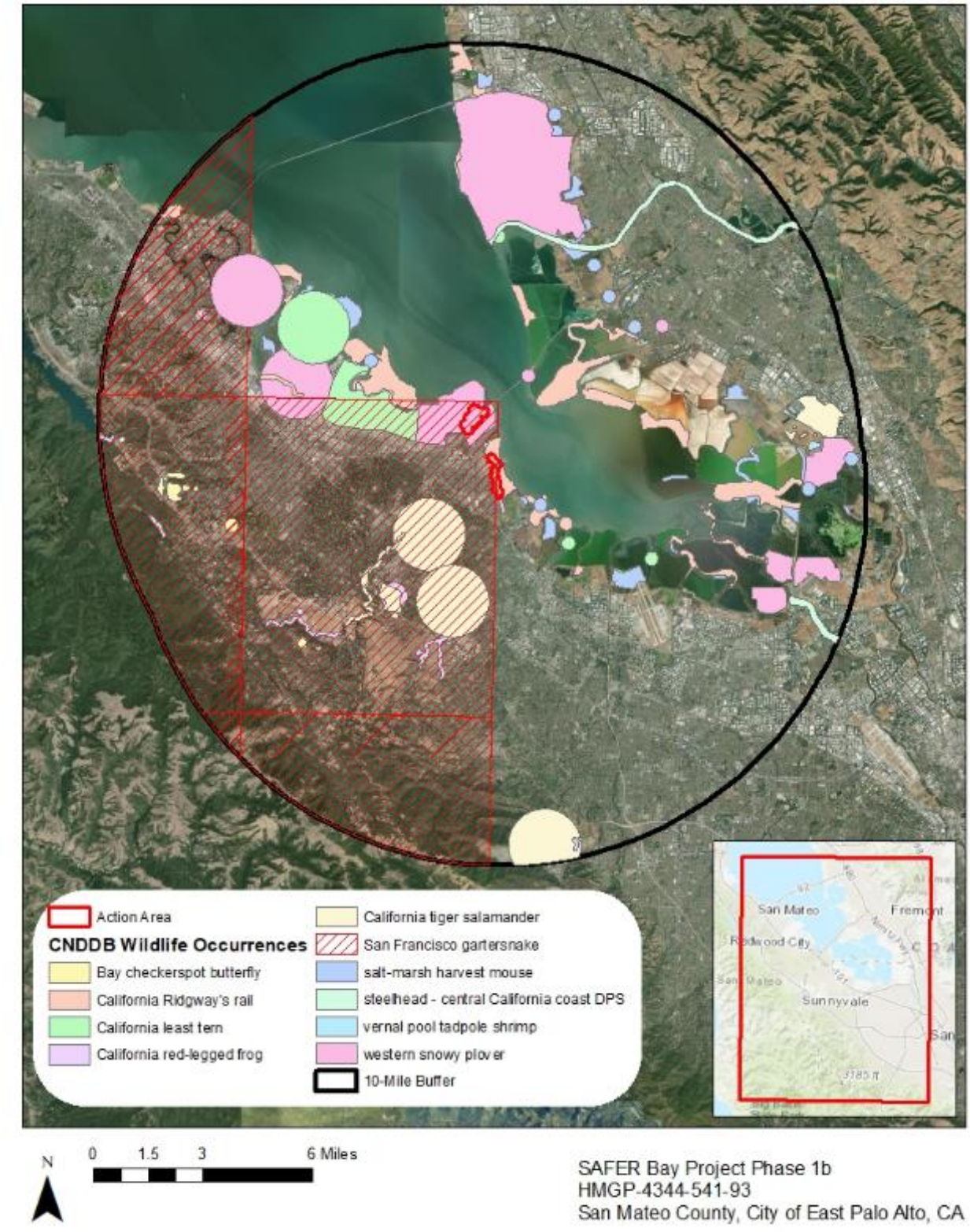
- The California Natural Diversity Database (CNDDB) (CDFW 2021)
- USFWS Information for Planning and Consultation (IPaC) System (USFWS 2021b),
- Environmental Protection Agency (EPA)
- National Environmental Policy Act (NEPA) Assist (EPA 2021)
- Essential Fish Habitat (EFH) Mapper (NMFS 2021a) and
- NMFS Protected Resources App (NMFS 2021b)

Recovery plans and other published literature were reviewed for further details concerning species occurrence and status in the region, habitat preferences, documented historical and current ranges, and life histories.

Figures 6 and 7 show all the CDFW CNDDB occurrences of federally listed species within a 10-mile radius of the AAs and Figure 8 shows all designated critical habitat within a 10-mile radius of the AA (CDFW 2021, USFWS 2021b). Figure 9 shows the northern AA with the designated critical habitat for the WSP that overlaps with the northern AA. The USFWS IPaC report for the project vicinity and the CNDDB species list for federally listed species documented within 10 miles of the AA are provided in Attachment A.



SAFER Bay Project Phase 1b
HMGP-4344-541-93
San Mateo County, City of East Palo Alto, CA



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San Mateo County, City of East Palo Alto, CA

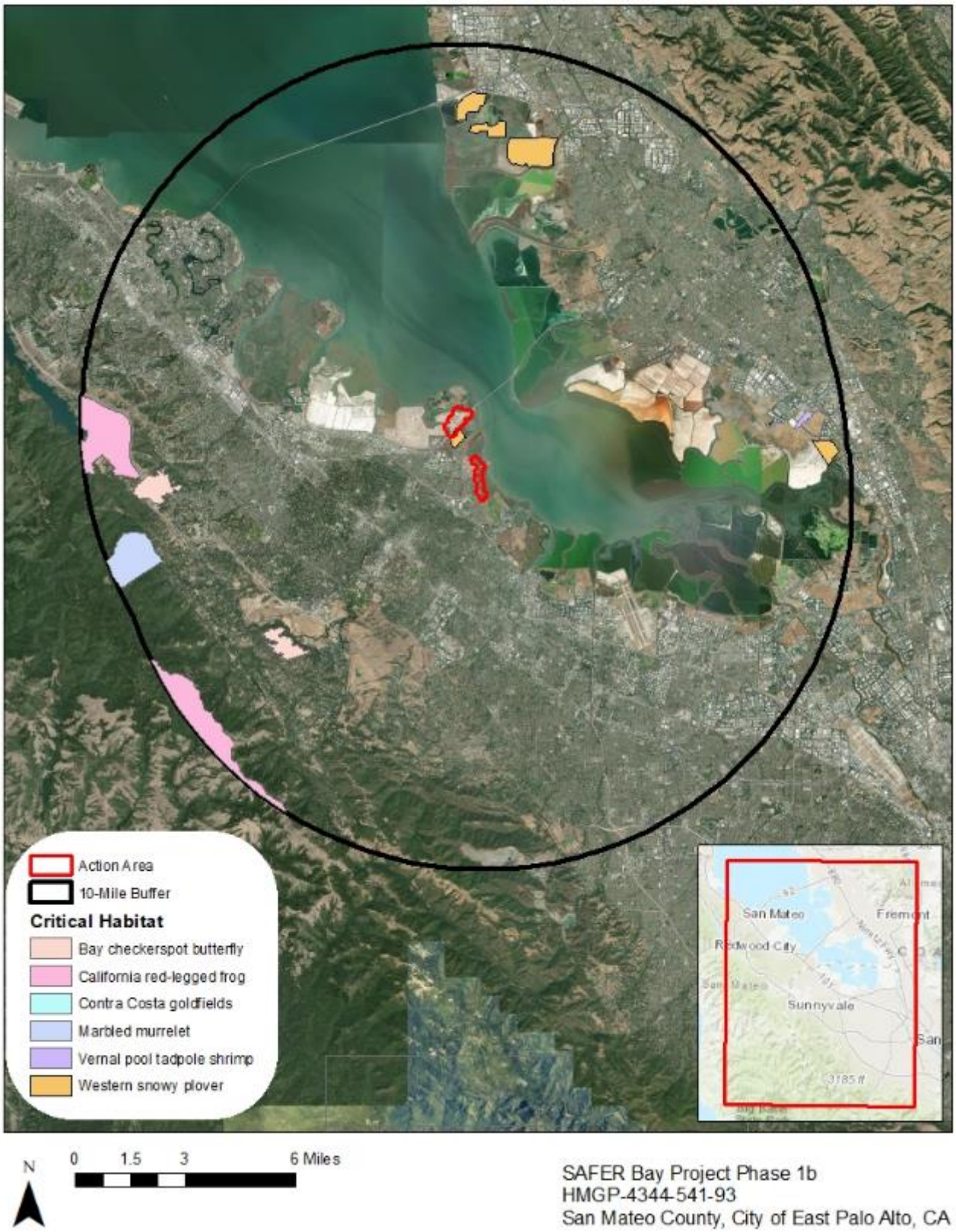
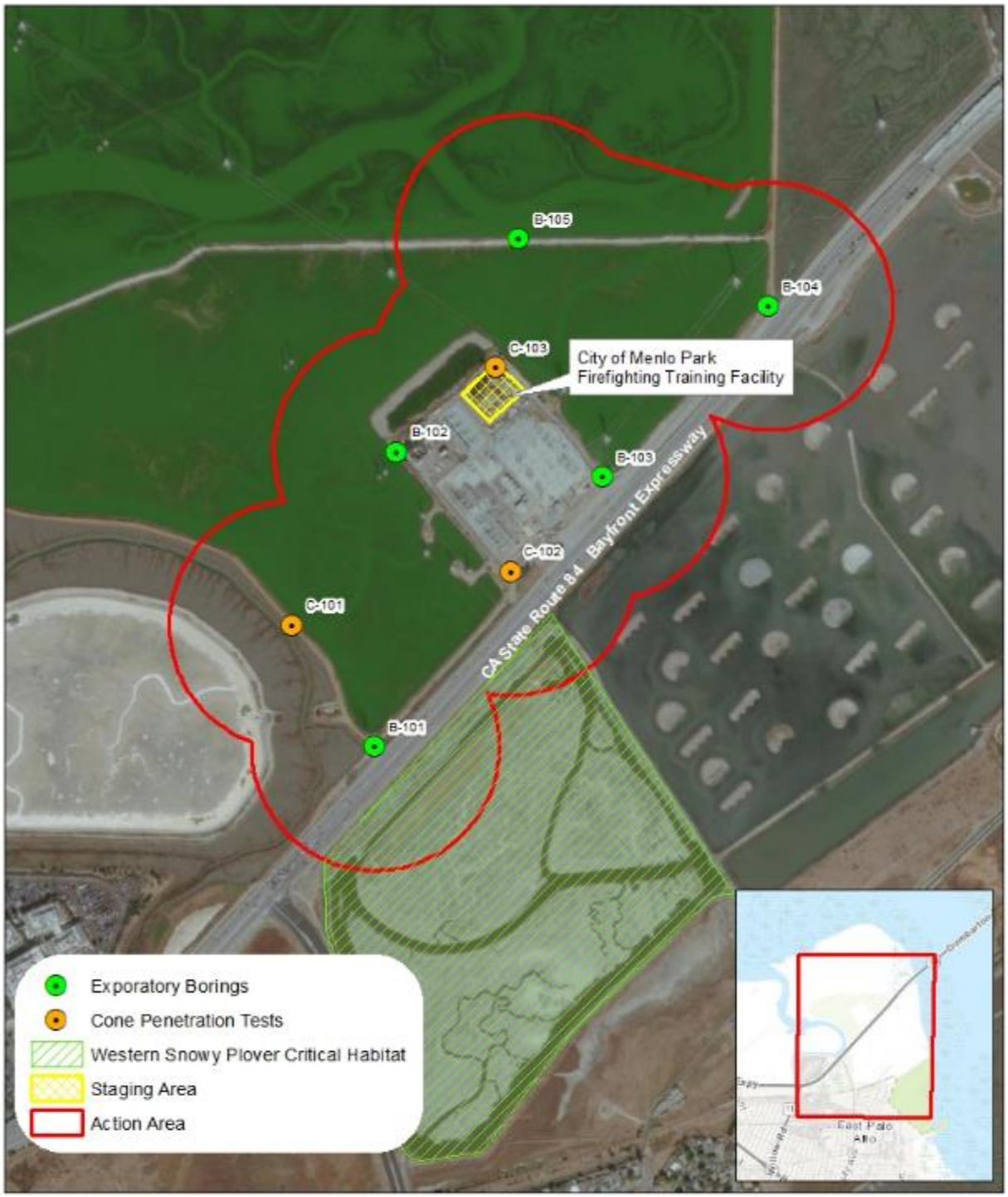


Figure 8. Designated Critical Habitats within 10 Miles of the AAs



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HMGP-4344-541-93
San Mateo County, City of East Palo Alto, CA

3.3.1 Plant Species

Based on the desktop analysis, seven federally listed plant species were identified as having the potential to occur in the AAs. By combining the desktop analysis and the existing habitat conditions it was determined that no federally listed plant species are expected to occur in the AAs.

The plant species identified above were dismissed from further consideration for project-related impacts because of factors that include: (1) hydrologic conditions necessary to support the species are not present in the AAs (e.g., vernal pools), (2) the plant species only exist at elevations higher than the elevations of the proposed project, and/or (3) the plant species have been extirpated from the project area. The basis for excluding these species is discussed in Attachment B.

Because the proposed project would have no effect on these species, they are not considered further in this BA.

3.3.2 Wildlife Species

Fifteen federally listed wildlife species with a potential to occur in the region were identified during the desktop analysis (Appendix B). Of these 15 species, only the SMHM, CRR, CLT, and WSP were identified as having the potential to occur in the AAs and to be affected by project activities.

All other species were dismissed from further consideration in this BA based on one or more of the following criteria: (1) the AAs are not within the known range for the species, (2) suitable habitat for the species does not exist in the AAs, (3) the species has been extirpated from the project area, (4) the species is restricted to a specific area outside the AAs, and/or (5) no project activity would occur in aquatic habitats. The basis for excluding these species is discussed in Attachment B.

The following sections provide life history information, a description of designated critical habitat, and a discussion of the potential for the species to occur in the AAs.

3.3.2.1 Salt Marsh Harvest Mouse

The SMHM was listed as endangered by the USFWS on October 13, 1970 (USFWS 1970a). The SMHM is a small rodent in the Cricetidae family, which includes field mice, lemmings, muskrats, hamsters, and gerbils. The southern subspecies (*Reithrodontomys raviventris raviventris*) lives in the marshes of Corte Madera, Richmond, and South San Francisco Bay. The scientific name *Reithrodontomys raviventris* means “grooved-toothed mouse with a red belly.” The southern subspecies has grooved upper front teeth and a cinnamon/rufous colored belly (USFWS 2010).

SMHM are highly dependent on dense cover and their preferred habitat is pickleweed. Harvest mice are seldom found in cordgrass or alkali bulrush. In marshes with an upper zone of salt-tolerant plants, they use this vegetation to escape the higher tides, and may even spend a considerable portion of their lives there. The SMHM also moves into adjoining grasslands during the highest winter tides (USFWS 2010).

In winter, this harvest mouse prefers to forage on fresh green grasses; for the rest of the year, they favor pickleweed and saltgrass. The southern subspecies cannot subsist on seawater but prefer moderately salty water over freshwater. Although SMHM are active mainly at night, they can be active during daylight hours. They swim very well, in contrast to the western harvest mouse, which is a poor swimmer. Breeding occurs from spring through autumn. Each female usually has only one or two litters per year. The average litter size is about four. Nests are minimal, with the southern subspecies not making a nest at all (USFWS 2010).

3.3.2.1.1 Potential to Occur in the Action Area

The SMHM is restricted to the salt and brackish marshes of San Francisco, San Pablo, and Suisan Bay areas. According to the CNDDB, the SMHM was observed in the northern AA in 1990 and in the southern AA in 1991 (CDFW 2021). Suitable marsh habitat occurs within the AAs. There is a small potential to encounter mice during the installation of the 15 boring/CPTs. However, the boring locations are on previously disturbed and compacted soil, and vegetation removal is not expected. Therefore, it is unlikely the SMHM would be encountered during the project implementation over the course of the proposed 3-week period.

3.3.2.1.2 Critical Habitat for the Salt Marsh Harvest Mouse

There is no designated critical habitat for this species.

3.3.2.2 Ridgway's Rail

The RR was listed as endangered by the USFWS on October 13, 1970 (USFWS 1970a). The RR is one of the largest rails and has a downward-curving bill with an olive-brown and cinnamon-bluff plumage coloring. Rails are secretive and are hard to see in dense vegetation. They may run rapidly through vegetation or along slough bottoms. Rails prefer to walk or run rather than fly or swim. When flushed, they normally fly only a short distance before landing. Rails are most active in early morning and late evening. They forage in marsh vegetation in and along creeks and mudflat edges. They often roost at high tide during the day (USFWS 2017a).

RRs feed on mussels, crabs, and clams. Their breeding season starts in February, with nesting beginning in mid-March and extending into August. Preferred habitat is salty and brackish water marshes with pickleweed and cordgrass (USFWS 2017a).

3.3.2.2.1 Potential to Occur in the Action Area

The RR inhabits coastal salt marshes that contain pickleweed and cordgrass. According to the CNDDB, the RR was observed in the northern AA in 2017 and in the southern AA in 2018 (CDFW 2021). eBird has numerous records of RRs in or near the AAs, with the most recent sightings in the Ravenswood Open Space Preserve and Cooley Landing Park in 2020 and near Ravenswood Trail in 2021 (Cornell 2021a and 2021b). Suitable marsh habitat occurs within the AAs; however, it is absent from the geotechnical exploration locations, which would be on previously disturbed and compacted land. In addition, vegetation removal is not anticipated. Therefore, it is unlikely that the RR would be encountered during the 3-week period of the project implementation.

3.3.2.2.2 Critical Habitat for the Ridgway's Rail

There is no designated critical habitat for this species.

3.3.2.3 California Least Tern

The CLT was listed as endangered by the USFWS on June 2, 1970 (USFWS 1970b). The CLT is the smallest tern in North America. This tern has a black cap with a white forehead and a short, forked tail and orange bills and legs. Least terns primarily eat small fish with secondary food items being shrimp and other invertebrates (USFWS 2017b).

CLTs live along the coast and nest on open beaches that do not have vegetation. Terns start mating in April or May. Males perform elaborate flights as part of their courtship behavior. CLTs are found in late spring and summer along the Pacific Coast of California and nest in colonies with the nests being a simple scrape in the sand, sometimes with fragments of shells (USFWS 2017b).

3.3.2.3.1 Potential to Occur in the Action Area

CLT habitat includes open beaches and nearshore waters during the late spring and summer. Breeding occurs in colonies on beaches with no vegetation. According to the CNDDB, the California least tern has been observed 1.4 miles north (1976) and 2 miles southeast (1987) of the AAs (CDFW 2021). eBird has a 2015 record of a sighting from the Don Edwards National Wildlife Refuge – Ravenswood Salt Pond SF2, just south of the northern AA (Cornell 2021c). Suitable nesting habitat is not present in the AAs and there would be no work in suitable nesting habitat; however, there are many areas within the AAs with suitable late spring and summer foraging habitat. Suitable habitat for California least terns is absent from the testing locations, which would be on previously disturbed and compacted land. Therefore, it is unlikely that the CLT would be encountered during the 3-week period of the project.

3.3.2.3.2 Critical Habitat for the California Least Tern

There is no designated critical habitat for this species.

3.3.2.4 Western Snowy Plover

The Pacific coast population of the WSP was listed as endangered by the USFWS on March 5, 1993 (USFWS 1993). Critical habitat was designated for this species on June 19, 2012 (USFWS 2012). The WSP is a small shorebird with moderately long legs and a short neck. Their backs are pale tan while their underparts are white, and they have dark patches on the sides of their necks, which reach around onto the top of their chests (USFWS 2019b).

The Pacific coast population of WSP breeds on coastal beaches and dry salt pans from southern Washington to southern Baja California, Mexico. Plovers lay their eggs in shallow depressions in sandy and salty areas with little vegetation or driftwood. Nests are typically lined with pebbles, shell fragments, fish bones, vegetation fragments, and invertebrate skeletons. Because the sites they choose are in loose sand or soil, nesting habitat is constantly changing because of the influence of wind, tides, storms, and encroaching plants. WSPs usually lay three eggs. WSP nesting season extends from early March through late September. Nests typically occur in flat,

open areas that allow snowy plovers to see in all directions as a defense against predators (USFWS 2019b).

The plover primarily eats terrestrial and aquatic invertebrates. Foraging techniques include walking, hopping, and probing. Snowy plovers are primarily visual foragers. They forage for invertebrates in wet sand and kelp within the intertidal zone, in dry sandy areas above the high tide line, on salt pans, and along the edges of salt marshes and lagoons (USFWS 2019b).

Within hours after hatching, snowy plover chicks leave the nest to search for food. They are not able to fly until about 4 weeks after hatching. Adults use distraction displays to lure predators, dogs, and people away from chicks. Most chick mortality occurs within 6 days after hatching. If successful, plovers often return to the same breeding sites year after year (USFWS 2019b).

3.3.2.4.1 Potential to Occur in the Action Area

Habitat for the WSP includes coastal beaches and the intertidal zone of ocean and bay waters. Breeding occurs on beaches with little vegetation. According to the CNDDB, WSP was observed in the northern AA in 2017 and in the southern AA in 2002 (CDFW 2021). eBird has numerous records of sightings of WSP in or near the AAs in recent years in both breeding and nonbreeding seasons. The most recent sighting is from 2021 in the Don Edwards National Wildlife Refuge – Ravenswood Salt Ponds R1/R2 (Cornell 2021d). Suitable habitat for WSPs is absent from the geotechnical investigation locations, which are planned to be on previously disturbed and compacted land and there would be no work in suitable habitat. However, the northern AA does overlap with designated critical habitat for the WSP. It is unlikely that the WSP would be encountered during the 3-week period of the project due to work being conducted on areas of unsuitable habitat.

3.3.2.4.2 Critical Habitat for the Western Snowy Plover

Critical habitat was designated for the WSP on June 19, 2012 (USFWS 2021). The primary constituent elements (PBEs) essential to conservation of the Pacific Coast WSP are the following:

Sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil sites, with:

1) Areas that are below heavily vegetated areas or developed areas and above the daily high tides

2) Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annual high tide or highwater flow, subject to inundation but not constantly under water

3) Surf- or water-deposited organic debris located on open substrates

4) Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators

A small portion of designated critical habitat overlaps with the northern AA. This designated critical habitat includes the above-listed PBEs for the most part (Figure 9).

SECTION 4. EFFECTS ANALYSIS

4.1 Potential Effects on Salt Marsh Harvest Mouse

The SMHM has been observed in both the northern AA and the southern AA. Suitable SMHM habitat is present within portions the AAs, but not within the project footprints of the proposed investigation locations. The proposed geotechnical investigations would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing would be required for boring or CPT installation.

Geotechnical investigations near SMHM habitats would be performed outside of preferred habitats, on disturbed and compacted soils on roadsides, trail sides, existing paths, and on top of existing levees. SMHM and their nesting and foraging habitats would only be minimally impacted, if at all, by the proposed geotechnical investigation. Based on the proposed avoidance of SMHM habitats and the implementation of species-specific AMMs listed in Section 2.5 above, the potential for project activities to kill, injure, or destroy SMHM or their nests is considered discountable.

Disturbed areas resulting from the geotechnical investigations would be seeded with native seed mix, as appropriate. Restoration activities would be consistent with AMMs listed in Section 2.5.

Geotechnical investigations along roadways, trails, or on top of levees during the breeding season would result in noise, vibration, dust, and human activity that may temporarily disturb nesting SMHMs. Based on the fact that the geotechnical investigations would not be within SMHM habitat, the general availability of SMHM habitat nearby, and with the implementation of general and SMHM-specific AMMs, the potential for temporary disturbance to cause nest abandonment is considered discountable.

The geotechnical investigations would be located in previously disturbed areas and no vegetation is expected to be removed. There is a possibility of potential leaks or spills of chemical contaminants or hazardous materials (e.g., vehicle or equipment fuel, oil, grease). Implementation of BMPs and AMMs (as described in Section 2.5) would reduce any such potential effects on surrounding SMHM habitat to insignificant and discountable levels.

No designated critical habitat would be affected because no critical habitat has been designated for this species.

4.2 Potential Effects on Ridgway's Rail

The RR has been observed in both the northern AA and the southern AA. Suitable RR habitat is present within the northern AA and in the eastern portion of the southern AA. However, no suitable habitat is present within the project footprints of the proposed geotechnical investigation locations. The proposed geotechnical boring/CPTs would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing is anticipated for the boring/CPT installation. RR and their nesting, foraging, and/or dispersal habitats would potentially be impacted by noise and vibration during the 3-week construction period.

Geotechnical investigations near habitats for the RR would be performed outside of their preferred habitats, on disturbed and compacted soils on roadsides, trail sides, existing paths, and on top of existing levees. Based on the expected avoidance of RR habitats and the implementation of species-specific AMMs listed in Section 2.5, the potential for project activities to kill, injure, or destroy RR or their nests is considered discountable.

Disturbed areas resulting from the installation of the geotechnical boring/CPTs would be seeded with native seed mix, as appropriate. Restoration activities would be consistent with AMMs listed in Section 2.5.

Geotechnical investigations along roadways, trails, or on top of the levees during the breeding season would result in noise, dust, and human activity that may temporarily disturb RRs. Construction would not be within the RR habitat and general and RR-specific AMMs would be implemented; therefore, the potential for disturbance would be limited during the 3-week geotechnical investigation period.

The geotechnical boring/CPTs would be located in previously disturbed habitats and no vegetation would be removed. There is a possibility of potential leaks or spills of chemical contaminants or hazardous materials (e.g., vehicle or equipment fuel, oil, grease). Implementation of BMPs and AMMs (as described in Section 2.5) would reduce—to insignificant and discountable levels—any such potential effects on the surrounding RR habitat.

No designated critical habitat would be affected because no critical habitat has been designated for this species.

4.3 Potential Effects on California Least Tern

The CLT has been observed near the northern and southern AAs. The most recent occurrence is from 2015 in the Don Edwards National Wildlife Refuge – Ravenswood Salt Pond SF2, just south of the northern AA (Figures 3 and 3a). Suitable foraging habitat is present within the northern AA and in the eastern portion of the southern AA. However, no suitable habitat is present within the project footprints of the proposed boring or CPT locations. The proposed geotechnical boring/CPTs would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing is anticipated for the boring installation. CLT and their foraging habitat would potentially be impacted by noise and vibration during the 3-week construction period.

Geotechnical investigations near foraging habitats for the CLT would be performed outside of their preferred habitats, on disturbed and compacted soils on roadsides, trail sides, existing paths, and on top of the existing levees. Based on the expected avoidance of CLT habitats and the implementation of species-specific AMMs listed in Section 2.5, the potential for project activities to kill, injure, or destroy CLT is considered discountable.

Disturbed areas resulting from the installation of the geotechnical borings would be seeded with native seed mix, as appropriate. Restoration activities would be consistent with AMMs listed in Section 2.5.

Geotechnical investigations along roadways, trails, or on top of the levees would result in noise, vibration, dust, and human activity that may temporarily disturb CLTs. Geotechnical investigations are not within the CLT foraging habitat, and general and CRR-specific AMMs would be implemented; therefore, the potential for disturbance would be limited during the 3-week construction period.

The geotechnical boring/CPTs would be located in previously disturbed habitats and no vegetation would be removed. There is a possibility of potential leaks or spills of chemical contaminants or hazardous materials (e.g., vehicle or equipment fuel, oil, grease). Implementation of BMPs and AMMs (as described in Section 2.5) would reduce—to insignificant and discountable levels—any such potential effects on surrounding CLT habitat.

No designated critical habitat would be affected because no critical habitat has been designated for this species.

4.4 Potential Effects on Western Snowy Plover

The WSP has been observed in the northern and southern AAs. The most recent occurrence is from 2021 in the Don Edwards National Wildlife Refuge – Ravenswood Salt Ponds R1/R2, just south of the northern AA (Figure 3 and 3a). Suitable foraging and nesting habitat is present within the northern AA. However, no suitable habitat is present within the project footprints of the proposed boring or CPT locations. The proposed geotechnical borings would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing is anticipated for the boring or CPT installation. WSP and their nesting, foraging, and/or dispersal habitats would potentially be impacted by noise during the 3-week construction period.

Geotechnical investigations near foraging and nesting habitats for the WSP would be performed outside of their preferred habitats, on disturbed and compacted soils on roadsides, trail sides, existing paths, and on top of the existing levees. Based on the expected avoidance of WSP habitats and the implementation of species-specific AMMs listed in Section 2.5 above, the potential for project activities to kill, injure, or destroy WSP or their nests is considered discountable.

Disturbed areas resulting from the installation of the geotechnical boring/CPTs would be seeded with native seed mix, as appropriate. Restoration activities would be consistent with AMMs listed in Section 2.5.

Geotechnical investigations along roadways, trails, or on top of the levees would result in noise, vibration, dust, and human activity that may temporarily disturb WSPs. Construction would not be within the WSP habitat, and general and WSP-specific AMMs would be implemented; therefore, the potential for disturbance would be limited during the 3-week construction period.

The geotechnical boring/CPTs would be located in previously disturbed habitats and no vegetation would be removed. There is a possibility of potential leaks or spills of chemical contaminants or hazardous materials (e.g., vehicle or equipment fuel, oil, grease). Implementation of BMPs and AMMs (as described in Section 2.5) would reduce—to insignificant and discountable levels—any such potential effects on surrounding WSP habitat.

Critical habitat for the WSP overlaps the northern AA (Figure 9). Noise and vibration impacts from the geotechnical boring/CPTs are not expected to occur in the designated critical habitat for the WSP. The borings would not occur within the designated critical habitat and would be conducted on existing disturbed and compacted areas on the north side of CA State Route 84, which generates substantial noise and that separates the project area from the designated critical habitat to the south (Figure 9). Noise from the geotechnical investigations would attenuate to baseline levels in a relatively short distance because the existing baseline is elevated by traffic from CA State Route 84.

SECTION 5. EFFECTS DETERMINATION

Suitable SMHM foraging and nesting habitat is known to be present in the AAs. With the implementation of proposed general and species-specific AMMs, appropriate BMPs, and the relatively short (3-week) duration of the geotechnical investigation activities, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the SMHM.

Suitable RR foraging, nesting, and dispersal habitat is known to be present within the AAs. With the implementation of proposed general and species-specific AMMs, appropriate BMPs, and the relatively short (3-week) duration of the geotechnical investigation activities outside of the breeding season, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the CRR.

Suitable CLT foraging habitat is known to be present within the AAs. With the implementation of proposed general and species-specific AMMs, appropriate BMPs, and the relatively short (3-week) duration of the geotechnical investigation activities, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the CLT.

Suitable WSP foraging, nesting, and dispersal habitat is known to be present within the AAs and the northern AA overlaps with designated critical habitat for this species. With the implementation of proposed general and species-specific AMMs, appropriate BMPs, and the relatively short (3-week) duration of the geotechnical investigation activities outside of the breeding season, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the WSP. FEMA has also determined that this project would have ***no effect*** on WSP critical habitat because the borings and CPTs are on the north side of CA State Route 84 and the designated critical habitat is located on the south side of the same road. This roadway currently creates noise that would be similar to the noise from the proposed geotechnical investigations.

SECTION 6. REFERENCES

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_____. 2005. “Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Pacific Coast Population of the Western Snowy Plover, Final Rule.” *Federal Register* 58:12864–12874.

_____. 1970a. “Determination of endangered status for salt marsh harvest mouse and California clapper rail.” *Federal Register* 35:16047–16048.

_____. 1970b. “Determination of endangered status for California least tern.” *Federal Register* 35:8491–8498.

SECTION 7. LIST OF PREPARERS

Name, Organization	Education	Experience
Murray Wade, CDM Smith	MS Environmental Science (Avian Research); BS Forest Biology (Wildlife Management)	35 years of experience, threatened and endangered species surveys and assessment, biological assessment, wildlife ecology, and ornithological research
Wilson Fogler, CDM Smith	BS Forestry (Wildlife Habitat Management and Conservation Concentration)	5 years of experience in threatened and endangered species surveys, biological assessments, regulatory compliance, and permitting.
Kate Stenberg, PhD, CDM Smith	PhD Wildlife and Fisheries Science; M. Admin. Environmental Administration; BA Biology – Environmental Studies	35 years of experience in wildlife assessment and conservation, planning, environmental documentation, multiagency permitting, and litigation support.

Attachment A
USFWS Information for Planning and Consultation and California Natural Diversity Database Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: July 15, 2021
Consultation Code: 08ESMF00-2021-SLI-2330
Event Code: 08ESMF00-2021-E-06691
Project Name: SAFER BAY - Borings

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2021-SLI-2330
Event Code: 08ESMF00-2021-E-06691
Project Name: SAFER BAY - Borings
Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES
Project Description: Soil borings in support of a new Levee
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.49272245,-122.14073715055827,14z

Counties: San Mateo County, California

Endangered Species Act Species

There is a total of 17 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/613

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/321

Crustaceans

NAME	STATUS
Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/2246

Flowering Plants

NAME	STATUS
California Seablite *Suaeda californica*	Endangered

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6310

Fountain Thistle *Cirsium fontinale var. fontinale* — Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7939

Marin Dwarf-flax *Hesperolinon congestum* — Threatened
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5363

San Mateo Thornmint *Acanthomintha obovata ssp. duttonii* — Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2038

Showy Indian Clover *Trifolium amoenum* — Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6459

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Mountain View (3712241) OR Redwood Point (3712252) OR Newark (3712251) OR Niles (3712158) OR Palo Alto (3712242) OR Milpitas (3712148) OR Mindego Hill (3712232) OR Cupertino (3712231) OR San Jose West (3712138))
 AND Federal Listing Status IS (Endangered OR Threatened)

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Alameda whipsnake *Masticophis lateralis euryxanthus*	ARADB21031	Threatened	Threatened	G4T2	S2	
Bay checkerspot butterfly *Euphydryas editha bayensis*	IILEPK4055	Threatened	None	G5T1	S1	
California least tern *Sternula antillarum browni*	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California Ridgway's rail *Rallus obsoletus obsoletus*	ABNME05011	Endangered	Endangered	G3T1	S1	FP
California seablite *Suaeda californica*	PDCHE0P020	Endangered	None	G1	S1	1B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3	S2S3	WL
Contra Costa goldfields *Lasthenia conjugens*	PDAST5L040	Endangered	None	G1	S1	1B.1
fountain thistle *Cirsium fontinale var. fontinale*	PDAST2E161	Endangered	Endangered	G2T1	S1	1B.1
marbled murrelet *Brachyramphus marmoratus*	ABNNN06010	Threatened	Endangered	G3	S2	
Marin western flax *Hesperolinon congestum*	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
robust spineflower *Chorizanthe robusta var. robusta*	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
salt-marsh harvest mouse *Reithrodontomys raviventris*	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
San Francisco gartersnake *Thamnophis sirtalis tetrataenia*	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
San Mateo thorn-mint *Acanthomintha duttonii*	PDLAM01040	Endangered	Endangered	G1	S1	1B.1
San Mateo woolly sunflower *Eriophyllum latilobum*	PDAST3N060	Endangered	Endangered	G1	S1	1B.1
steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
two-fork clover *Trifolium amoenum*	PDFAB40040	Endangered	None	G1	S1	1B.1
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
western snowy plover *Charadrius nivosus nivosus*	ABNNB03031	Threatened	None	G3T3	S2	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 21

Attachment B
Federally Listed Species with the Potential to Occur in the Action Area

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
MAMMAL						
Salt marsh harvest mouse	*Reithrodontomys raviventris*	FE	Preferred habitat is pickleweed (*Salicornia virginica*)	Spring through Autumn	Restricted to the salt and brackish marshes of San Francisco, San Pablo, and Suisun Bay areas.	According to the California Natural Diversity Database (CNDDB), the salt marsh harvest mouse has been observed in the northern Action Area (AA) from 1990 and in the southern AA from 1991 (CDFW 2021). The USFWS has listed mitigation measures that will be required for the project. **Effect Determination:** **May affect, not likely to adversely effect**
BIRDS						
Ridgway's rail (aka California clapper rail)	*Rallus longirostris obsoletus*	FE	Coastal salt marshes and lagoons that contain pickleweed and cordgrass (*Spartina* sp.).	March – August	Marshes of the San Francisco estuary (USFWS 2017a).	According to the CNDDB, the Ridgway's rail has been observed in the northern AA from 2017 and in the southern AA from 2018 (CDFW 2021). eBird (Cornell 2021) has numerous records of Ridgway's rails in or near the AAs in recent years. The most recent sightings are from 2020 in Ravenswood Open Space Preserve and Cooley Landing Park, and from 2021 on Ravenswood Trail (Cornell 2021a and Cornell 2021b). The USFWS has listed mitigation measures that will be required for the project. **Effect Determination:** **May affect, not likely to adversely effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
California least tern	*Sternula antillarum browni*	FE	Open beaches and nearshore waters.	March – October	Extending to San Francisco along the California coast to Tijuana, Mexico. Occurs on the California coast in late spring and summer. Also found in western Arizona (USFWS 2020a).	The California least tern has been recorded in the CNDDB 1.4 miles to the northwest from 1976 and 2 miles to the southeast from 1987 of the AAs (CDFW 2021). eBird (Cornell 2021c) has a record from the Don Edwards National Wildlife Refuge (NWR) - Ravenswood Salt Pond SF2, just south of the northern AA, from 2015. The USFWS has listed mitigation measures that will be required for the project. **Effect Determination:** **May affect, not likely to adversely effect**
Marbled murrelet	*Brachyramphus marmoratus*	FT	Nearshore marine waters (foraging) and inland old growth coniferous forests (nesting)	March – September	Pacific coast from Alaska to California (USFWS 1997).	The proposed project is outside of the current range for the marbled murrelet. No suitable old growth coniferous forest habitat exists within or adjacent to the AAs. The nearest CNDDB documented occurrence was reported over 11 miles to the west from 2007 (CDFW 2021). Designated critical habitat exists 9 miles to the west/southwest. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Western snowy plover	*Charadrius nivosus nivosus*	FT	Coastal beaches.	March – September	Midway Beach, Washington south to Bahia Magdalena, Baja California, Mexico (USFWS 2007a).	According to the CNDDB, the western snowy plover has been observed in the northern AA in 2017 and in the southern AA in 2002 (CDFW 2021). eBird has numerous records of western snowy plover in or near the AAs in recent years. The most recent sighting is from 2021 in the Don Edwards NWR - Ravenswood Salt Ponds R1/R2 (Cornell 2021d). The USFWS has listed mitigation measures that will be required for the project. The northern AA overlaps with designated critical habitat for the western snowy plover. No impact is anticipated to the critical habitat from noise as the borings are to be located to the north of busy CA State Highway Route 84 and the critical habitat is to the south of this road. **Effect Determination:** **May affect, not likely to adversely effect**
Yellow-billed cuckoo [Western U.S. distinct population segment (DPS)]	*Coccyzus americanus occidentalis*	FT	Requires large tracts of dense riparian forest for breeding (typically greater than 50 acres).	May – September	West of the Rocky Mountains from Canada to Mexico (USFWS 2019).	No suitable riparian forest habitat exists within or adjacent to the AAs. The nearest historic CNDDB documented occurrence of yellow-billed cuckoo was reported over 11 miles to the southeast in 1899 and presence is listed as "extirpated" (CDFW 2021). Designated critical habitat exists 120 miles to the north. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
REPTILES						
Green sea turtle, East Pacific DPS	*Chelonia mydas*	FT	Beaches for nesting, open ocean convergences zone, and coastal areas for benthic feeding (seagrass and algae).	Roughly June through September	In the U.S. Pacific, nesting in Hawaii, Commonwealth of the Northern Marianas, Guam, and American Samoa (USFWS 2015).	No suitable beaches or open ocean areas are within the AAs. The AAs are within the range of the green sea turtle. The nearest CNDDB documented occurrence was reported over 300 miles to the south/southeast (CDFW 2021). Therefore, no potential direct or indirect effects to the species is anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	FE	Adult San Francisco garter snakes feed on California red-legged frogs. They may also feed on juvenile bullfrogs. The snakes' preferred habitat is a densely vegetated ponds near open hillsides where they can sun themselves, feed, and find cover in rodent burrows. These snakes avoid brackish marsh areas because their preferred prey (California red-legged frogs) cannot survive in saline water.	June through September	Historically, San Francisco garter snakes occurred in scattered wetland areas on the San Francisco Peninsula from the San Francisco County line south along the base of the Santa Cruz Mountains and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County (USFWS 2017b).	No preferred freshwater habitats are within the AAs. The AAs are within the range of the San Francisco garter snake. According to the CNDDB, there is a historic observation of the San Francisco garter snake that overlaps with the AAs from 1922. More recent occurrences are 6 miles west from 2016 and 6 miles south from 2012 (CDFW 2021). Therefore, no potential direct or indirect effects to the species is anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
AMPHIBIANS						
California red-legged frog	*Rana draytonii*	FT	Varied freshwater breeding habitats (e.g., streams, creeks, ponds, marshes) within a matrix of riparian and upland dispersal habitats.	November – April	Coastal drainages from central California to northern Baja California (USFWS 2002).	The potential for California red-legged frog (CRLF) to occur in the AAs is considered low due to the presence of dominant brackish water habitats. CRLF has not been documented within the AAs and is unlikely to occur in the project area because the species is limited to freshwater habitats. The nearest documented occurrences have been from 4 miles west in 1955 and over 5 miles southwest from 2016 (CDFW 2021). Designated critical habitat exists 9 miles to the west and 9.9 miles to the southwest. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
California tiger salamander, central California DPS	*Ambystoma californiense*	FT	Non-breeding habitat includes humid forests, woodlands, grasslands, coastal shrub, and streamsides. Breeding occurs in shallow freshwater ephemeral or semi-permanent vernal pools and ponds that fill during heavy winter rains.	November - February	Central Valley of California. Small populations around Santa Barbara and Sonoma. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County (up to elevations of 3,500 ft) (USFWS 2017c).	The potential for California tiger salamander to occur in the AAs is considered low due to the presence of dominant brackish water habitats. This salamander has not been documented within the AAs and is unlikely to occur in the project area because the species is limited to freshwater habitats. According to the CNDDB, there are historic observations of the California tiger salamander 1.5 miles to the south/southwest from 1983 and 2.9 miles to the south from 1900. A more recent occurrence is 4.1 miles to the southwest from 2018 (CDFW 2021). Designated critical habitat exists over 17 miles to the east. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
FISH						
Delta smelt	*Hypomesus transpacificus*	FT	The delta smelt is a pelagic and euryhaline species found in estuarine ecosystems.	February to July	Delta smelt are currently found in and near the Sacramento River-San Joaquin River estuary in California (USFWS 2016).	The AAs are outside of the range for the Delta smelt. The nearest CNDDB occurrence for this smelt is over 40 miles to the north from 2006 (CDFW 2021). Designated critical habitat for this species is also 40 miles to the north. Delta smelt are now generally restricted to the estuarine (salt and freshwater mixing zone) habitat of the Sacramento-San Joaquin Delta Estuary. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
Green sturgeon (southern DPS)	*Acipenser medirostris*	FT	Anadromous species that inhabits the nearshore marine environment outside of spawning in natal streams. Spawning habitat is cool, deep sections of large rivers with gravel and cobble bottoms.	March – June	Non-spawning adults occur across western seaboard of North America, from Alaska to Baja Mexico. Spawning only occurs in Sacramento River watershed (NMFS 2018).	There are no occurrences of green sturgeon recorded in the CNDDB (CDFW 2021). San Francisco Bay and San Francisquito Creek are listed as designated critical habitat for this sturgeon. The proposed project of conducting subsurface exploration at 15 sites along the proposed levee alignment is not expected to impact critical habitat for the green sturgeon. All work would be conducted outside of special status species windows and when water levels are at their lowest in the summer. All proposed staging is in previously disturbed upland habitats. This project does not include any in-water construction activities. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Steelhead [Central California Coast (DPS)]	*Oncorhynchus mykiss irideus* (pop. 8)	FT	Cold-water streams with adequate dissolved oxygen for spawning and rearing. Spawning habitat consists of gravel substrates free of excessive silt.	December – April	The central California coast steelhead DPS includes all populations below natural and manmade barriers from the Russian River (Sonoma County) south to Aptos Creek (Santa Cruz County) (California Trout 2017).	The CNDDB has recorded occurrences of the central California coast DPS steelhead 5.5 miles to the northeast on Alameda Creek and 8.6 miles to the southeast on the Guadalupe River (CDFW 2021). San Francisco Bay and San Francisquito Creek are listed as designated critical habitat for this steelhead. The proposed project of conducting subsurface exploration at 15 sites along the proposed levee alignment is not expected to impact critical habitat for the central California coast DPS steelhead. All work would be conducted outside of special status species windows and when water levels are at their lowest in the summer. All proposed staging is in previously disturbed upland habitats. This project does not include any in-water construction activities. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
CRUSTACEANS						
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	The vernal pool tadpole shrimp is found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California	Variable and dependent on rainfall.	The vernal pool tadpole shrimp has a patchy distribution across the Central Valley of California, from Shasta County southward to northwestern Tulare County, with isolated occurrences in Alameda and Contra Costa Counties. The species is not known to occur in San Mateo County, California (USFWS 2007b).	The CNDDB records no occurrences of vernal pool tadpole shrimp in the AAs or in San Mateo County. The nearest CNDDB occurrence for this shrimp is over 7 miles to the north/northeast from 2016 (CDFW 2021). Designated critical habitat for this species is also over 7 miles to the east. The proposed project of conducting subsurface exploration at 15 sites along the proposed levee alignment is not expected to impact critical habitat for the vernal pool tadpole shrimp. All work would be conducted when water levels are at their lowest in the summer. All proposed staging is in previously disturbed upland habitats. This project does not include any in-water construction activities. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
INSECTS						
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT	Shallow, serpentine-derived soil, on grassy slopes and flats or open woodland. The primary larvae host plant is dwarf plantain (*Plantago erecta*) and the secondary host plant is purple owl's clover (*Castilleja densiflora* or *C. exserta*).	Late February to early May	Historically, the Bay checkerspot occurred primarily along the spine of the San Francisco Peninsula, from Twin Peaks to southern Santa Clara County and in a few pockets in Alameda and Contra Costa counties (USFWS 2018).	No suitable habitat exists within or adjacent to the AAs for the host plants of the bay checkerspot butterfly. The nearest CNDDB documented occurrence of this butterfly is over 7.5 miles to the west in 12017 (CDFW 2021). Designated critical habitat also exists over 7 miles to the west. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
PLANTS						
California seablite	*Suaeda californica*	FE	California seablite is most commonly found in the narrow ecotone between salt marsh and stable dune scrub communities occurring at the edge of the salt marsh.	January – August	Historically found in the San Francisco Bay Area, now it is limited to re-established occurrences in selected areas of the bay area (USFWS 2010a).	Natural populations of the California seablite have been extirpated in the San Francisco Bay area. The nearest extirpated occurrence of this plant was 0.9 miles to the southeast from 1971, although the 5 year review indicates that there had been no valid reports or collections since 1960 (USFWS 2010). Re-establishment has been conducted in the San Francisco Bay area with the nearest re-established occurrence being over 13 miles north from 2009 (CDFW 2021). No suitable habitat exists within or adjacent to the AAs for the California seablite. Therefore, no potential direct or indirect effects to the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
Contra Costa goldfields	*Lasthenia conjugens*	FE	Contra Costa goldfields grows in vernal pools within open grassy areas in woodlands and valley grasslands from sea level to 1,500 feet.	March – June	Currently, 22 populations are believed to be extant in Mendocino, Napa, Marin, Contra Costa, Alameda, Solano, and Monterey counties (USFWS 2010b).	No suitable habitat vernal pool habitat exists within or adjacent to the AAs. The nearest CNDDB historic occurrence was reported 4.5 miles to the northeast from 1895. There is a more recent occurrence from 8.1 miles to the east from 2011 (CDFW 2021). No CNDDB occurrences are recorded from the southwestern San Francisco Bay Area. Designated critical habitat exists over 35 miles to the north. Therefore, no potential direct or indirect effects to the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Fountain thistle	*Cirsium fontinale* var. *fontinale*	FE	Habitat is restricted to perpetually moist clay openings in riparian or serpentine chaparral between about 90 and 190 meters (300 to 600 ft) in elevation.	June – October	Historically, this plant occurred in both San Mateo and Santa Clara counties, but it is now found in only four locations in San Mateo County (USFWS 2009a).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest documented occurrence is 6.5 miles to the west from 2013 (CDFW 2021). Therefore, no potential direct or indirect effects to the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
Marin dwarf-flax (aka Marin western flax)	*Hesperolinon congestum*	FT	Marin dwarf-flax is found on serpentine soils between 30 and 370 meters (100 to 1,200 feet) altitude.	May – July	From Main County south to San Mateo County (USFWS 2009b).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest documented occurrence is 6.5 miles to the west from 2007 (CDFW 2021). Therefore, no potential direct or indirect effects to the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
San Mateo thornmint	*Acanthomintha obovata ssp. duttonii*	FE	San Mateo thornmint is restricted to serpentine soils of chaparral and valley and foothill grasslands in San Mateo County. The species occupies slopes and flats with deep, heavy-clay soil inclusions.	April – June	The only remaining large population, in Edgewood County Park, is a remnant of a more extensive population damaged by motor-vehicle use. Edgewood County Park also contains a small subpopulation. There is an introduced population at Pulgas Ridge (USFWS 2009c).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest documented occurrence is 5 miles to the west from 1977. A more recent occurrence is 7.5 miles to the west from 2013 (CDFW 2021). Therefore, no potential direct or indirect effects to the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Showy Indian clover (aka two-forked clover)	*Trifolium amoenum*	FT	The species was found in a variety of habitats including low, wet swales, grasslands and grassy hillsides. It typically grows in moist, heavy soils below 100 meters altitude (328 feet).	April – June	Showy Indian clover was extirpated from all of its 24 historically known locations. The species was considered extinct until 1993, when a single plant was discovered on privately owned property in Sonoma County. That site has since been developed and the species is no longer present. Another natural population, consisting of about 200 plants, was discovered in 1996 in Marin County on privately owned property (USFWS 2007c).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest CNDDB historic occurrence was reported 6.2 miles to the southwest from 1950. There is a more recent occurrence from 65 miles to the north from 2002 (CDFW 2021). Therefore, no potential direct or indirect effects to the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
White-rayed pentachaeta	*Pentachaeta bellidiflora*	FE	This species is found in serpentine soils, which are formed from weathered volcanic rock.	March –May	Historically ranged from Main County to Santa Cruz County. A small remnant population exists in Edgewood County Park (USFWS 2009d).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest CNDDB historic occurrence is 8.6 miles to the west from 2004 (CDFW 2021). Therefore, no potential direct or indirect effects to the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

FE = Federally Endangered
FT = Federally Threatened

APPENDIX B REFERENCES

California Department of Fish and Wildlife (CDFW). 2021. California Natural Diversity Database (CNDDB) – Commercial version dated January 1, 2021. Accessed July & August 2021, https://wildlife.ca.gov/data/cnddb/maps-and-data#43018407-rarefind-5.

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_____. 2021b. Ravenswood Trail Checklist, March 29, 2021. eBird accessed on July 30, 2021.

_____. 2021c. Don Edwards National Wildlife Refuge-Ravenswood Salt Pond SF2 Checklist, April 18, 2015. eBird accessed on July 30, 2021.

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National Marine Fisheries Service (NFMS). 2018. Recovery plan for the Southern Distinct Population Segment of the North American green sturgeon (*Acipenser medirostris*). NMFS West Coast Region, California Central Valley Office, Sacramento, CA.

United States Fish and Wildlife Service (USFWS). 2020a. California least tern (*Sternula antillarum brownii*) 5-year Review: Summary and Evaluation. USFWS Carlsbad Fish and Wildlife Office, Carlsbad, CA.

_____. 2019. Programmatic Biological Opinion for the Federal Emergency Management Agency's Disaster, Mitigation, and Preparedness Programs within the Ventura Fish and Wildlife Office's Jurisdiction. USFWS Ventura Fish and Wildlife Office, Ventura, CA.

_____. 2018. Species account for the bay checkerspot butterfly (*Euphydryas editha bayensis*). Sacramento Fish & Wildlife Office. Last updated April 4.

_____. 2017a. Species account for the Ridgway's rail (*Rallus longirostris obsoletus*). Sacramento Fish & Wildlife Office. Last updated November 30.

_____. 2017b. Species account for the San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). Sacramento Fish & Wildlife Office. Last updated December 6.

_____. 2017c. Species account for the California tiger salamander (*Ambystoma californiense*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated December 6.

_____. 2016. Species account for the delta smelt (*Hypomesus transpacificus*). Bay Delta Fish & Wildlife Office, Sacramento, California. Last revised August 15.

_____. 2015. Fact Sheet for the Green Sea Turtle (*Chelonia mydas*). North Florida Ecological Services Office, Southeast Sea Turtle Coordinator, Jacksonville, Florida. Last revised April.

_____. 2010a. *Suaeda californica* (California sea-blite) 5-year Review: Summary and Evaluation. USFWS Ventura Fish and Wildlife Office, Ventura, CA. February.

_____. 2010b. Species account for the Contra Costa goldfields (*Lasthenia conjugens*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated February 17.

_____. 2009a. Species account for the fountain thistle (*Cirsium fontinale var. fontinale*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated August 27.

_____. 2009b. Species account for the Marin dwarf-flax (*Hesperolinon congestum*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated September 21.

_____. 2009c. Species account for the San Mateo thornmint (*Acanthomintha obovata ssp. duttonii*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated August 24.

_____. 2009d. Species account for the white-rayed pentachaeta (*Pentachaeta bellidiflora*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated November 20.

_____. 2007a. Recovery plan for the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*). USFWS California/Nevada Operations Office, Sacramento, CA.

_____. 2007b. Vernal pool tadpole shrimp (*Lepidurus packardi)* 5-year Review: Summary and Evaluation. USFWS Sacramento Fish and Wildlife Office, Sacramento, CA. September.

_____. 2007c. Species account for the Showy Indian clover (*Trifolium amoenum*). Sacramento Fish & Wildlife Office, Sacramento, California. Last updated June 13.

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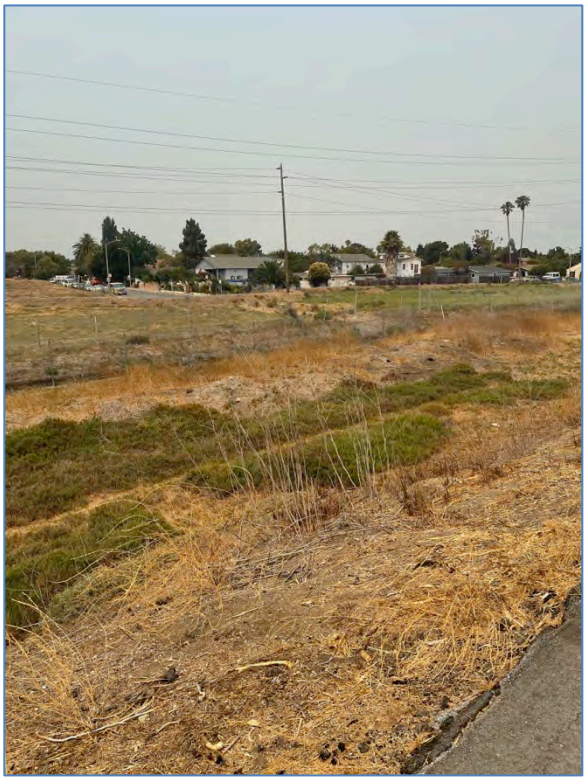
Attachment C
Ground Photos of SAFER Bay Phase 1b
Proposed Geotechnical Boring Locations

C-108

1. Wide angle looking NE
2. Wide angle looking NW
3. Wide angle looking SW



C-107

1. View from South looking NW
2. Close-up of view from South looking NW
3. Close-up opposite location looking W

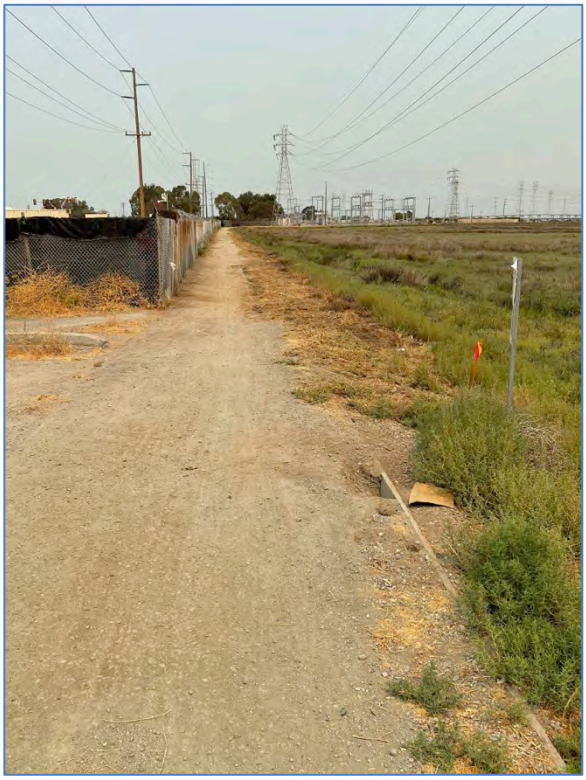
Photos taken 8/18/2021

C-106

1. View from South looking NW
2. View opposite looking WSW
3. View opposite looking WNW

C-105

1. Wide angle looking NE
2. Wide angle looking W
3. Close-up looking SW



C-104

1. Looking NW
2. Looking N
3. Looking NE

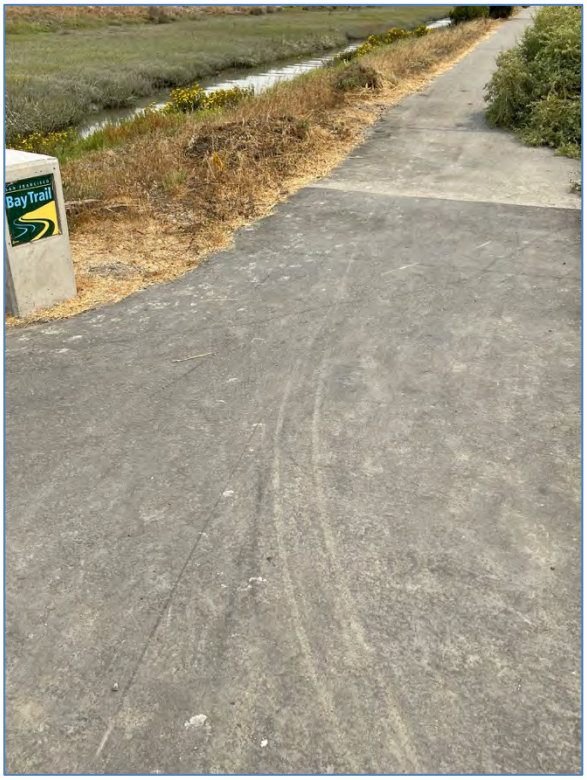
B-107

1. Long view looking up Bay Road
2. Wide angle view from S
3. Close-up

Photos taken 8/18/2021

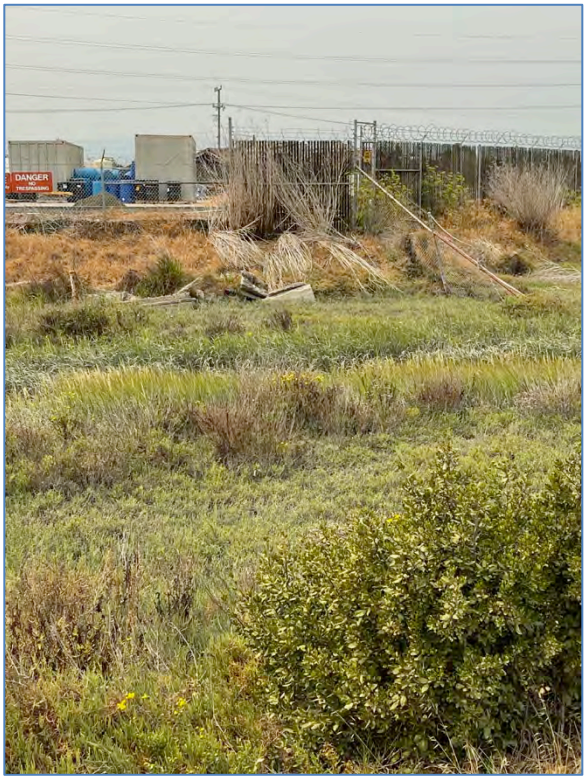
B-107alt

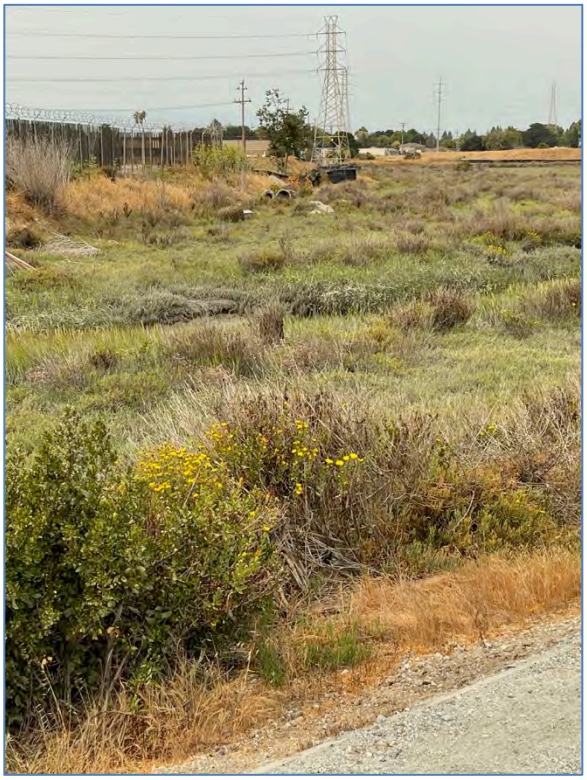
1. Long view from S
2. Looking NW
3. Looking W



B-106

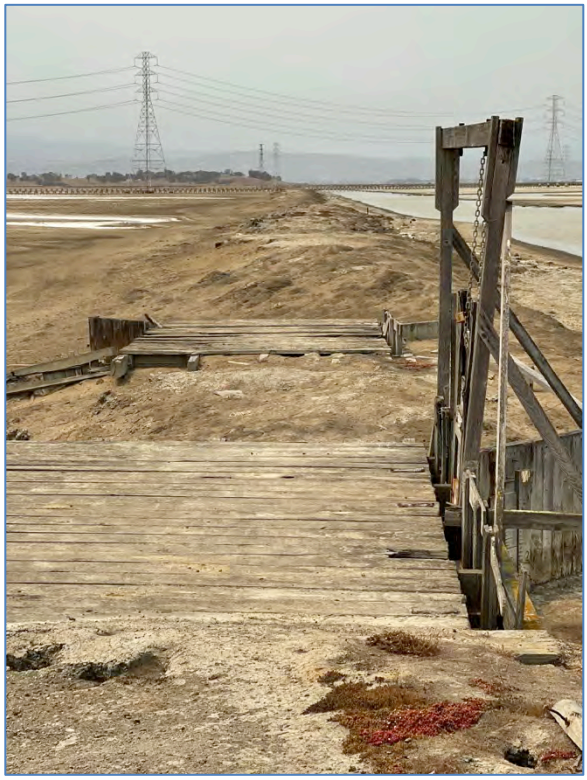
1. Looking N
2. Looking SW
3. Looking W





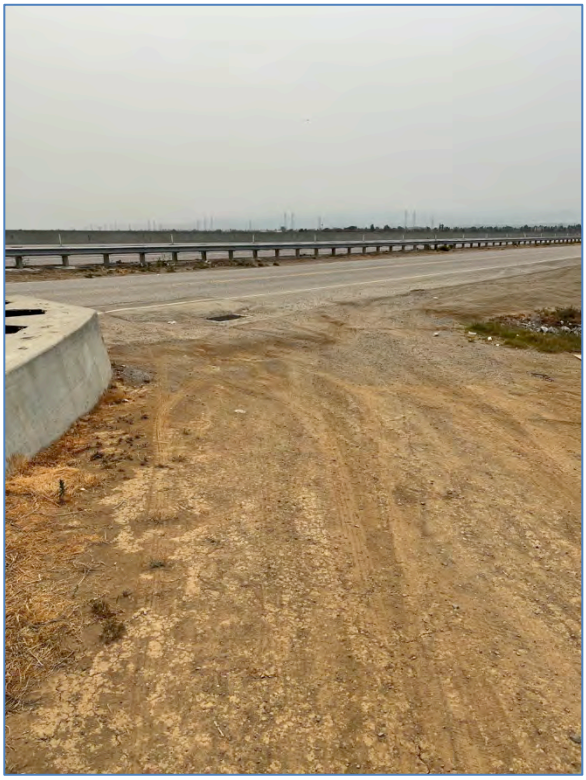
B-105

1. Long range view from S of turn-off to B-105
2. Long range view looking NW of access to B-105
3. Looking down levee (W) toward B-105 showing crumbling levee (might be accessible from opposite side)



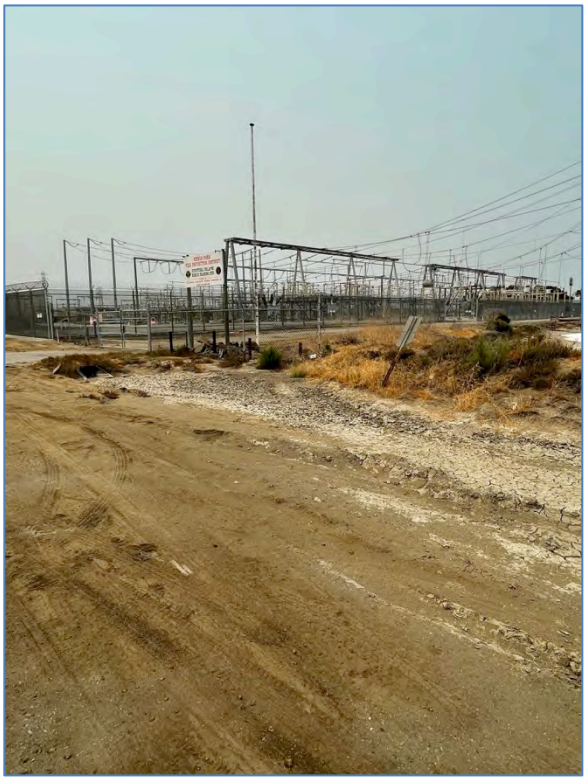
B-104

1. Long range view from NW looking toward Rt.84
2. Close-up looking SE
3. Close-up looking SW



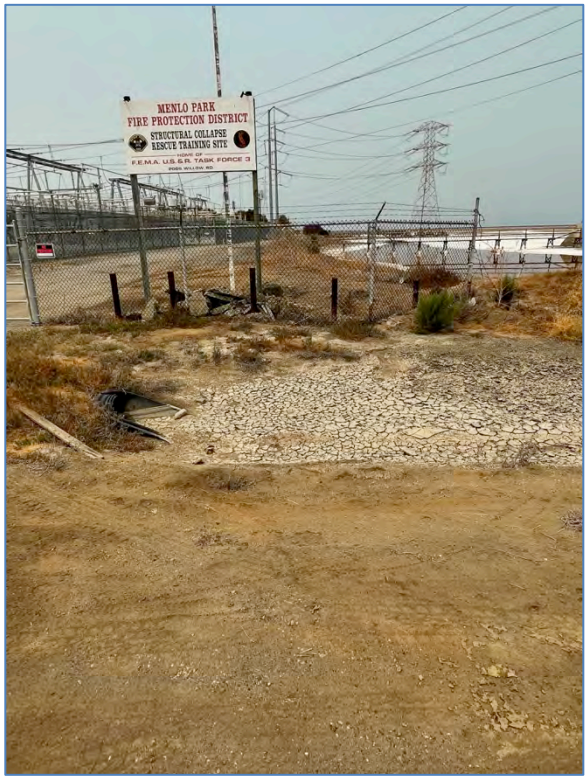
C-103

1. Long range view of N corner of substation
2. Zoom view of N corner of substation
3. Zoom view looking slightly further N



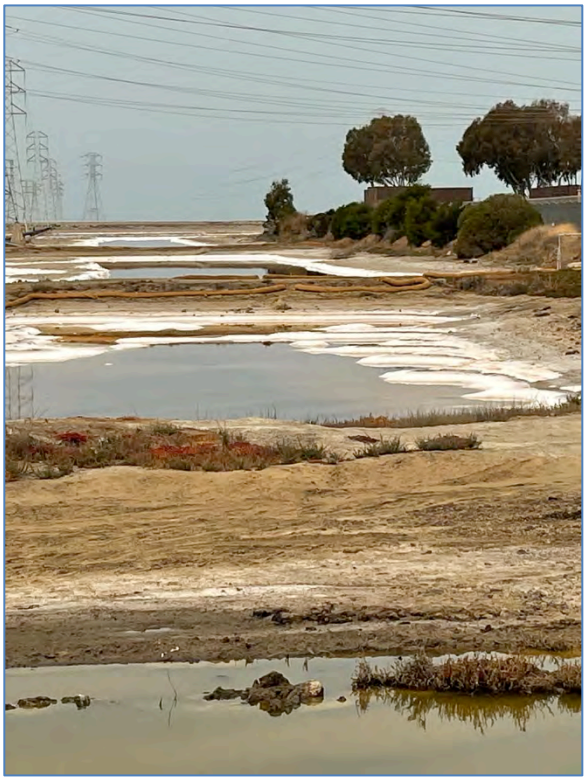
B-103

1. Looking W
2. Looking WNW
3. Looking NW



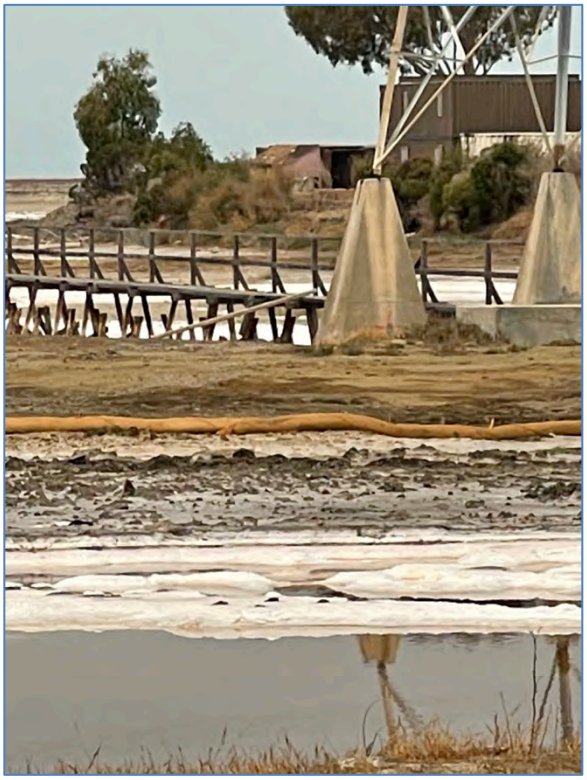
C-102

1. Long range view looking N
2. Close-up looking N
3. View from further S on Rt.84



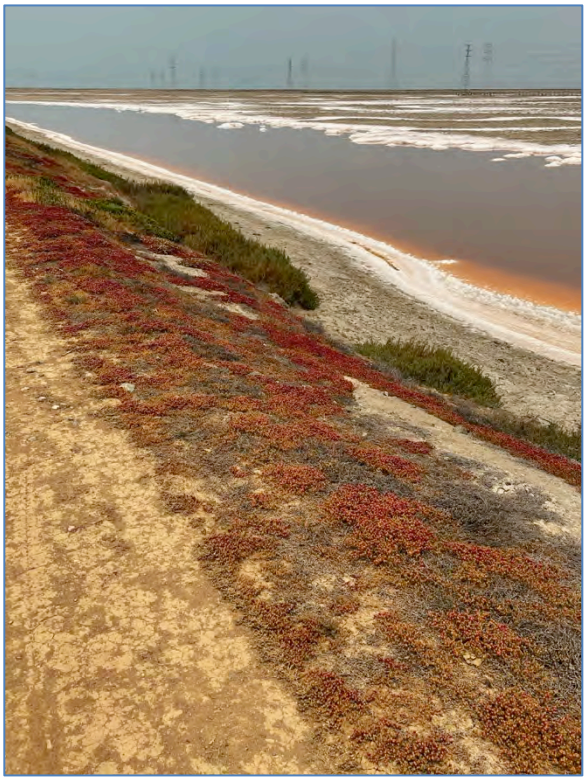
B-102

1. Long range view from S looking N
2. Medium zoom from S looking N
3. Large zoom from S looking N



B-101

1. Long range view looking NW
2. Close-up looking W
3. Close-up looking N

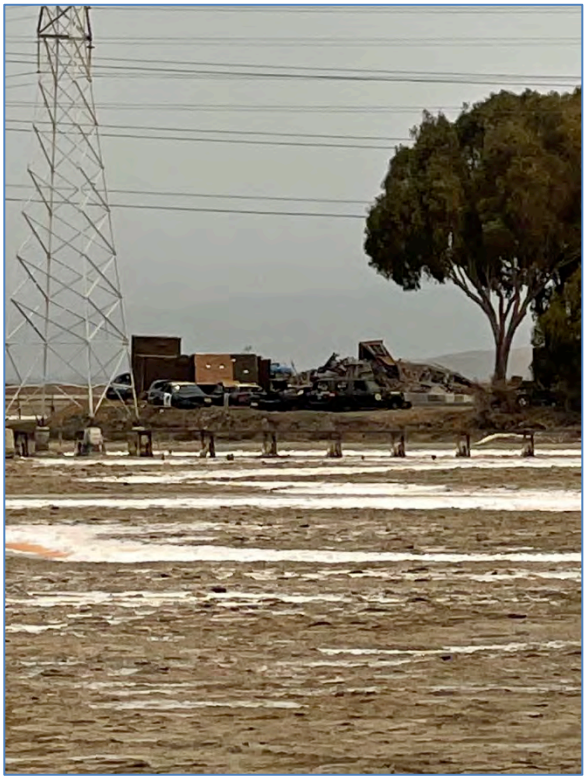


C-101

1. View looking down side of levee to N
2. View looking down side of levee to W
3. Long range view looking up levee to NW

B-102 (other angle)

1. Looking at W corner of substation from SW with large zoom
2. Same as #1 but looking further N
3. Wide angle view of W corner of substation



U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

April 6, 2023

Attn: Eric Hinkley
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Subject: Notice of Endangered Species Act Compliance
EMF-2020-BR-001-0002
Strategy to Advance Flood Protection, Ecosystems and Recreation (SAFER Bay) Project, Phase 1b (geotechnical investigations)
Subrecipient: City of Menlo Park

Dear Eric:

FEMA Environmental and Historic Preservation (EHP) received the enclosed Concurrence letter from the US Fish and Wildlife Service (USFWS). This completes the Informal Section 7 consultation for the following Project:

FEMA Disaster #	Title	ESA Effects Determination
EMF-2020-BR-001-0002	City of Menlo Park – SAFER Bay Project, Phase 1b (geotechnical evaluations)	USFWS NLAA – salt marsh harvest mouse (*Reithrodontomys raviventris*)
EMF-2020-BR-001-0002	City of Menlo Park – SAFER Bay Project, Phase 1b (geotechnical evaluations)	USFWS NLAA – CA clapper rail (*Rallus longirostris obsoletus*)
EMF-2020-BR-001-0002	City of Menlo Park – SAFER Bay Project, Phase 1b (geotechnical evaluations)	USFWS NLAA – CA least tern (*Sterna antillarum browni*)
EMF-2020-BR-001-0002	City of Menlo Park – SAFER Bay Project, Phase 1b (geotechnical evaluations)	USFWS NLAA – Pacific Coast population - western snowy plover (*Charadrius nivosus nivosus*)

The USFWS issued the enclosed "stand-alone" Concurrence which describes the potential impacts and contains a list of applicable General Avoidance and Minimization Measures (AMMs) and Species-Specific Conservation Measures (CMs) which the City of Menlo Park shall implement for the proposed project. The corresponding AMMs and CMs are described in detail in the enclosed February 19, 2023, USFWS Concurrence letter. It is the responsibility of the Subrecipient to comply with all applicable

AMMs, CMs, and the terms and conditions of the project Informal Section 7 Concurrence letter dated February 19, 2023.

In addition to implementation of the applicable AMMs and CMs, the Subrecipient (City of Menlo Park) must submit the Post-Construction Notification Reporting Form included in this transmittal to FEMA EHP and USFWS within 45 days of project construction completion. Failure to comply with any of the AMMs, CMs, and terms and conditions listed within the February 2023 USFWS Concurrence letter may jeopardize federal assistance including funding.

Please sign and return the attached Endangered Species Act Compliance Memorandum acknowledging the City of Menlo Park has received this notification and will implement all applicable conditions provided by the USFWS for the proposed actions.

If you require additional information related to this correspondence, please contact Adam Klatzker at adam.klatzker@fema.dhs.gov or (202) 702-7650. For information regarding the USFWS concurrence, contact Valary Bloom, Senior Fish and Wildlife Biologist at valary_bloom@fws.gov .

Sincerely,

David Cohen
Deputy Regional Environmental Officer
FEMA Region IX

United States Department of the Interior

FISH AND WILDLIFE SERVICE
San Francisco Bay-Delta Fish and Wildlife Office
U.S. Fish and Wildlife Service
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814

In Reply Refer To:
2023-0039359-S7-001

February 19, 2023

Mr. Kenneth Sessa
Acting Environmental Officer
U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

Subject: Informal Section 7 Consultation on the Strategy to Advance Flood Protection, Ecosystems and Recreation Project, Phase 1b (geotechnical investigations), San Mateo County, California

Dear Mr. Sessa:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA), in a letter dated January 27, 2023, has requested informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Strategy to Advance Flood Protection, Ecosystems and Recreation Project (SAFER), Phase 1b (Project), San Mateo County, California (FEMA File #KS-EMF-2020-BR-001-0002). The FEMA determined that the project may affect but is not likely to adversely affect the endangered salt marsh harvest mouse (*Reithrodontomys raviventris;* SMHM), the endangered California clapper rail[1] (*Rallus longirostris obsoletus;* CCR), the endangered California least tern (*Sterna antillarum browni;* CLT), and the threatened Pacific Coast population of western snowy plover (*Charadrius nivosus nivosus;* WSP). The FEMA proposes to provide financial assistance, through the California Governor's Office of Emergency Services, to the City of Menlo Park for this Project. This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

1 Regarding taxonomic assignment and nomenclature for the California clapper rail, until a time when the Service officially adopts changes made by the American Ornithologists' Union (from California clapper rail [*Rallus longirostris obsoletus*] to Ridgway's Rail [*Rallus obsoletus obsoletus*]), the Service maintains the use of California clapper rail (*Rallus longirostris obsoletus*) as used in this current correspondence.

In reviewing the Project, the Service has relied upon: (1) the FEMA's letter requesting concurrence with their determination; (2) the revised Biological Assessment for the Project dated February 7, 2023; and (3) other information available to the Service.

Project Description

The City of Menlo Park (Subapplicant) proposes to construct the SAFER Bay Project, which would consist of approximately 3.7 miles of additional flood protection levees, floodwalls, and/or floodgates along the southwest San Francisco Bay shoreline near Menlo Park, in San Mateo County, California. The SAFER Bay Project would provide protection from 100-year flood events and 3.5 feet of sea level rise. The Project as defined here, Phase 1b of the SAFER Bay Project, includes only the FEMA-funded geotechnical investigations work necessary to complete the design of the larger project. Specifically, of the nine reaches of the SAFER Bay Project, this document addresses only the geotechnical investigations component for Reaches 2, 3 and 4. Informal consultation for geotechnical investigations for all or parts of Reaches 5, 7, 8, and 9 was completed in 2022 (Service file #2022-0003783).

The proposed work would include geotechnical investigations at seven sites, including three exploratory borings and four cone penetration testings (CPTs) at the following locations:

- Two sites (B-108 and C-109) are on an existing levee that separates salt evaporation Ponds R5 and S5 from salt evaporation Ponds R3 and R4.
- Two sites (B-109 and C-110) are along the Bay Trail between California State Route 84 and salt evaporation Pond R3.
- The remaining three sites are along the Bay Trail that surrounds the Facebook Meta Headquarters.

A gravel staging area at Bedwell Bayfront Park would be utilized.

Of the seven sites, at three, borings would be drilled and at four, cones would be pushed using CPT, 50 to 70 feet deep. A rotary auger drill would conduct the borings. During CPT, a CPT rig pushes a steel cone, with a diameter between 1.4 and 1.7 inches, down vertically into the ground at a controlled rate to measure the resistance of soil, soil pressure, and other geotechnical properties.

All work would be conducted in accordance with seasonal work windows for listed species. To avoid impacts on federally listed nesting bird species, work would occur after September 14 and before February 1; no work would occur anywhere within the Project area from February 1 through September 14 to avoid the CCR, CLT, and WSP nesting seasons.

All proposed geotechnical exploration locations are on previously disturbed sites, which are primarily levee crowns that are accessed regularly by maintenance vehicles, and are free of vegetation. No vegetation clearing equipment would be required to access or to conduct drilling at these locations. No new access routes would be created for drill rigs to reach the proposed boring or CPT locations. Drill rigs would access the boring locations via previously disturbed

access roads, trails, road shoulders, and top of levees, to limit potential impacts on nearby vegetation and water quality. No vegetated areas would be disturbed, and no equipment would be used off-levee or off-trail.

Employee vehicles, truck-mounted drill rigs, and track-mounted drill rigs are the vehicles to be used on roads, established trails, top of levees, and road shoulders for the Project. Drill crews would have equipment and supplies such as tubs, hoses, casings, drums, bags, and any other items associated with self-contained drilling operations. All boring/CPT-related equipment and materials would be stored at the Bedwell Bayfront Park. The staging area is a gravel surface with ample vehicular access. There would be no staging in the marsh or on the levees.

Geotechnical boring/CPT work activities would occur over an approximately one-week period between September 15 and January 31. Mobilization of four different exploratory rigs would be required—a truck boring rig, a tracked boring rig, a truck CPT rig, and a tracked CPT rig. One workday is estimated for the single truck rig boring at B-109; two days would be required for the two track rig borings at B-108 and B-110; a half day would be required for the single truck rig CPT at C-110; and one and a half days would be required for the three-track rig CPTs at C-109, C-111, and C-112. Therefore, a total of approximately five workdays would be required to complete the seven explorations (three borings and four CPTs). If the borings and CPTs are performed consecutively without a break in time, completion would require a total of approximately one week. If any break in time is scheduled between the borings and CPT operations, then the total time for completion would be extended accordingly.

General Avoidance and Minimization Measures (AMMs)

In addition to general best management practices, the Project will implement the following specific measures (abbreviated for relevance) to avoid and minimize effects of the Project to federally listed species:

GEN AMM-3 Dust Control Measures: To reduce dust, all traffic associated with the Subapplicant's geotechnical investigations will be restricted to a speed limit of 15 miles per hour when traveling off highways or on county roads.

GEN AMM-4 Spill Control Planning: The Subapplicant will prepare a Spill Prevention and Pollution Control Plan to address the storage of hazardous materials and emergency cleanup of any hazardous material, and it will be available on-site, if applicable. The plan will incorporate hazardous waste, stormwater, and other emergency planning requirements.

GEN AMM-5 Spill Prevention and Pollution Control Measures: The Subapplicant will exercise every reasonable precaution to protect listed species and their habitats from pollution caused by fuels, oils, lubricants, construction byproducts, and pollutants such as construction chemicals, fresh cement, saw-water, or other harmful materials. Water containing mud, silt, concrete, or other byproducts or pollutants from geotechnical investigations will be treated by filtration, retention in a settling pond, or similar measures. Construction pollutants will be collected and transported to an authorized disposal area, as appropriate, per all Federal, State, and local laws and regulations.

No petroleum products, chemicals, silt, fine soils, or any substance or material deleterious to listed species will be allowed to pass into or be placed where it can pass into a stream channel or waterway. There will be no side casting of material into any waterway.

The Subapplicant will store all hazardous materials in properly designated containers within a storage area having an impermeable membrane between the ground and the hazardous materials. The storage area will be encircled by a berm to prevent the discharge of pollutants to groundwater or runoff into the habitats of federally listed species. A plan for the emergency cleanup of any hazardous material, as well as adequate materials for spill cleanup, will be available and maintained on-site.

GEN AMM-6 Equipment Inspection and Maintenance: Well-maintained equipment will be used to perform the work and, except in the case of a failure or breakdown, equipment maintenance will be performed off-site. Equipment will be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and properly disposed. Fueling of equipment will be conducted in accordance with procedures to be developed in the Spill Prevention and Pollution Control Plan.

Vehicles and equipment that are used during the project will be fueled and serviced in a "safe" area (i.e., outside of sensitive habitats) in a manner that will not affect federally listed species or their habitats. Spills, leaks, and other problems of a similar nature will be resolved immediately to prevent unnecessary effects on federally listed species and their habitats. A plan for the emergency cleanup of any hazardous material, as well as adequate materials for spill cleanup, will be available and maintained on-site.

GEN AMM-7 Fueling Activities: AMMs will be applied to protect federally listed species and their habitats from pollution caused by fuels, oils, lubricants, and other harmful materials. Vehicles and equipment that are used during project implementation will be fueled and serviced in a manner that will not affect federally listed species or their habitats. Machinery and equipment used during work will be serviced, fueled, and maintained on uplands to prevent contamination to surface waters. Fueling equipment and vehicles will be kept more than 200 feet away from Waters of the United States. Exceptions to this distance requirement may be allowed for large cranes, pile drivers, and drill rigs if they cannot be easily moved.

GEN AMM-8 Equipment Staging: No staging of construction materials, equipment, tools, buildings, trailers, or restroom facilities will occur in a floodplain during flood season at the proposed action location, even if staging is only temporary.

GEN AMM-9 Materials Storage and Disposal: All hazardous materials will be stored in upland areas, inside storage trailers, and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use will be permitted, provided the same containment precautions are taken as described for hazardous materials storage. Once project construction is complete, all construction materials, wastes, debris, sediment, rubbish, trash, and fencing will be removed from the work sites and transported to an

authorized disposal area, as appropriate, in compliance with applicable Federal, State, and local laws and regulations. No storage of construction materials or debris will occur within a floodplain during the flood season.

GEN AMM-11 Waste Management: The work area will be kept free of loose trash, including small pieces of residual construction material, such as metal cuttings, broken glass, and hardware. All food waste will be removed from the site daily.

Once the project is completed, all construction material, wastes, debris, sediment, rubbish, vegetation, trash, and fencing will be removed from the site and transported to an authorized disposal area, as appropriate, per all Federal, State, and local laws and regulations.

GEN AMM-13 Work Area Designation to Minimize Disturbance: The Subapplicant will reduce, to the maximum extent practicable, the amount of disturbance at a site to the absolute minimum necessary to accomplish the Project.

Project planning must consider not only the effects of the action itself but also all ancillary activities associated with the actions, such as equipment staging and refueling areas, material storage areas, disposal sites, routes of ingress and egress to the project site, and all other related activities necessary to complete the Project.

GEN AMM-14 Access Routes and Staging Areas: When working on stream banks or within floodplains, disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance to sensitive habitats (e.g., stream banks, stream channel, riparian habitat, and saltwater marsh) as much as possible. When possible, existing ingress or egress points will be used and/or work will be performed from the top of the stream banks (levees).

All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside the flood zone of a watercourse, above areas of tidal inundation, away from riparian habitat or wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.

GEN AMM-15 Environmental Awareness Training for Construction Personnel: All construction personnel will be given environmental awareness training by the project's environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the listed species that may occur on-site, their habitats, general provisions and protections afforded by the Act, measures to be implemented to protect these species, and the project boundaries. This training will be provided within 3 days of the arrival of any new worker.

As part of the environmental awareness training, construction personnel will be notified that dogs or any other pets under the control of construction personnel will not be allowed in the

construction area. Also, no firearms will be permitted in the construction area unless carried by authorized security personnel or law enforcement.

GEN AMM-17 Daily Work Hours:
Artificial lighting necessary for nighttime work, if not carefully focused on the work site itself, can unnaturally illuminate marsh habitat, potentially disturbing marsh species by affecting their ability to evade predators. Construction activities that may affect suitable habitat for covered species will therefore be limited to daylight hours. Work at each of the seven locations is anticipated to last no more than one eight-hour day. Work will be allowed on weekends if the proposed construction is 14 days or fewer in length.

GEN AMM-19 Water Quality Protection: Contractors will exercise every reasonable precaution to protect federally listed species and their habitats from construction byproducts and pollutants (e.g., construction chemicals, fresh cement, saw-water, or other deleterious materials). Fresh cement or uncured concrete will not be allowed to come into contact with any waterway. Construction waste will be collected and transported to an authorized upland disposal area, as appropriate, and according to Federal, State, and local laws and regulations.

Salt Marsh Harvest Mouse AMMs

The Subapplicant will implement the following AMMs specific to the SMHM. Suitable SMHM habitat has been identified directly adjacent to the Project area but does not occur within the small footprints where the geotechnical investigations would actually take place.

SMHM AMM 1 Biological Monitor Duties: A Service-approved biological monitor will be present during all geotechnical investigation activities when located on levees adjacent to salt marsh and pickleweed-dominated habitats that have potential to support the SMHM. The monitor will have demonstrated experience in monitoring sensitive resource issues on construction projects and knowledge of the biology of the SMHM. If a SMHM is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the SMHM leaves the vicinity of the work area of its own volition and the Service is notified. Neither the biological monitor nor any other persons at the site will pursue, capture, handle, or harass any SMHM observed.

SMHM AMM 2 Service Personnel Access: If requested before, during, or upon completion of construction, Service personnel will be allowed access into work areas to inspect effects, if any, of the actions pertaining to the SMHM.

California Clapper Rail AMMs

The Subapplicant will implement the following AMMs specific to the CCR. Suitable CCR habitat has been identified within 700 feet of the Project area but does not occur within the small footprints where the geotechnical investigations would actually take place. The geotechnical investigations would occur between September 15 and January 31, outside the CCR breeding season.

CCR AMM 1 Biological Monitor: Biological Monitor Duties: A Service-approved biological monitor will be present during all geotechnical investigation activities that occur within 700 feet of suitable CCR habitat. The monitor will have demonstrated experience in monitoring sensitive resource issues on construction projects and knowledge of the biology of the CCR. If a CCR is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the CCR leaves the vicinity of the work area of its own volition and the Service is notified. Neither the biological monitor nor any other persons at the site will pursue, capture, handle, or harass any CCR observed.

CCR AMM 2 Service Personnel Access: If requested before, during, or upon completion of construction, Service personnel will be allowed access to work areas to inspect effects, if any, of the actions on the CCR.

California Least Tern AMMs

The Subapplicant will implement the following AMMs specific to the CLT. Suitable CLT habitat has been identified within 700 feet of the Project area but does not occur in the small footprints where the geotechnical investigations would actually take place. The geotechnical investigations would occur between September 15 and January 31, outside the CLT breeding season.

CLT AMM 1: Biological Monitor Duties: A Service-approved biological monitor will be present during all geotechnical investigation activities taking place adjacent to CLT suitable nesting habitat. The monitor will have demonstrated experience in monitoring sensitive resource issues on construction projects and knowledge of the biology of the CLT. If a CLT is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the CLT leaves the vicinity of the work area of its own volition and the Service is notified. Neither the biological monitor nor any other persons at the site will pursue, capture, handle, or harass any CLT observed.

CLT AMM 2 Flagging: When necessary to minimize the area affected by the project, work site boundaries will be marked with flagging or other visible materials by the Subapplicant or their contractors, which will be removed at the conclusion of the Project.

CLT AMM 3 Avoid Placement of Predator Perches: Workers will avoid temporary or permanent placement of structures (e.g., posts, railings, tall equipment, or fence lines) that could provide elevated perches for predatory birds near or within occupied habitat.

Western Snowy Plover AMMs

The Subapplicant will implement the following AMMs specific to the WSP. Suitable WSP habitat has been identified within 700 feet of the Project area but does not occur within the small footprints where the geotechnical investigations would actually take place. The geotechnical investigations would occur between September 15 and January 31, outside the WSP breeding season.

WSP AMM 1: Biological Monitor Duties: A Service-approved biological monitor will be present during all geotechnical investigation activities taking place adjacent to WSP suitable

nesting habitat. The monitor will have demonstrated experience in monitoring sensitive resource issues on construction projects and knowledge of the biology of the WSP. If a WSP is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the WSP leaves the vicinity of the work area of its own volition and the Service is notified. Neither the biological monitor nor any other persons at the site will pursue, capture, handle, or harass any WSP observed.

WSP AMM 2 Flagging: When geotechnical investigation may disturb suitable WSP habitats, the Subapplicant or their contractors will mark the work site boundaries with flagging or other visible materials and remove those markers at the conclusion of the project.

WSP AMM 3 Avoid Placement of Predator Perches: Workers will avoid temporary or permanent placement of structures (e.g., posts, railings, tall equipment, or fence lines) that could provide elevated perches for predatory birds.

Habitat for SMHM, CCR, CLT and WSP does exist directly adjacent to the Project area and occurrences of all four species have been recorded nearby. However, no suitable habitat is present within the footprints of the geotechnical investigations locations, which are on the tops of levees and roads. Therefore, none of these species is likely to be encountered at the site of geotechnical investigations.

Due to the location of the geotechnical investigations near major traffic arteries, noise generated from the minimal extent of equipment proposed is not likely to elevate noise levels much beyond ambient noise levels onsite. Additionally, work is proposed for completion in just one week, with work in any one location lasting a maximum of only one day. These facts, when combined with the proposed construction window completely outside the breeding season of CCR, CLT and WSP, make it likely that noise and visual disturbances to SMHM, CCR, CLT and WSP in areas adjacent to the Project area would be negligible.

The Service concurs with the FEMA's determination that the Project is not likely to adversely affect the SMHM, CCR, CLT, and WSP because: (1) habitat for these species is not present on the disturbed and compacted lands proposed for work; (2) effects to the species on adjacent lands from noise and visual disturbance is likely to be negligible; (3) work will be conducted outside the breeding seasons for CCR, CLT, and WSP; and (4) best management practices and the above AMMs will be implemented.

REINITIATION- CLOSING STATEMENT

This concludes informal consultation on the Strategy to Advance Flood Protection, Ecosystems and Recreation Project, Phase 1b (geotechnical investigations) Project. As provided in 50 CFR §402.16,

(a) Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

(1) If the amount or extent of taking specified in the incidental take statement is exceeded;

(2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

(3) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or

(4) If a new species is listed or critical habitat designated that may be affected by the identified action.

(b) An agency shall not be required to reinitiate consultation after the approval of a land management plan prepared pursuant to 43 U.S.C. 1712 or 16 U.S.C. 1604 upon listing of a new species or designation of new critical habitat if the land management plan has been adopted by the agency as of the date of listing or designation, provided that any authorized actions that may affect the newly listed species or designated critical habitat will be addressed through a separate action-specific consultation. This exception to reinitiation of consultation shall not apply to those land management plans prepared pursuant to 16 U.S.C. 1604 if:

(1) Fifteen years have passed since the date the agency adopted the land management plan prepared pursuant to 16 U.S.C. 1604; and

(2) Five years have passed since the enactment of Public Law 115-141 [March 23, 2018] or the date of the listing of a species or the designation of critical habitat, whichever is later.

If you have any questions regarding this response, please contact Valary Bloom, Senior Fish and Wildlife Biologist, via email at valary_bloom@fws.gov.

Sincerely,

Jana Affonso
Assistant Field Supervisor

Biological Assessment

Menlo Park SAFER Bay Project Phase 1

San Mateo County, City of Menlo Park, California
EMF-2020-BR-001-0002
February 2023

Federal Emergency Management Agency
Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, CA 94607

This document was prepared by

CDM Smith
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San Francisco, CA 94104

Table of Contents

FIGURES

Attachments

Acronyms

AA	Action Area
AMM	avoidance and minimization measures
BA	Biological Assessment
BMP	best management practice
BRIC	Building Resilient Infrastructure and Communities
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CLT	California least tern
CPT	cone penetration testing
CNDDB	California Natural Diversity Database
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
PBO	programmatic biological opinion
RR	Ridgway's rail
SAFER	Strategy to Advance Flood protection, Ecosystems and Recreation
SFWO	Sacramento Fish and Wildlife Office
SMHM	salt marsh harvest mouse
USFWS	United States Fish and Wildlife Service
WSP	western snowy plover

EXECUTIVE SUMMARY

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide federal financial assistance—through the California Governor's Office of Emergency Services (Applicant)—to the City of Menlo Park, California (Subapplicant), to conduct geotechnical explorations as Phase 1 of the Menlo Park Strategy to Advance Flood protection, Ecosystems and Recreation (SAFER) Bay Project, along the western edge of San Francisco Bay. The SAFER Bay Project (proposed action) would occur within the City of Menlo Park in San Mateo County, California. These activities would be funded by FEMA's Hazard Mitigation Grant Program (HMGP), which is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

The Subapplicant applied for FEMA funding assistance to construct approximately 3.7 miles of additional flood protection levees, floodwalls, and/or floodgates along the southwest San Francisco Bay shoreline near Menlo Park, in San Mateo County, California. The SAFER Bay Project would provide a 100-year level of flood protection in addition to 3.5 feet of sea level rise protection. Phase 1 of the SAFER Bay Project includes only the geotechnical survey work necessary to complete the design, and it is the only proposed action covered under this Biological Assessment (BA). The Subapplicant proposes to conduct subsurface exploration at seven sites along the proposed levee alignment.

FEMA has prepared this BA to evaluate the potential effects of the Phase 1 project (geotechnical borings only) on species that are listed or proposed for listing under the Endangered Species Act (ESA) of 1973. Potential effects on federally listed species have been evaluated in accordance with Section 7 of the ESA. This BA includes measures to avoid and/or minimize take or disturbance to potentially affected species.

Summary of Proposed Action

The Subapplicant proposes to construct the SAFER Bay Project, which would consist of approximately 3.7 miles of additional flood protection levees, floodwalls, and/or floodgates along the southwest San Francisco Bay shoreline near Menlo Park, in San Mateo County, California. The SAFER Bay Project would provide protection from 100-year flood events and 3.5 feet of sea level rise.

Phase 1 would include procurement of environmental and engineering services, public outreach, environmental permitting, and design to the 90 percent level. Phase 2 would include final design, procurement for construction management and contracting services, and construction activities. This BA focuses on Phase 1 of the SAFER Bay Project. Geotechnical explorations in Reaches 2, 3, and 4, which would include three exploratory borings and four cone penetration tests (CPTs), would be conducted as part of Phase 1 (Figures 1, 2, and 3). Reach 1 is not included in the proposed action, and ESA consultation for geotechnical investigations in Reach 5 was completed under a previous FEMA HMGP grant (HMGP 4344-541-93).

The objective of the proposed action would be to perform geotechnical field exploration and laboratory testing to supplement previously collected information. To the extent possible and

practical, borings and CPTs would be spaced approximately every 1,000 feet along the proposed levee alignment.

Borings and CPTs would be conducted using truck-mounted and track-mounted equipment. Equipment would access the project area through a dirt access pathway on top of the existing levee in Reach 2 and via paved roads and trails in Reaches 3 and 4. Borings and CPTs would be conducted in previously disturbed areas on top of the existing levee access roads and road shoulders and would not include vegetation removal or in-water work.

Federally Listed Species and Critical Habitat Potentially Affected

Based on a search of federal and state databases, 7 federally listed plant species and 16 federally listed wildlife species were identified as having potential to occur near the four Action Areas (AAs). Upon completion of a desktop analysis, including an assessment of existing habitat conditions, it was determined that no federally listed plant species have potential to occur within the AAs. The review identified four federally listed wildlife species having potential to occur in the AAs: the endangered salt marsh harvest mouse (SMHM, *Reithrodontomys raviventris*), the endangered Ridgway's rail (also known as the California clapper rail) (RR, *Rallus obsoletus obsoletus*), the endangered California least tern (CLT, *Sterna antillarum browni),* and the threatened western snowy plover (WSP, *Charadrius nivosus nivosus*). This BA provides details regarding the potential effects on the SMHM, RR, CLT, and WSP.

Summary of Effects to Federally Listed Species

The proposed action occurs adjacent to potentially suitable habitat for one listed mammal species (SMHM) and three listed bird species (RR, CLT, and WSP). Therefore, the SMHM, RR, CLT, and WSP are reasonably likely to occur within the AAs.

Effects on federally listed species identified as having the potential to occur in the AAs are summarized as follows:

- May affect, but is not likely to adversely affect the SMHM
- May affect, but is not likely to adversely affect the RR
- May affect, but is not likely to adversely affect the CLT
- May affect, but is not likely to adversely affect the WSP

Implementation of the best management practices (BMPs) and general and species-specific avoidance and minimization measures (AMMs), as described in Sections 2.4 and 2.5, would avoid or minimize potential adverse effects on these species due to implementation of the proposed action.

SECTION 1. INTRODUCTION

1.1 Purpose and Need

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide federal financial assistance—through the California Governor's Office of Emergency Services (Applicant)—to the City of Menlo Park, California (Subapplicant), to conduct geotechnical explorations as Phase 1 of the Strategy to Advance Flood protection, Ecosystems and Recreation (SAFER) Bay project, along the western edge of San Francisco Bay. The SAFER Bay Project would construct 6,800 feet of new flood protection levees and 5,300 feet of ecotone habitat near Menlo Park and East Palo Alto in San Mateo County, California, adjacent to San Francisco Bay. The project would mitigate frequent flooding in an area of Menlo Park and East Palo Alto where more than 1,500 structures and 5,000 residents are within the 100-year tidal floodplain special flood hazard area. Phase 1 of the SAFER Bay Project, evaluated in this BA, would conduct subsurface exploration at seven sites along the proposed levee alignment in Reaches 2, 3, and 4 to collect geotechnical data that would inform the engineering analyses and design. Geotechnical exploratory boring would occur at three sites, and cone penetration testing (CPT) would occur at four sites and are the only activities proposed for coverage under this assessment. Further consultation would be required for Phase 2, which includes the construction of the new flood protection levees and ecotone habitat. Reach 1 is not included in the proposed action, and ESA consultation for geotechnical investigations in Reach 5 was completed under a previous FEMA HMGP grant (HMGP 4344-541-93).

1.2 Federal Nexus

FEMA's financial assistance would be provided through the Building Resilient Infrastructure and Communities (BRIC) grant program. The BRIC grant program provides funding for eligible mitigation projects that seek to reduce or eliminate long-term risk to people and property from future disasters, resulting in safer communities that are less reliant on external financial assistance.

Under Section 7 of the Endangered Species Act (ESA), federal agencies are required to evaluate the potential for effects resulting from federal actions on federally listed species and their habitats. The purpose of this Biological Assessment (BA) is to review the proposed action (i.e., the federal action) in sufficient detail to determine if it may affect any federally listed threatened or endangered fish, plant, or wildlife species; species proposed for listing; or designated critical habitat.

All federal agencies are required to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) in accordance with Section 7(a)(2) of the ESA regarding potential effects resulting from federal actions on federally listed or proposed species. The federal agency that is initiating or funding the "action" in question must ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of a federally listed threatened or endangered species or a species proposed to be listed, or result in the destruction or adverse modification of designated or proposed critical habitat.

1.3 Project Location

The proposed action area is in the northeastern part of the City of Menlo Park, San Mateo County, California, adjacent to San Francisco Bay (Figure 1). The project area is accessed locally via the Bayfront Expressway (California State Route 84) (Figure 2).

Latitude and longitude coordinates:

- Reach 2 End Point: 37.489252, -122.168260
- Reach 4 End Point: 37.484292, -122.145380

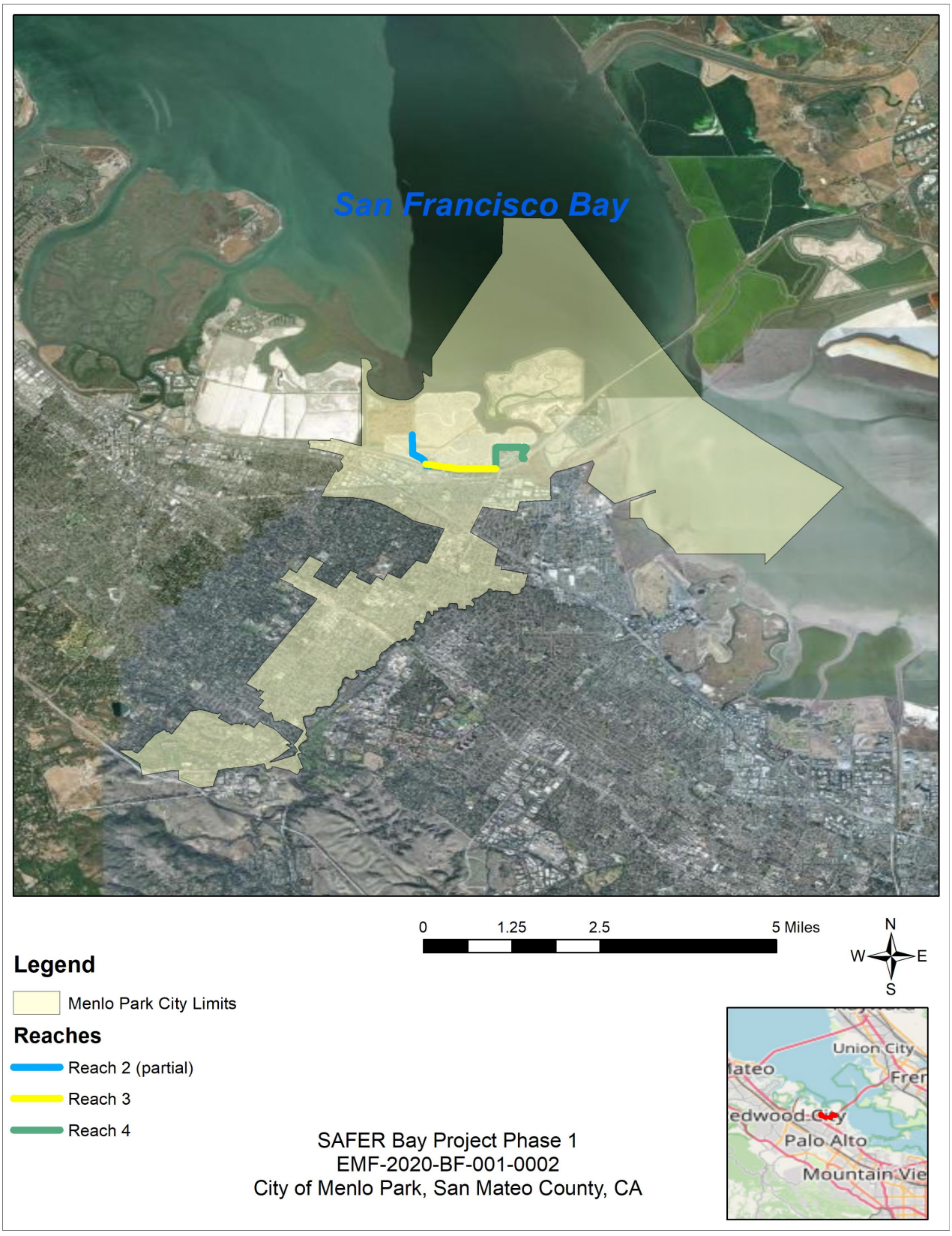

Figure 1. Project Vicinity

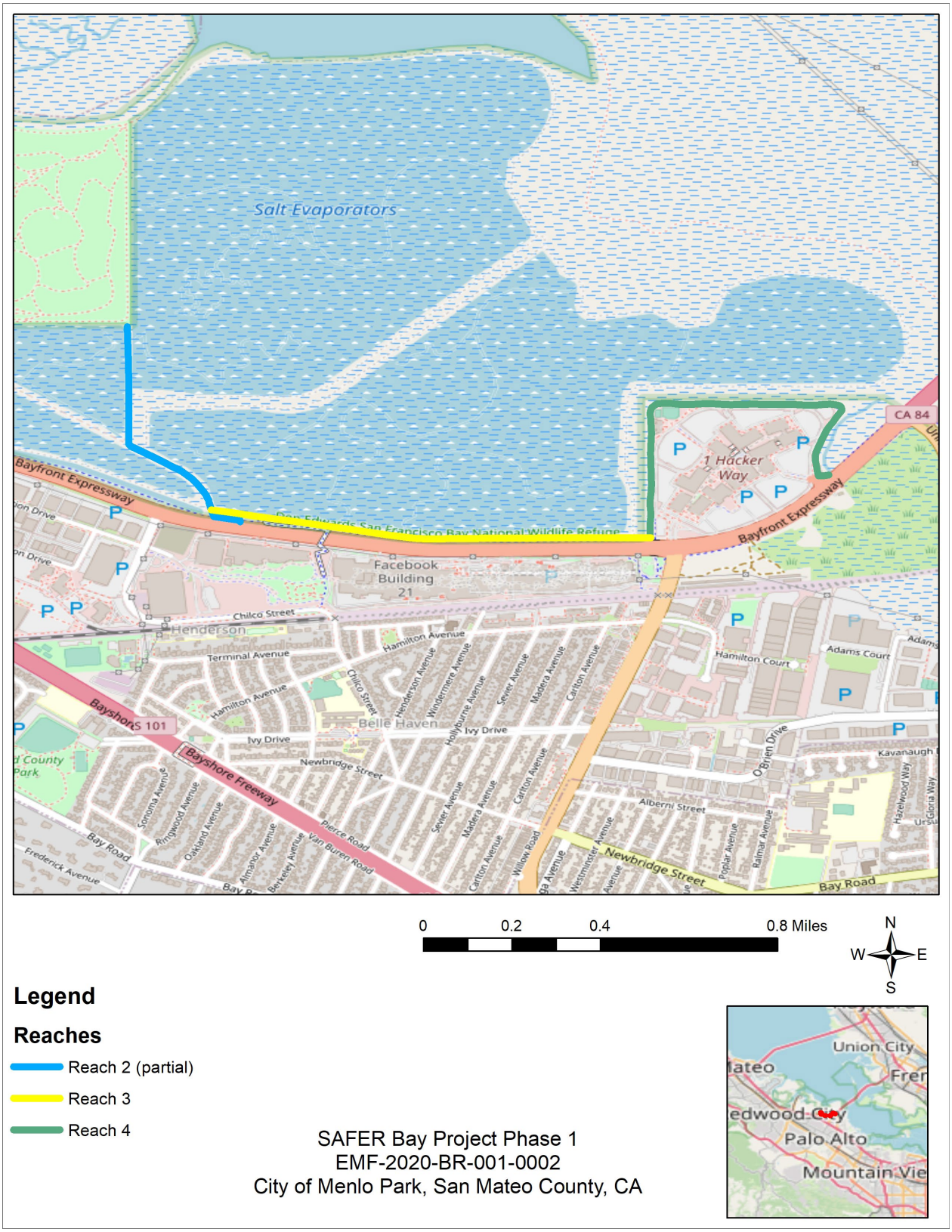

Figure 2. Project Vicinity (zoomed-in street view)

SECTION 2. PROPOSED ACTION

2.1 Project Description

The proposed action would entail conducting geotechnical explorations to support design of the SAFER Bay Project (i.e., Phase 1). Phase 2 would include construction of 6,800 feet of new coastal flood protection levees and 5,300 feet of transitional ecotone habitat near Menlo Park, California, to improve flood protection and enhance existing wetland ecosystems along San Francisco Bay. The new levee would be constructed with a minimum top elevation of 5 feet above the base flood elevation. The SAFER Bay Project comprises the following phases and tasks:

- Phase 1 – Environmental Permitting and 90% Design (includes geotechnical investigations)
- Phase 2 – Final Design and Construction

This BA is for Phase 1 of the SAFER Bay Project only. The proposed work would include geotechnical investigations at seven sites, including three exploratory borings and four CPTs at the following locations (Figure 3):

- Two sites (B-108 and C-109) are on an existing levee that separates salt evaporation Ponds R5 and S5 from salt evaporation Ponds R3 and R4.
- Two sites (B-109 and C-110) are along the Bay Trail between California State Route 84 and salt evaporation Pond R3.
- The remaining three sites are along the Bay Trail that surrounds the Facebook Meta Headquarters.

A gravel staging area at Bedwell Bayfront Park would be used for Phase 1, as described in Section 2.3.

Methods:

- Seven borings would be drilled or pushed using CPT, 50 to 70 feet deep. A rotary auger drill would conduct the borings. During CPT, a CPT rig pushes a steel cone, with a diameter between 1.4 and 1.7 inches, down vertically into the ground at a controlled rate to measure the resistance of soil, soil pressure, and other geotechnical properties.
- Equipment would include truck-mounted drill rigs and CPT rigs for drivable locations and track-mounted rigs for locations that are more difficult to access.
- All work would be conducted in accordance with seasonal work windows for ESA-listed species. To avoid impacts on listed nesting bird species, work would occur after September 14 and before February 1; no work would occur anywhere within the project area from February 1 through September 14 to avoid the RR and WSP nesting seasons.

- Drill cuttings and fluids would be contained in drums and transported to a nearby temporary storage area.
- Following chemical testing of samples of the drummed materials, the Subapplicant would arrange to have the materials transported to a suitable disposal facility, as appropriate, per all federal, state, and local laws and regulations.
- No vegetation would be removed to conduct the geotechnical survey work, and no vegetated areas would be disturbed.
- There would be no work below the ordinary high waterline, and the Phase 1 geotechnical survey work would not disturb wetlands.

2.2 Project Duration

Geotechnical boring/CPT work activities would occur over an approximately one-week period between September 15 and January 31. Mobilization of four different exploratory rigs would be required—a truck boring rig, a tracked boring rig, a truck CPT rig, and a tracked CPT rig. One workday is estimated for the single truck rig boring at B-109; two days would be required for the two track rig borings at B-108 and B-110; a half day would be required for the single truck rig CPT at C-110; and one and a half days would be required for the three-track rig CPTs at C-109, C-111, and C-112. Therefore, a total of approximately five workdays would be required to complete the seven explorations (three borings and four CPTs). If the borings and CPTs are performed consecutively without a break in time, completion would require a total of approximately one week. If any break in time is scheduled between the borings and CPT operations, then the total time for completion would be extended accordingly. A typical work week would be 7:00 a.m. to 5:00 p.m., Monday through Friday, excluding holidays.

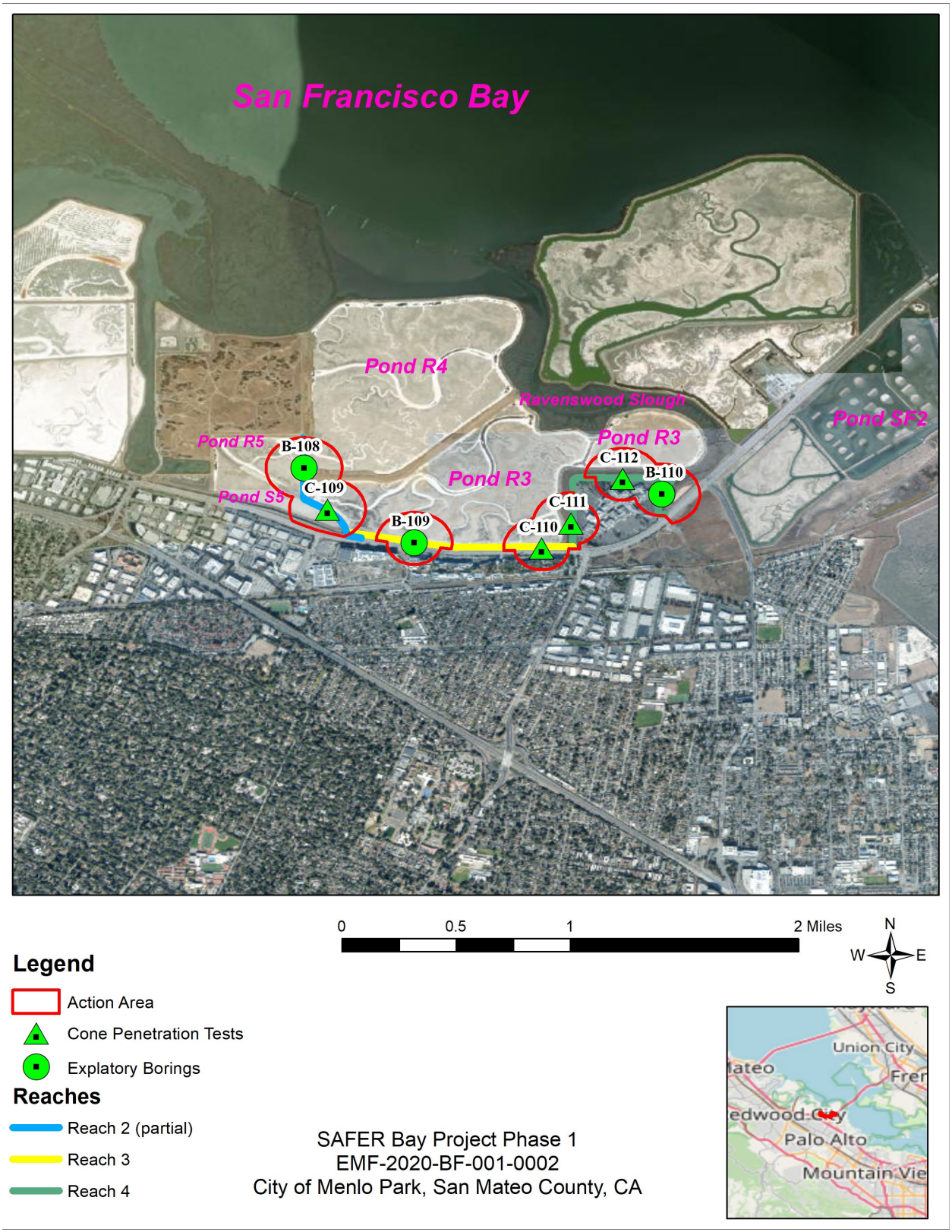

Figure 3. Proposed Geotechnical Exploration Overall Plan

2.3 Equipment

All proposed geotechnical exploration locations are on previously disturbed sites, which are primarily levee crowns that are accessed regularly by maintenance vehicles, and are free of vegetation. No vegetation clearing equipment would be required to access or to conduct drilling at these locations. Geotechnical exploration investigations are follow-on work to geotechnical investigations performed in the same area as part of a feasibility study that was conducted for the project. No new access routes would be created for drill rigs to reach the proposed boring or CPT locations. Drill rigs would access the boring locations via previously disturbed access roads, trails, road shoulders, and top of levees, to limit potential impacts on nearby vegetation and water quality. No vegetated areas would be disturbed, and no equipment would be used off-levee or off-trail.

Employee vehicles, truck-mounted drill rigs, and track-mounted drill rigs are the vehicles to be used on roads, established trails, top of levees, and road shoulders for the project. Drill crews would have equipment and supplies such as tubs, hoses, casings, drums, bags, and any other items associated with self-contained drilling operations. All boring/CPT-related equipment and materials would be stored at the Bedwell Bayfront Park (Figure 4). The staging area is a gravel surface with ample vehicular access. There would be no staging in the marsh or on the levees.

Borings would be advanced using self-contained mud rotary drilling methods. This would prevent drilling mud, fluids, fuel, and lubricants from entering nearby waters and habitats. Drill rigs, equipment, and refueling would be kept on previously disturbed areas to limit adverse impacts on water and habitats.

2.4 Best Management Practices

The following best management practices (BMPs) will be implemented during all project-related activities:

- Limit the hours of operation to daytime hours on weekdays.
- Restrict vehicle and equipment parking in staging areas to paved or graveled areas.
- Restrict all geotechnical investigations to the minimum footprint required within designated access routes and work areas.
- Borings will be advanced using mud rotary drilling methods.
- Drill rigs and drill crews will have equipment and supplies such as tubs, hoses, and casings, as appropriate, to provide a self-contained drilling system. This will limit drilling mud, fluids, fuel, and lubricants from entering nearby waters and habitats. It will also reduce the number of vehicles and trips required to complete the operations.
- Drill rigs and equipment will be kept on previously disturbed areas to limit adverse impacts on adjacent waters and habitats.

2.5 Avoidance and Minimization Measures

General (GEN) avoidance and minimization measures (AMMs) and AMMs specific to the listed species covered by this BA will be implemented during this project.

2.5.1 General Avoidance and Minimization Measures

GEN AMMs provided in the Sacramento Fish and Wildlife Office (SFWO) programmatic biological opinion (PBO) to FEMA will be implemented (USFWS 2019) as appropriate. The GEN AMMs are numbered according to the scheme used in the SFWO PBO and may not be sequential in this BA. Where noted, and to improve clarity, these AMMs have been modified to eliminate elements that are not applicable to the proposed action.

GEN AMM-3 Dust Control Measures (modified): To reduce dust, all traffic associated with the Subapplicant's geotechnical investigations will be restricted to a speed limit of 15 miles per hour when traveling off highways or on county roads.

GEN AMM-4 Spill Control Planning: The Subapplicant will prepare a Spill Prevention and Pollution Control Plan to address the storage of hazardous materials and emergency cleanup of any hazardous material, and it will be available on-site, if applicable. The plan will incorporate hazardous waste, stormwater, and other emergency planning requirements.

GEN AMM-5 Spill Prevention and Pollution Control Measures (modified): The Subapplicant will exercise every reasonable precaution to protect listed species and their habitats from pollution caused by fuels, oils, lubricants, construction byproducts, and pollutants such as construction chemicals, fresh cement, saw-water, or other harmful materials. Water containing mud, silt, concrete, or other byproducts or pollutants from geotechnical investigations will be treated by filtration, retention in a settling pond, or similar measures. Construction pollutants will be collected and transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

No petroleum products, chemicals, silt, fine soils, or any substance or material deleterious to listed species will be allowed to pass into or be placed where it can pass into a stream channel or waterway. There will be no side casting of material into any waterway.

The Subapplicant will store all hazardous materials in properly designated containers within a storage area having an impermeable membrane between the ground and the hazardous materials. The storage area will be encircled by a berm to prevent the discharge of pollutants to groundwater or runoff into the habitats of listed species. A plan for the emergency cleanup of any hazardous material, as well as adequate materials for spill cleanup, will be available and maintained on-site.

GEN AMM-6 Equipment Inspection and Maintenance: Well-maintained equipment will be used to perform the work and, except in the case of a failure or breakdown, equipment maintenance will be performed off-site. Equipment will be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and properly disposed. Fueling of equipment will be conducted in accordance with procedures to be developed in the Spill Prevention and Pollution Control Plan.

Vehicles and equipment that are used during the project will be fueled and serviced in a "safe" area (i.e., outside of sensitive habitats) in a manner that will not affect listed species or their habitats. Spills, leaks, and other problems of a similar nature will be resolved immediately to prevent unnecessary effects on listed species and their habitats. A plan for the emergency

cleanup of any hazardous material, as well as adequate materials for spill cleanup, will be available and maintained on-site.

GEN AMM-7 Fueling Activities: AMMs will be applied to protect listed species and their habitats from pollution caused by fuels, oils, lubricants, and other harmful materials. Vehicles and equipment that are used during project implementation will be fueled and serviced in a manner that will not affect listed species or their habitats. Machinery and equipment used during work will be serviced, fueled, and maintained on uplands to prevent contamination to surface waters. Fueling equipment and vehicles will be kept more than 200 feet away from Waters of the United States. Exceptions to this distance requirement may be allowed for large cranes, pile drivers, and drill rigs if they cannot be easily moved.

GEN AMM-8 Equipment Staging: No staging of construction materials, equipment, tools, buildings, trailers, or restroom facilities will occur in a floodplain during flood season at the proposed action location, even if staging is only temporary.

GEN AMM-9 Materials Storage and Disposal (modified): All hazardous materials will be stored in upland areas, inside storage trailers, and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use will be permitted, provided the same containment precautions are taken as described for hazardous materials storage. Once project construction is complete, all construction materials, wastes, debris, sediment, rubbish, trash, and fencing will be removed from the work sites and transported to an authorized disposal area, as appropriate, in compliance with applicable federal, state, and local laws and regulations. No storage of construction materials or debris will occur within a floodplain during the flood season.

GEN AMM-11 Waste Management: Work area will be kept free of loose trash, including small pieces of residual construction material, such as metal cuttings, broken glass, and hardware.

All food waste will be removed from the site daily.

Once the project is completed, all construction material, wastes, debris, sediment, rubbish, vegetation, trash, and fencing will be removed from the site and transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

GEN AMM-13 Work Area Designation to Minimize Disturbance (modified): The Subapplicant will reduce, to the maximum extent practicable, the amount of disturbance at a site to the absolute minimum necessary to accomplish the project.

Project planning must consider not only the effects of the action itself but also all ancillary activities associated with the actions, such as equipment staging and refueling areas, material storage areas, disposal sites, routes of ingress and egress to the project site, and all other related activities necessary to complete the project.

GEN AMM-14 Access Routes and Staging Areas (modified): When working on stream banks or within floodplains, disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance to sensitive habitats (e.g., stream banks, stream

channel, riparian habitat, and saltwater marsh) as much as possible. When possible, existing ingress or egress points will be used and/or work will be performed from the top of the stream banks (levees).

All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside the flood zone of a watercourse, above areas of tidal inundation, away from riparian habitat or wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.

GEN AMM-15 Environmental Awareness Training for Construction Personnel: All construction personnel will be given environmental awareness training by the project's environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the listed species that may occur on-site, their habitats, general provisions and protections afforded by the ESA, measures to be implemented to protect these species, and the project boundaries. This training will be provided within 3 days of the arrival of any new worker.

As part of the environmental awareness training, construction personnel will be notified that dogs or any other pets under control of construction personnel will not be allowed in the construction area. Also, no firearms will be permitted in the construction area unless carried by authorized security personnel or law enforcement.

GEN AMM-17 Daily Work Hours: Geotechnical investigations that may affect suitable habitat for listed species will be limited to daylight hours during weekdays, leaving a nighttime and weekend period for the species. Work will be allowed on weekends if the proposed construction is 14 days or fewer in length.

GEN AMM-19 Water Quality Protection (modified): Contractors will exercise every reasonable precaution to protect listed species and their critical habitats from construction byproducts and pollutants (e.g., construction chemicals, fresh cement, saw-water, or other deleterious materials). Fresh cement or uncured concrete will not be allowed to come into contact with any waterway. Construction waste will be collected and transported to an authorized upland disposal area, as appropriate, and according to federal, state, and local laws and regulations.

2.5.2 Salt Marsh Harvest Mouse Minimization Measures

The following AMMs specific to the salt marsh harvest mouse (SMHM) (*Reithrodontomys raviventris*) will be implemented as provided by USFWS (USFWS 2021). Suitable SMHM habitat has been identified within the Action Areas (AAs).

SMHM AMM 1 Biological Monitor (modified): A USFWS-approved biological monitor will be present during all geotechnical investigation activities when located on levees within or adjacent to salt marsh and pickleweed-dominated habitats that have potential to support the SMHM. The monitor will have demonstrated experience in monitoring sensitive resource issues on construction projects and knowledge of the biology of the SMHM. Before the start of construction, qualifications of the prospective biological monitor will be submitted to USFWS

for review and approval. The monitor(s) will have the authority to halt construction, if necessary, when noncompliance actions occur. The biological monitor(s) will be the contact person for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured, or entrapped listed species.

SMHM AMM 4 Salt Marsh Harvest Mouse Observation: If a SMHM is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the mouse leaves the vicinity of the work area of its own volition and USFWS is notified. If the mouse does not leave the work area, work will not be reinitiated until USFWS is contacted and has made a decision on how to proceed with work activities. The biological monitor will direct the contractor on how to proceed accordingly. The biological monitor or any other persons at the site will not pursue, capture, handle, or harass any SMHM observed.

SMHM AMM 5 USFWS Personnel Access: If requested before, during, or upon completion of construction, USFWS personnel will be allowed access into work areas to inspect effects, if any, of the actions pertaining to the SMHM.

2.5.3 Ridgway's Rail Minimization Measures

The following AMMs specific to the Ridgway's rail (RR) (*Rallus obsoletus obsoletus*), adapted from those provided by USFWS (USFWS 2021), will be implemented. Suitable RR habitat has been identified within 700 feet of the project area but does not occur within the small footprints where the geotechnical investigations would take place. The geotechnical investigations would occur between September 15 and January 31, outside the RR breeding season.

RR AMM 1 Biological Monitor: A USFWS-approved biological monitor will be present during all geotechnical investigations that occur within 700 feet of suitable RR habitat. Before the geotechnical investigations begin, qualifications of the prospective biological monitor will be submitted to USFWS for review and approval. The monitor(s) will have the authority to halt work, if necessary, when noncompliance actions occur. The biological monitor(s) will be the contact person for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured, or entrapped listed species.

RR AMM 2 Construction Buffer (modified): Construction work within 700 feet of potential RR nesting habitat will be conducted on or after September 15 and completed on or before January 31 to avoid the RR nesting season; no work will occur anywhere on this project from February 1 through September 14.

RR AMM 3 Grading and Excavation (modified): Geotechnical investigations within 700 feet of potential RR nesting habitats will not take place until after September 15 and will be completed on or before January 31 to avoid the RR nesting season; no work will occur anywhere on this project from February 1 through September 14.

RR AMM 4 Ridgway's Rail Observation (modified): If an RR is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the RR leaves the vicinity of the work area of its own volition and USFWS is notified. If the RR does not leave the work area, work will not be reinitiated until USFWS is contacted and has made a decision on how to proceed with work activities. The biological monitor will direct the

contractor on how to proceed accordingly. The biological monitor or any other persons at the site will not pursue, capture, handle, or harass any RR observed.

RR AMM 5 USFWS Personnel Access: If requested before, during, or upon completion of construction, USFWS personnel will be allowed access to work areas to inspect effects, if any, of the actions on the RR.

2.5.4 California Least Tern Minimization Measures

The following AMMs specific to the California least tern (CLT) (*Sterna antillarum browni*) from the SFWO PBO to FEMA will be implemented (USFWS 2019). Suitable CLT habitat has been identified within 700 feet of the project area but does not occur in the small footprints where the geotechnical investigations would take place. The geotechnical investigations would occur between September 15 and January 31, outside the CLT breeding season.

CLT AMM 1 Seasonal Avoidance (modified): To avoid the nesting season of the CLT, project activity within 700 feet of suitable habitat will be allowed from September 15 to January 31.

CLT AMM 5 Flagging: When necessary to minimize the area affected by the project, work site boundaries will be marked with flagging or other visible materials by the Subapplicant or their contractors, which will be removed at the conclusion of the project.

CLT AMM 6 Avoid Placement of Predator Perches: Workers will avoid temporary or permanent placement of structures (e.g., posts, railings, tall equipment, or fence lines) that could provide elevated perches for predatory birds near or within occupied habitat.

2.5.5 Western Snowy Plover Minimization Measures

The following AMMs specific to the western snowy plover (WSP) (*Charadrius nivosus nivosus*) adapted from the SFWO PBO (USFWS 2019) and the Arcata/Yreka Fish and Wildlife Office Programmatic Letter of Concurrence to FEMA (USFWS 2018) will be implemented. Suitable WSP habitat has been identified within 700 feet of the project area but does not occur within the small footprints where the geotechnical investigations would take place. The geotechnical investigations would occur between September 15 and January 31, outside the WSP breeding season.

WSP AMM 1 Seasonal Avoidance (modified): Project geotechnical investigations near suitable nesting habitat will start on or after September 15 and be completed on or before January 31 to avoid the WSP breeding season. No work will occur anywhere on this project from February 1 through September 14.

WSP AMM 4 Biological Monitor (modified): A USFWS-approved biological monitor will be present during all geotechnical investigation work taking place in or adjacent to WSP suitable nesting habitat. If project geotechnical investigations occur adjacent to, but not within, suitable nesting habitat, project activities will be conducted during the species nonbreeding season. When geotechnical investigation work occurs within suitable nesting habitat, a USFWS-approved biologist will conduct weekly WSP surveys. If WSP are observed, the USFWS-approved biologist will notify USFWS within 1 day of the observation and will monitor all geotechnical investigations conducted adjacent to suitable WSP nesting habitat. The qualified biologist will have the right and responsibility to stop work if adverse effects on nesting WSP are observed.

WSP AMM 5 Flagging (modified): When geotechnical investigation may disturb suitable WSP habitats, the Subapplicant or their contractors will mark the work site boundaries with flagging or other visible materials and remove those markers at the conclusion of the project.

WSP AMM 6 Avoid Placement of Predator Perches: Workers will avoid temporary or permanent placement of structures (e.g., posts, railings, tall equipment, or fence lines) that could provide elevated perches for predatory birds.

WSP AMM 12 Western Snowy Plover Observation (new): If a WSP is observed at any time during construction, work will not be initiated or will be stopped immediately by the biological monitor until the WSP leaves the vicinity of the work area on its own volition and the USFWS is notified. If the WSP does not leave the work area, work will not be reinitiated until the USFWS is contacted and has determined how to proceed with work activities. The biological monitor will direct the contractor on how to proceed accordingly. The biological monitor or any other persons at the site will not pursue, capture, handle, or harass any WSP observed.

2.6 Action Area

Project AAs are identified for the analysis of potential effects of the proposed action on listed species. AAs include areas where project activities could result in effects on federally listed species. The ESA defines effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.02). Thus, consequences may include direct harm to species within work areas, staging areas, and access routes as well as disturbance from project-related noise and human presence. AAs are "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). Therefore, observable or measurable effects of the project are not expected beyond the boundaries of the AA.

The farthest-reaching effect of the proposed action would be noise generated during boring/CPT activities. Construction for this project includes geotechnical investigations in seven locations in previously disturbed areas. No vegetation is expected to be disturbed during the geotechnical boring work. However, the drill rigs would generate noise.

Four separate AAs were defined to extend to the point where noise would be expected to attenuate to background levels (Figures 5a-5d). This is estimated to be approximately 500 feet along the south side of the AAs, where human disturbance is prevalent and suitable nesting habitat for the WSP does not exist. Where suitable habitat for the WSP is present, the AAs are extended to 700 feet to account for potential effects from noise on nesting habitat. The B-108/C-109 AA is approximately 62.45 acres, the B-109 AA is approximately 27.08 acres, the C-110/C-111 AA is approximately 43.22 acres, the B-110/C-112 AA is approximately 50.51 acres, and the total acreage for all four AAs is approximately 183.26 acres (Figures 5, 5a, 5b, 5c, and 5d). The AA does not include the staging area because it is on an existing gravel parking lot and would only be used to store equipment (Figure 4).

Geotechnical investigations would be accessed via previously disturbed sites (access roads, road shoulders, levees), and no new access routes would be created.

Figure 4. Staging Area

Figure 5. Action Areas

Figure 5a. B-108/C-109 Action Area

Figure 5b. B-109 Action Area

Figure 5c. C-110/C-111 Action Area

Figure 5d. B-110/C-112 Action Area

SECTION 3. ENVIRONMENTAL SETTING

3.1 Environmental Setting

The AAs are located adjacent to San Francisco Bay and occur within or directly adjacent to the Don Edwards San Francisco Bay National Wildlife Refuge. The B-108/C-109 geotechnical investigations occur along the dike that separates salt evaporation Ponds R5 and S5 from Ponds R3 and R4. The B-108/C-109 AA encompasses portions of salt evaporation Ponds R5, S5, R4, and R3. The B-109 AA encompasses a portion of salt evaporation Pond R3 to the north and the Bayfront Expressway and commercial building and associated structures to the south. The C-110/C-111 AA encompasses a portion of salt evaporation Pond R3 to the north and west, the Bayfront Expressway and commercial buildings to the south, and commercial buildings to the east. The C-112/B-110 AA encompasses a portion of salt evaporation Pond R3 to the north and commercial buildings to the south.

3.2 Land Use Type / Vegetation Communities

The actual project footprint for Phase 1 of the SAFER Bay Project would consist of the very small areas of ground disturbance that would result from geotechnical investigations at each of the seven proposed testing locations (Figure 3). Land use within the project footprint primarily consists of developed and disturbed land. Surrounding geographic features that overlap the AAs include residential and commercial development to the south of the Bayfront Expressway and marsh preserve lands to the north on the fringe of San Francisco Bay. Access to the test locations would be along existing roads, trails, paths, and on top of levees. The land use in the proposed staging area is previously disturbed and developed land, as staging would take place in an existing gravel parking lot (Figure 4). The project footprint is completely within previously disturbed land, dominated by compacted soils along roadways, paths, trails, and the existing levees. Attachment C contains photographs of each of the proposed boring locations and adjacent areas.

The AAs consist of a 700-foot buffer around the proposed boring/CPT locations on the northern portion of the project where suitable WSP habitat may be present and a 500-foot buffer in disturbed areas to the south having constant disturbance. There are numerous existing levees and access roads.

Vegetation communities in the AAs consist of disturbed vegetation along roads, trails, and levees as well as tidally influenced water, wetlands, and mid and high marshes that include native vegetation such as pickleweed (*Salicornia virginica*), cordgrass (*Spartina* sp.), and alkali bulrush (*Bolboschoenus maritimus*). Other habitats present include bare ground, mudflats, salt flats, and sandy areas, depending on the time of year and the management activities conducted by USFWS (e.g., water level management and habitat management) (Figures 5, 5a, 5b, 5c, 5d, and Attachment C).

3.3 Federally Listed Species with Potential to Occur in the Action Area

A desktop review was conducted to collect information on federally listed species under NMFS and USFWS jurisdiction with potential to occur within or near the project footprint. The scope of the desktop review included the area occurring within a 10-mile radius of the AAs. The review identified 22 federally listed plant and animal species as having the potential to occur in the AAs (Attachment B). Marine species were ruled out and require no further analysis because all work is to take place outside the zone of tidal influence.

The following sources were consulted for information regarding occurrences of federally listed species and their designated critical habitats near the AAs:

- California Natural Diversity Database (CNDDB) ([California Department of Fish and Wildlife] CDFW 2022)
- USFWS Information for Planning and Consultation (IPaC) System (USFWS 2022A)
- Environmental Protection Agency (EPA)
- National Environmental Policy Act (NEPA) Assist (EPA 2022)
- Essential Fish Habitat (EFH) Mapper (NMFS 2022a)
- NMFS Protected Resources App (NMFS 2022b)

Recovery plans and other published literature were reviewed for further details concerning species occurrence and status in the region, habitat preferences, documented historical and current ranges, and life histories.

Figures 6 and 7 show all the CDFW CNDDB occurrences of federally listed species within a 10-mile radius of the AAs, and Figure 8 shows all designated critical habitat within a 10-mile radius of the AAs (CDFW 2022, USFWS 2022A). Figure 9 shows the CDFW CNDDB occurrences within a 1-mile radius of the AAs for the species covered in this BA. Attachment A provides the USFWS IPaC report for the project vicinity and the CNDDB species list for federally listed species documented within 10 miles of the AA.

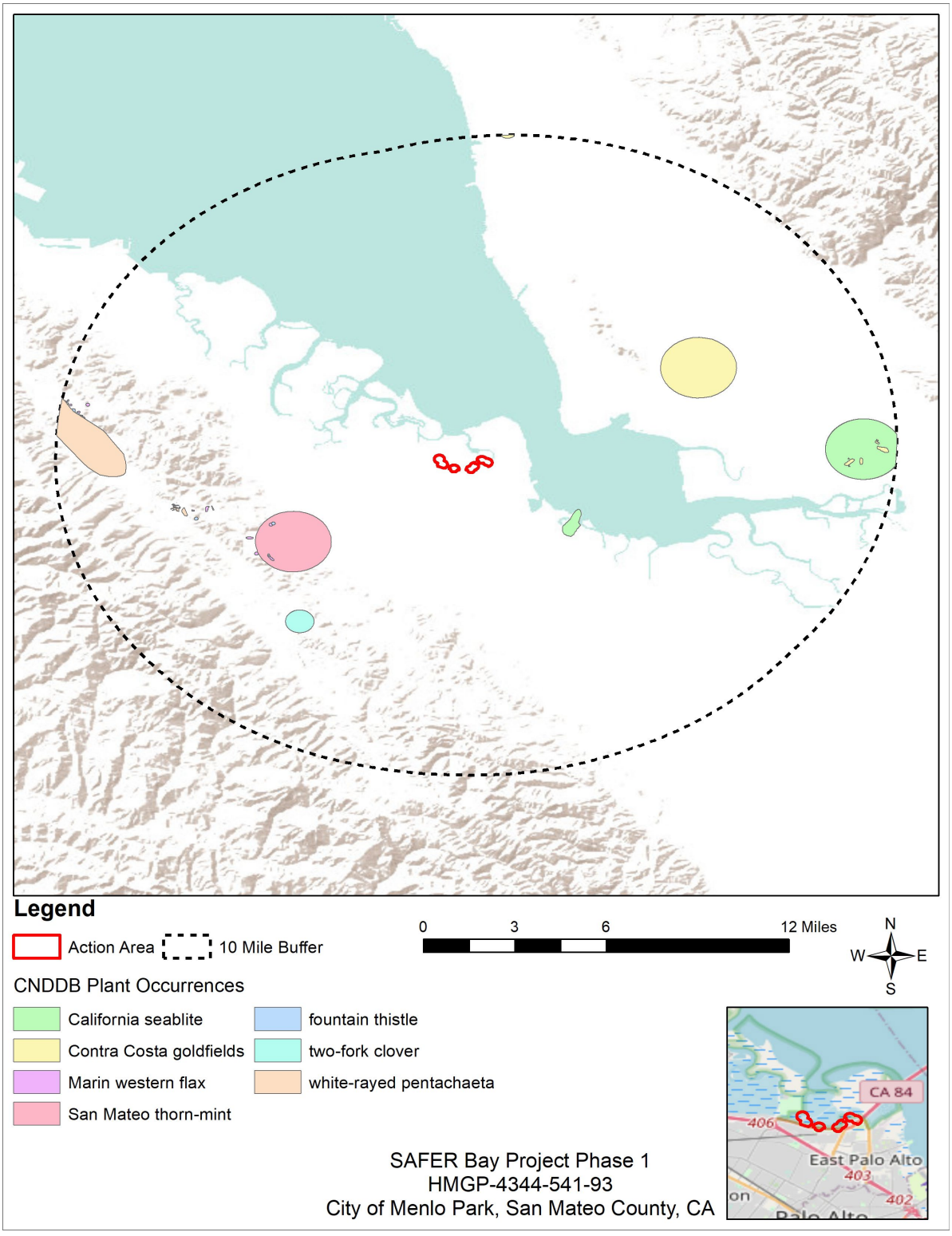

Figure 5. California Natural Diversity Database Records of Federally Listed Plants Within 10 Miles of the Action Areas

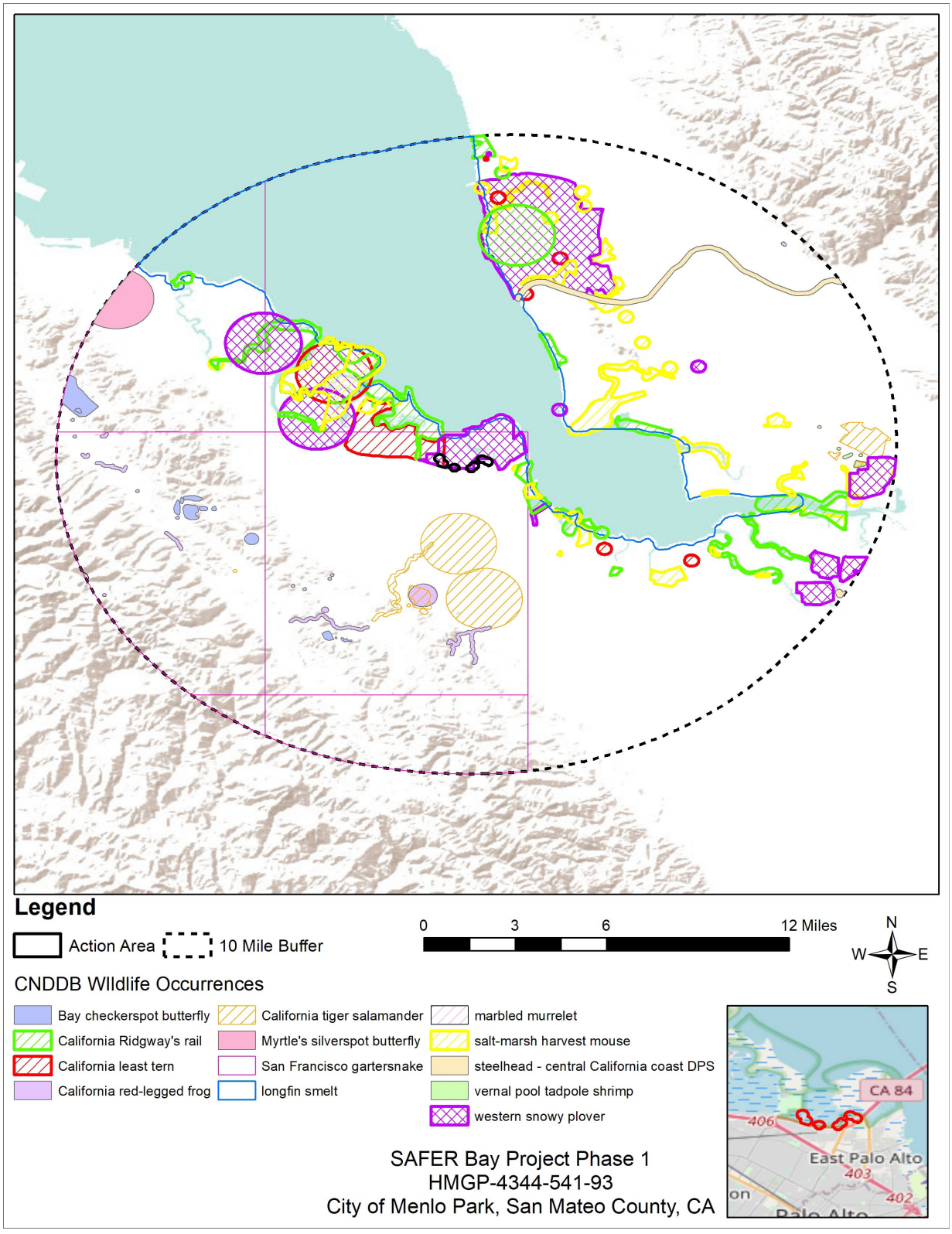

Figure 6. California Natural Diversity Database Records of Federally Listed Animals Within 10 Miles of the Action Areas

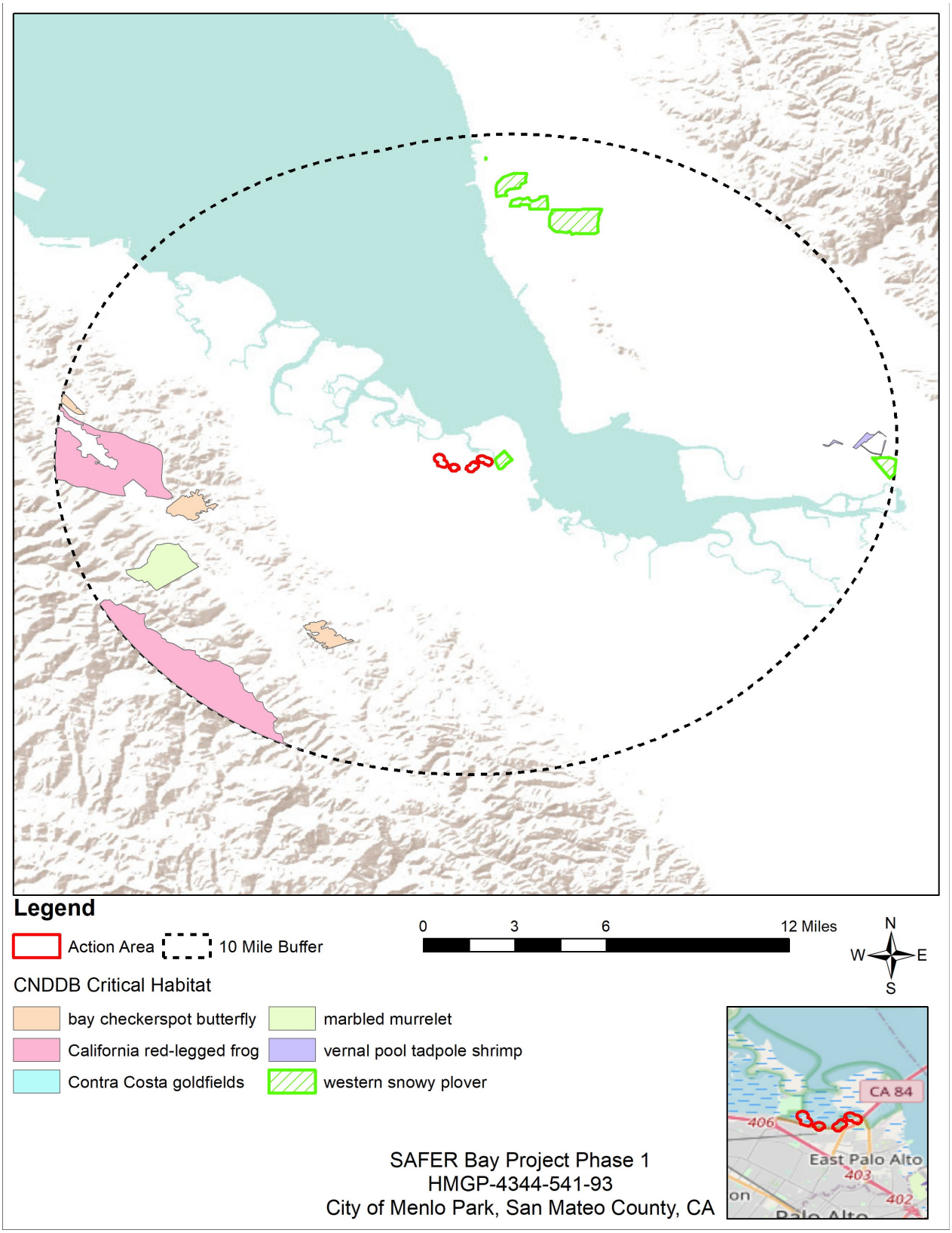

Figure 7. Designated Critical Habitats within 10 Miles of the Action Areas

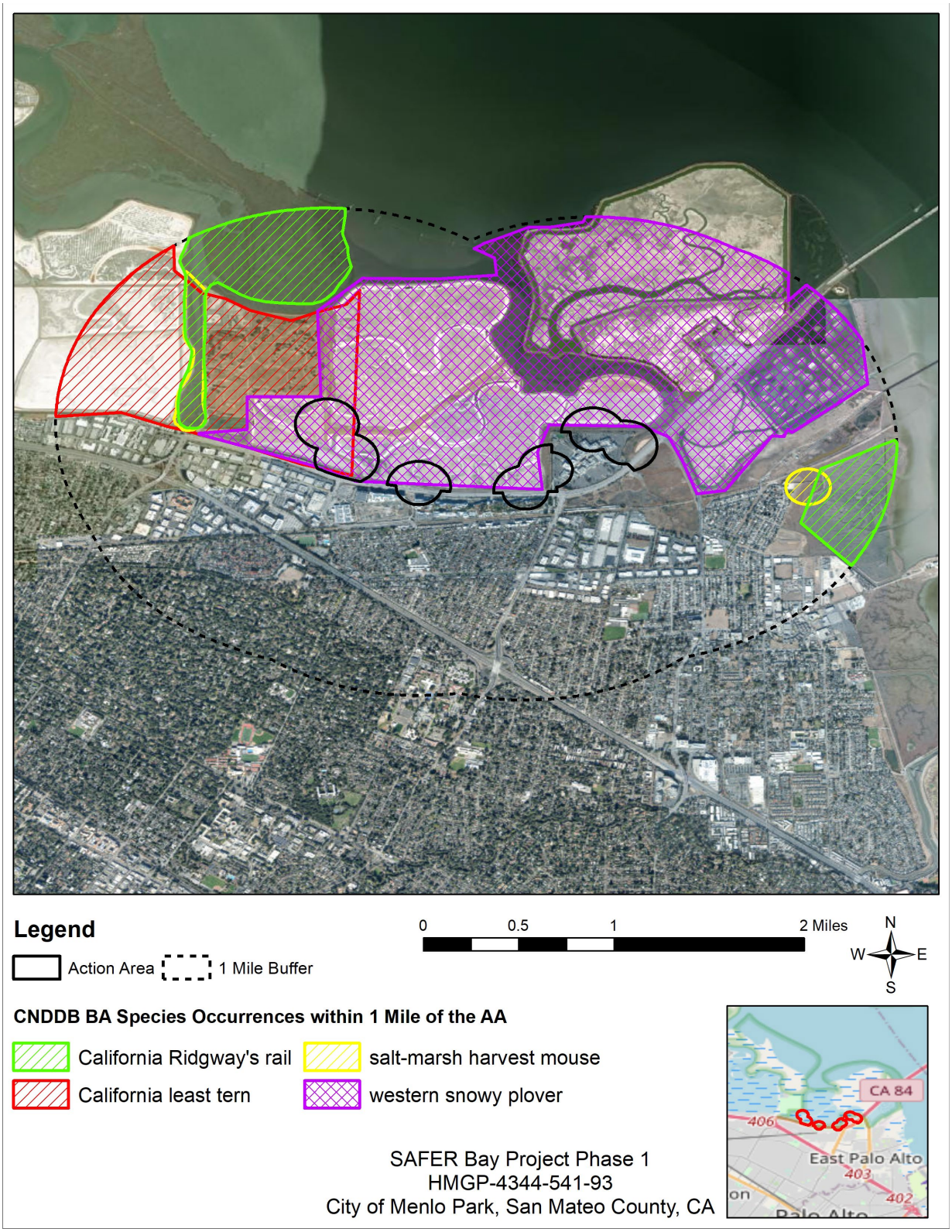

Figure 8. California Natural Diversity Database Records for Federally Listed Species Covered in this Biological Assessment within 1 Mile of the Action Areas

3.3.1 Plant Species

Based on the desktop analysis, seven federally listed plant species were identified as having potential to occur in the AAs. However, by combining the desktop analysis with an assessment of existing habitat conditions informed by aerial imagery and site photos, it was determined that no federally listed plant species are expected to occur within the AAs.

The plant species identified above were dismissed from further consideration for project-related impacts because of the following factors: (1) hydrologic conditions necessary to support the species are not present in the AAs (e.g., vernal pools); (2) plant species only exist at elevations higher than the elevations of the proposed action; and/or (3) plant species have been extirpated from the project area due to disturbance. Attachment B provide discussion of the basis for excluding these species.

Because the proposed action would have no effect on these species, they are not considered further in this BA.

3.3.2 Wildlife Species

Sixteen federally listed wildlife species with potential to occur in the region were identified during the desktop analysis (Appendix B). Of these 16 species, only the SMHM, RR, CLT, and WSP were identified as having potential to occur within the AAs and to be affected by project activities.

All other species were dismissed from further consideration in this BA based on one or more of the following criteria: (1) the AAs are not within the known range for the species; (2) suitable habitat for the species does not exist in the AAs; (3) the species has been extirpated from the project area; (4) the species is restricted to a specific area outside the AAs; and/or (5) no project activity would occur in aquatic habitats. Attachment B provides discussion of the basis for excluding these species.

The following sections provide life history information, a description of designated critical habitat, and a discussion of the potential for the species to occur in the AAs.

3.3.2.1 Salt Marsh Harvest Mouse

The SMHM was listed as endangered by USFWS on October 13, 1970 (USFWS 1970a). The SMHM is a small rodent in the *Cricetidae* family, which includes field mice, lemmings, muskrats, hamsters, and gerbils. The southern subspecies (*Reithrodontomys raviventris raviventris*) lives in the marshes of Corte Madera, Richmond, and South San Francisco Bay. The scientific name *Reithrodontomys raviventris* means “grooved-toothed mouse with a red belly.” The southern subspecies has grooved upper front teeth and a cinnamon/rufous-colored belly (USFWS 2022D).

SMHM are highly dependent on dense cover, and their preferred habitat is pickleweed. Harvest mice are seldom found in cordgrass or alkali bulrush. In marshes with an upper zone of salt-tolerant plants, they use this vegetation to escape the higher tides and may even spend a considerable part of their lives there. The SMHM also moves into adjoining grasslands during the highest winter tides (USFWS 2022D).

In winter, this harvest mouse prefers to forage on fresh green grasses; for the rest of the year, they favor pickleweed and saltgrass. The southern subspecies cannot subsist on seawater but prefer moderately salty water over freshwater. Although SMHM are active mainly at night, they can be active during daylight hours. They swim very well, in contrast to the western harvest mouse, which is a poor swimmer. Breeding occurs from spring through autumn (generally March through November). Each female usually has only one or two litters per year. The average litter size is about four. Nests are minimal, with the southern subspecies not making a nest at all (USFWS 2022D).

Potential to Occur in the Action Area

The SMHM is restricted to the salt and brackish marshes of San Francisco, San Pablo, and Suisan Bay areas. According to the CNDDB, the SMHM was observed approximately 0.4 mile west of the B-108/C-109 AA in 1988 where 15 were trapped. Additionally, a single SMHM was trapped in 1990 approximately 0.6 mile from the C-112/B-110 AA (CDFW 2022). Suitable marsh habitat occurs within the AAs. Therefore, there is potential for SMHM to be encountered during the installation of the seven boring/CPTs. However, the boring locations are on previously disturbed and compacted soil, and vegetation removal is not expected. Therefore, it is unlikely the SMHM would be encountered during project implementation.

Critical Habitat for the Salt Marsh Harvest Mouse

There is no designated critical habitat for this species.

3.3.2.2 Ridgway's Rail

The RR was listed as endangered by USFWS on October 13, 1970 (USFWS 1970a). The RR is one of the largest rails and has a downward-curving bill with an olive-brown and cinnamon-buff plumage coloring. Rails are secretive and hard to see in dense vegetation. They may run rapidly through vegetation or along slough bottoms. Rails prefer to walk or run rather than fly or swim. When flushed, they normally fly only a short distance before landing. Rails are most active in early morning and late evening. They forage in marsh vegetation in and along creeks and mudflat edges. They often roost at high tide during the day (USFWS 2022c).

RRs feed on mussels, crabs, and clams. Their breeding season starts in February, with nesting beginning in mid-March and extending into August. Preferred habitat is salty and brackish water marshes with pickleweed and cordgrass (USFWS 2022c).

Potential to Occur in the Action Area

The RR inhabits coastal salt marshes that contain pickleweed and cordgrass. According to the CNDDB, RR has been documented approximately 0.4 mile west of the B-108/C-109 AA in 2006 and approximately 0.7 mile southeast of the C-112/B-110 AA in 2017 (CDFW 2022). Additionally, eBird has numerous records of RRs in or near the AAs, with the most recent sightings in the Ravenswood Open Space Preserve and Cooley Landing Park in 2020 and near Ravenswood Trail in 2021 (Cornell 2022c and 2022d). Suitable marsh habitat occurs within the AAs; however, it is absent from the geotechnical exploration locations, which would be on previously disturbed and compacted land. In addition, vegetation removal is not anticipated. Therefore, it is unlikely that the RR would be encountered during the short project implementation period.

Critical Habitat for the Ridgway's Rail

There is no designated critical habitat for this species.

3.3.2.3 California Least Tern

The CLT was listed as endangered by USFWS on June 2, 1970 (USFWS 1970b). The CLT is the smallest tern in North America. This tern has a black cap with a white forehead and a short, forked tail and orange bill and legs. Least terns primarily eat small fish as well as shrimp and other invertebrates (USFWS 2022e).

CLTs live along the coast and nest on open unvegetated beaches. Terns start arriving along the California coast in April or May and migrate south by September (USFWS 1985). CLTs are found in late spring and summer along the Pacific coast of California and nest in colonies. Their nests are simple scrapes in the sand, sometimes with fragments of shells (USFWS 2022e).

Potential to Occur in the Action Area

CLT habitat includes open beaches and nearshore waters during the late spring and summer. Breeding occurs in colonies on unvegetated beaches. According to the CNDDB, the CLT was observed in the B-108/C-109 AA in 1976; however, this observation is now considered extirpated. The nearest presumed extant observation was approximately 3.8 miles southeast (1987) of the AAs (CDFW 2022). eBird has a 2015 record of a sighting from the Don Edwards National Wildlife Refuge – Ravenswood Salt Pond SF2, just south of the AAs (Cornell 2022a).

Suitable nesting habitat is not present in the AAs ; however, there are many areas within the AAs with suitable late spring and summer foraging habitat. The geotechnical investigations would occur outside of the CLT breeding season. During this time most CLT have migrated south and are rarely present in the Bay area. Therefore, it is unlikely that the CLT would be encountered during the short project implementation period.

Critical Habitat for the California Least Tern

There is no designated critical habitat for this species.

3.3.2.4 Western Snowy Plover

The Pacific coast population of the WSP was listed as endangered by USFWS on March 5, 1993 (USFWS 1993). Critical habitat was designated for this species on June 19, 2012 (USFWS 2012). The WSP is a small shorebird with moderately long legs and a short neck. Their backs are pale tan while their underparts are white, and they have dark patches on the sides of their necks that reach around onto the top of their chests (USFWS 2022b).

The Pacific coast population of WSP breeds on coastal beaches and dry salt pans from southern Washington to southern Baja California, Mexico. Plovers lay their eggs in shallow depressions in sandy and salty areas with little vegetation or driftwood. Nests are typically lined with pebbles, shell fragments, fish bones, vegetation fragments, and invertebrate skeletons. Because the sites they choose are in loose sand or soil, nesting habitat is constantly changing because of the influence of wind, tides, storms, and encroaching plants. WSPs usually lay three eggs. WSP nesting season extends from early March through late September. Nests typically occur in flat,

open areas that allow snowy plovers to see in all directions as a defense against predators (USFWS 2022b).

The plover primarily eats terrestrial and aquatic invertebrates. Foraging techniques include walking, hopping, and probing. Snowy plovers are primarily visual foragers. They forage for invertebrates in wet sand and kelp within the intertidal zone, in dry sandy areas above the high tide line, on salt pans, and along the edges of salt marshes and lagoons (USFWS 2022b).

Within hours after hatching, snowy plover chicks leave the nest to search for food. They are not able to fly until about 4 weeks after hatching. Adults use distraction displays to lure predators, dogs, and people away from chicks. Most chick mortality occurs within 6 days after hatching. If successful, plovers often return to the same breeding sites year after year (USFWS 2022b).

Potential to Occur in the Action Area

Habitat for the WSP includes coastal beaches and the intertidal zone of ocean and bay waters. Breeding occurs on beaches with little vegetation. According to the CNDDB, the WSP has been observed in the AAs, and 83 WSP nests were observed within or near the AAs in the salt evaporation ponds as recently as 2017. Additionally, eBird has numerous records of sightings of the WSP in or near the AAs in recent years in both breeding and nonbreeding seasons. The most recent sighting is from 2021 in the Don Edwards National Wildlife Refuge – Ravenswood Salt Ponds R1/R2 (Cornell 2021b. Suitable habitat for WSPs is absent from the geotechnical investigation locations, which are planned to be on previously disturbed and compacted land, and there would be no work in suitable habitat. Therefore, it is unlikely that the WSP would be encountered during the short project implementation period.

Critical Habitat

Designated critical habitat for the WSP exists to the south of the Bayfront Expressway and west of Pond SF2, approximately 400 feet from the C-112/B-110 AA (Figure 8). The staging area is located in the Bedwell Bayfront Park north of the B-108/C-109 AA (Figure 4).

SECTION 4. EFFECTS ANALYSIS

4.1 Potential Effects on Salt Marsh Harvest Mouse

The SMHM has not been observed within the AAs. Suitable SMHM habitat is present within portions of the AAs, but not within the proposed geotechnical investigation footprints. The proposed geotechnical investigations would occur in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing would be required for boring or CPT installation.

SMHM and their nesting and foraging habitats would be minimally impacted, if at all, by the proposed geotechnical investigations. Based on the proposed avoidance of SMHM habitats and the implementation of species-specific AMMs listed in Section 2.5, the potential for project activities to kill or injure SMHM or to destroy their nests is considered discountable.

Geotechnical investigations along roadways, trails, or on top of levees could interfere with normal SMHM behaviors such as foraging, sheltering, and dispersal. Geotechnical investigations that take place during the breeding season could result in temporary nest abandonment. However, impacts would be minimal because the work would be temporary and localized in nature, and it is anticipated that affected individuals would return to their nests or easily move to similarly suitable habitat outside of the AA.

There is potential for contamination from leaks or spills of chemicals or hazardous materials (e.g., vehicle or equipment fuel, oil, grease) to enter soils or adjacent waterways during project implementation. However, implementation of BMPs and AMMs (as described in Section 2.5) would reduce the potential for nearby SMHM habitats to be subject to chemical contamination to discountable levels.

No designated critical habitat would be affected because no critical habitat has been designated for this species.

4.2 Potential Effects on Ridgway's Rail

Although the RR has not been observed within the AAs, suitable RR habitat is present. However, no suitable RR habitat is present within the proposed geotechnical investigation footprints. The proposed geotechnical boring/CPTs would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing would occur during boring/CPT installation.

The RR may be impacted by noise and vibration during project implementation. However, geotechnical investigations near suitable RR habitat would be performed outside of the RR breeding season. Therefore, the proposed action would have no impact on RR breeding behavior. Additionally, work at any one location would be limited in duration. Consequently, any habitat avoidance, displacement from protective cover, or disruption of normal foraging behavior due to project-related noise and vibration would be temporary and localized. Therefore, any disturbance and/or displacement of RRs resulting from project implementation is expected to be minimal.

There is potential for contamination from leaks or spills of chemicals or hazardous materials (e.g., vehicle or equipment fuel, oil, grease) to enter soils or adjacent waterways during project implementation. However, implementation of BMPs and AMMs (as described in Section 2.5) would reduce the potential for nearby RR habitats to be subject to chemical contamination to discountable levels.

No designated critical habitat would be affected because no critical habitat has been designated for this species.

4.3 Potential Effects on California Least Tern

The CLT has been observed in the B-108/C-109 AA. The most recent occurrence is from 2015 in the Don Edwards National Wildlife Refuge – Ravenswood Salt Pond SF2, just south of the C-112/B-110 AA (Figures 6 and 9). Suitable foraging habitat is present within the northern portions of the AAs. However, no suitable habitat is present within the proposed geotechnical investigation footprints. The proposed geotechnical boring/CPTs would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing is anticipated for the boring installation. CLT and their foraging habitat would potentially be impacted by noise and vibration during project implementation.

Geotechnical investigations near foraging habitats for the CLT would be performed outside of their breeding season and preferred habitats, on disturbed and compacted soils on roadsides, trail sides, existing paths, and on top of the existing levees. Based on the expected avoidance of CLT habitats and the implementation of species-specific AMMs listed in Section 2.5, the potential for project activities to injure or injure CLT is considered discountable.

Geotechnical investigations along roadways, trails, or on top of the levees would result in noise, vibration, and human activity that may temporarily disturb CLTs. However, geotechnical investigations are not within the CLT foraging habitat, and general and CLT-specific AMMs would be implemented. Therefore, the potential for disturbance would be discountable.

There is potential for contamination from leaks or spills of chemicals or hazardous materials (e.g., vehicle or equipment fuel, oil, grease) to enter adjacent waterways during project implementation. However, implementation of BMPs and AMMs (as described in Section 2.5) would reduce the potential for nearby CLT foraging habitats to be subject to chemical contamination to discountable levels.

No designated critical habitat would be affected because no critical habitat has been designated for this species.

4.4 Potential Effects on Western Snowy Plover

The WSP has been observed within all of the AAs. The most recent occurrence is from 2021 in the Don Edwards National Wildlife Refuge – Ravenswood Salt Ponds R1/R2, just southeast of the C-112/B-110 AA (Figures 6 and 9). Suitable foraging and nesting habitat is present within all of the AAs. However, no suitable habitat is present within the proposed geotechnical investigation footprints. Proposed geotechnical borings would be in previously disturbed ground along roads, trails, and on top of the existing levees. No vegetation clearing is anticipated for the boring or CPT installation. WSP and their nesting, foraging, and/or dispersal habitats would potentially be impacted by noise during the project implementation.

Geotechnical investigations near foraging and nesting habitats for the WSP would be performed outside of their breeding season and preferred habitats, on disturbed and compacted soils on roadsides, trail sides, existing paths, and on top of the existing levees. Based on the expected avoidance of WSP habitats and the implementation of species-specific AMMs listed in Section 2.5, the potential for project activities to injure or kill WSP or destroy their nests is considered discountable.

Geotechnical investigations along roadways, trails, or on top of the levees would result in noise, vibration, and human activity that may temporarily disturb WSPs. However, construction would not be within the WSP habitat, and general and WSP-specific AMMs would be implemented. Therefore, the potential for disturbance of WSPs to result from project implementation would be minimal.

The geotechnical boring/CPTs would be located in previously disturbed habitats and no vegetation would be removed. There is a possibility of potential leaks or spills of chemical contaminants or hazardous materials (e.g., vehicle or equipment fuel, oil, grease). Implementation of BMPs and AMMs (as described in Section 2.5) would reduce—to insignificant and discountable levels—any such potential effects on the surrounding WSP habitat.

Critical habitat for the WSP does not overlap with the AAs (Figure 8). Therefore, the proposed action would have no effect on critical habitat for the WSP.

SECTION 5. EFFECTS DETERMINATION

Suitable SMHM foraging and dispersal habitat is present in the AAs. With the implementation of the proposed general and species-specific AMMs, appropriate BMPs, and given the relatively short duration of the proposed geotechnical investigation activities, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the SMHM.

Suitable RR foraging and dispersal habitat is present within the AAs. With the implementation of proposed general and species-specific AMMs, including avoidance of the RR breeding season; appropriate BMPs; and given the relatively short duration of the proposed geotechnical investigation activities , FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the RR.

Suitable CLT foraging and dispersal habitat is present within the AAs. With the implementation of proposed general and species-specific AMMs, including avoidance of the CLT breeding season; appropriate BMPs; and given the relatively short duration of the proposed geotechnical investigation activities, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the CLT.

Suitable WSP foraging, nesting, and dispersal habitat is present within the AAs, and the WSP has been previously documented nesting in the dried salt evaporation ponds. With the implementation of proposed general and species-specific AMMs, including avoidance of the WSP nesting season; appropriate BMPs; and given the relatively short duration of the proposed geotechnical investigation activities, FEMA has determined that this project ***may affect, but is not likely to adversely affect*** the WSP.

SECTION 6. REFERENCES

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SECTION 7. LIST OF PREPARERS

Name, Organization	Education	Experience
Wilson Fogler, CDM Smith	BS Forestry (Wildlife Habitat Management and Conservation Concentration)	Six years of experience in threatened and endangered species surveys, biological assessments, regulatory compliance, and permitting
Murray Wade, CDM Smith	MS Environmental Science (Avian Research); BS Forest Biology (Wildlife Management)	Thirty-five years of experience in threatened and endangered species surveys and assessment, biological assessment, wildlife ecology, and ornithological research
Kate Stenberg, PhD, CDM Smith	PhD Wildlife and Fisheries Science; M. Admin. Environmental Administration; BA Biology – Environmental Studies	Thirty-five years of experience in wildlife assessment and conservation, planning, environmental documentation, multiagency permitting, and litigation support

Attachment A
USFWS Information for Planning and Consultation and California Natural Diversity Database Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: May 27, 2022
Project Code: 2022-0048214
Project Name: Menlo Park SAFER Bay Phase 1

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
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Project Summary

Project Code: 2022-0048214
Event Code: None
Project Name: Menlo Park SAFER Bay Phase 1
Project Type: Flooding
Project Description: Phase 1 would include procurement of environmental and engineering services, public outreach, environmental permitting, and design to the 90 percent level. Phase 2 would include final design, procurement for construction management and contracting services, and construction activities.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.4862224,-122.14631472891901,14z

Counties: San Mateo County, California

Endangered Species Act Species

There is a total of 17 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
California Seablite *Suaeda californica*	Endangered

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6310

Fountain Thistle *Cirsium fontinale var. fontinale*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7939

Marin Dwarf-flax *Hesperolinon congestum*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5363

San Mateo Thornmint *Acanthomintha obovata ssp. duttonii*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2038

Showy Indian Clover *Trifolium amoenum*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6459

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Mountain View (3712241) OR Redwood Point (3712252) OR Newark (3712251) OR Niles (3712158) OR Palo Alto (3712242) OR Milpitas (3712148) OR Mindego Hill (3712232) OR Cupertino (3712231) OR San Jose West (3712138))
 AND Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened)

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Alameda whipsnake *Masticophis lateralis euryxanthus*	ARADB21031	Threatened	Threatened	G4T2	S2	
Bay checkerspot butterfly *Euphydryas editha bayensis*	IILEPK4055	Threatened	None	G5T1	S1	
California least tern *Sternula antillarum browni*	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California Ridgway's rail *Rallus obsoletus obsoletus*	ABNME05011	Endangered	Endangered	G3T1	S1	FP
California seablite *Suaeda californica*	PDCHE0P020	Endangered	None	G1	S1	1B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Contra Costa goldfields *Lasthenia conjugens*	PDAST5L040	Endangered	None	G1	S1	1B.1
fountain thistle *Cirsium fontinale var. fontinale*	PDAST2E161	Endangered	Endangered	G2T1	S1	1B.1
marbled murrelet *Brachyramphus marmoratus*	ABNNN06010	Threatened	Endangered	G3	S2	
Marin western flax *Hesperolinon congestum*	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
robust spineflower *Chorizanthe robusta var. robusta*	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
salt-marsh harvest mouse *Reithrodontomys raviventris*	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
San Francisco gartersnake *Thamnophis sirtalis tetrataenia*	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
San Mateo thorn-mint *Acanthomintha duttonii*	PDLAM01040	Endangered	Endangered	G1	S1	1B.1
San Mateo woolly sunflower *Eriophyllum latilobum*	PDAST3N060	Endangered	Endangered	G1	S1	1B.1
steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
two-fork clover *Trifolium amoenum*	PDFAB40040	Endangered	None	G1	S1	1B.1
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
western snowy plover *Charadrius nivosus nivosus*	ABNNB03031	Threatened	None	G3T3	S2	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 21

Attachment B
Federally Listed Species with the Potential to Occur in the Action Area

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
MAMMAL						
Salt marsh harvest mouse	*Reithrodontomys raviventris*	FE	Preferred habitat is pickleweed (*Salicornia virginica*).	Spring through autumn	Restricted to the salt and brackish marshes of San Francisco, San Pablo, and Suisun Bay areas.	According to the California Natural Diversity Database (CNDDB), the salt marsh harvest mouse has been observed approximately 0.4 mile west of the Action Areas (AAs) in 1988 where 15 mice were trapped. Additionally, a single salt marsh harvest mouse was trapped in 1990 approximately 0.6 mile from the AAs (CDFW 2022). Suitable SMHM foraging and dispersal habitat is known to be present in the AAs. However, with the implementation of general and species-specific avoidance and minimization measures (AMMs), project-related impacts on the SMHM would be insignificant or discountable. **Effect Determination:** **May affect, not likely to adversely affect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
BIRDS						
Ridgway's rail (also known as [aka] California clapper rail)	*Rallus longirostris obsoletus*	FE	Coastal salt marshes and lagoons that contain pickleweed and cordgrass (*Spartina* sp.).	March – August	Marshes of the San Francisco estuary (USFWS 2022j).	According to the CNDDB, the Ridgway's rail (RR) has been observed approximately 0.4 mile west of the AAs in 2006 and approximately 0.7 mile southeast of the AAs in 2017 (CDFW 2022). eBird (Cornell 2021) has numerous records of RR in or near the AAs in recent years. The most recent sightings are from 2020 in Ravenswood Open Space Preserve and Cooley Landing Park, and from 2021 on Ravenswood Trail (Cornell 2021a and Cornell 2021b). Suitable RR foraging and dispersal habitat is known to be present in the AAs. However, with the implementation of general and species-specific AMMs, project-related impacts on the RR would be insignificant or discountable. **Effect Determination:** **May affect, not likely to adversely affect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
California least tern	*Sternula antillarum browni*	FE	Open beaches and nearshore waters.	March – October	Extending to San Francisco along the California coast to Tijuana, Mexico. Occurs on the California coast in late spring and summer. Also found in western Arizona (USFWS 2020a).	The California least tern (CLT) has been recorded in the B-108/C-109 AA in 1976; however, this observation is now considered extirpated. The nearest presumed extant observation was recorded approximately 3.8 miles southeast (1987) of the AAs (CDFW 2022). From 2015, eBird (Cornell 2021c) has a record from the Don Edwards National Wildlife Refuge (NWR) – Ravenswood Salt Pond SF2, just south of the AAs. Suitable CLT foraging and dispersal habitat is known to be present in the AAs. However, with the implementation of general and species-specific AMMs, project-related impacts on the CLT would be insignificant or discountable. **Effect Determination:** **May affect, not likely to adversely affect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Marbled murrelet	*Brachyramphus marmoratus*	FT	Nearshore marine waters (foraging) and inland old growth coniferous forests (nesting).	March – September	Pacific coast from Alaska to California (USFWS 1997).	The proposed project is outside the current range of the marbled murrelet. No suitable old growth coniferous forest habitat exists within or adjacent to the AAs. The nearest CNDDB documented occurrence, from 2007, was reported over 11 miles to the west (CDFW 2022). Designated critical habitat exists 9 miles to the west/southwest. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Western snowy plover	*Charadrius nivosus nivosus*	FT	Coastal beaches.	March 1 – September 14	Midway Beach, Washington south to Bahia Magdalena, Baja California, Mexico (USFWS 2007a).	According to the CNDDB, the western snowy plover (WSP) has been observed in the AAs, and more than 80 nests were documented within or near the AAs in the salt evaporation ponds as recently as 2017 (CDFW 2022). eBird has numerous records of WSP in or near the AAs in recent years. The most recent sighting is from 2021 in the Don Edwards NWR – Ravenswood Salt Ponds R1/R2 (Cornell 2021d). Suitable WSP foraging, nesting, and dispersal habitat is known to be present within the AAs. However, with the implementation of general and species-specific AMMs, project-related impacts on the WSP would be insignificant or discountable. Designated critical habitat for the WSP exists 0.08 mile east of the C-112/B-110 AA. No impact is anticipated to the critical habitat from noise because the borings are to be located to the north of busy California State Highway Route 84 and the critical habitat is to the south of this road. **<u>Effect Determination:</u>** **May affect, not likely to adversely affect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Yellow-billed cuckoo (Western U.S. distinct population segment [DPS])	*Coccyzus americanus occidentalis*	FT	Requires large tracts of dense riparian forest for breeding (typically greater than 50 acres).	May – September	West of the Rocky Mountains from Canada to Mexico (USFWS 2019).	No suitable riparian forest habitat exists within or adjacent to the AAs. The nearest historical CNDDB documented occurrence of yellow-billed cuckoo was reported more than 11 miles to the southeast in 1899, and its presence is listed as "extirpated" (CDFW 2022). Designated critical habitat exists 120 miles to the north. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
REPTILES						
Green sea turtle, East Pacific DPS	*Chelonia mydas*	FT	Beaches for nesting, open ocean convergences zone, and coastal areas for benthic feeding (seagrass and algae).	Roughly June – September	In the U.S. Pacific, nesting in Hawaii, Commonwealth of the Northern Marianas, Guam, and American Samoa (USFWS 2022c).	Although the AAs are within the range of the green sea turtle, no suitable nesting beaches or open-ocean areas are within the AAs. The nearest CNDDB-documented occurrence was reported more than 300 miles to the south/southeast (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	FE	Adult San Francisco garter snakes feed on California red-legged frogs. They may also feed on juvenile bullfrogs. The snakes' preferred habitat are densely vegetated ponds near open hillsides where they can sun themselves, feed, and find cover in rodent burrows. These snakes avoid brackish marsh areas because their preferred prey (California red-legged frogs) cannot survive in saline water.	June – September	Historically, San Francisco garter snakes occurred in scattered wetland areas on the San Francisco Peninsula from the San Francisco County line south along the base of the Santa Cruz Mountains and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County (USFWS 2022k).	Although the AAs are within the range of the San Francisco garter snake, no preferred freshwater habitats are within the AAs. According to the CNDDB, there is a historical observation of the San Francisco garter snake that overlaps with the AAs from 1922. More recent occurrences are 6 miles west, from 2016, and 7 miles south, from 2012 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
AMPHIBIANS						
California red-legged frog	*Rana draytonii*	FT	Varied freshwater breeding habitats (e.g., streams, creeks, ponds, marshes) within a matrix of riparian and upland dispersal habitats.	November – April	Coastal drainages from central California to northern Baja California (USFWS 2002).	The potential for California red-legged frog (CRLF) to occur in the AAs is considered low because of the presence of primarily brackish aquatic habitats. CRLF has not been documented within the AAs and is unlikely to occur in the project area because the species is limited to freshwater habitats. The nearest documented occurrences have been from 4 miles west, in 1955, and more than 5 miles southwest, from 2016 (CDFW 2022). Designated critical habitat exists 7 miles to the west and 9 miles to the southwest. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
California tiger salamander, central California DPS	*Ambystoma californiense*	FT	Non-breeding habitat includes humid forests, woodlands, grasslands, coastal shrub, and streamsides. Breeding occurs in shallow freshwater ephemeral or semi-permanent vernal pools and ponds that fill during heavy winter rains.	November – February	Central Valley of California. Small populations around Santa Barbara and Sonoma. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County (up to elevations of 3,500 feet) (USFWS 2022b).	The potential for California tiger salamander to occur in the AAs is low because of the presence of primarily brackish aquatic habitats. This salamander has not been documented within the AAs and is unlikely to occur in the project area because the species is limited to freshwater habitats. According to the CNDDB, there are historical observations of the California tiger salamander 1.3 miles to the south/southwest, from 1893, and 2.9 miles to the south, from 1900. More recent occurrences are 2.4 miles to the southwest, from 2002, and 3.9 miles southeast, from 2018 (CDFW 2022). Designated critical habitat exists over 17 miles to the east. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
FISH						
Delta smelt	*Hypomesus transpacificus*	FT	The delta smelt is a euryhaline species found primarily in estuarine ecosystems.	February – July	Delta smelt are currently found in and near the Sacramento River–San Joaquin River estuary in California (USFWS 2022g).	The AAs are outside of the range for the Delta smelt. The nearest CNDDB occurrence for this smelt is more than 40 miles to the north from 2006 (CDFW 2022). Designated critical habitat for this species is also 40 miles to the north. Delta smelt are now generally restricted to the estuarine (salt and freshwater mixing zone) habitat of the Sacramento–San Joaquin Delta Estuary. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Green sturgeon (southern DPS)	*Acipenser medirostris*	FT	Anadromous species that inhabits the nearshore marine environment outside of spawning in natal streams. Spawning habitat is cool, deep sections of large rivers with gravel and cobble bottoms.	March – June	Non-spawning adults occur across western seaboard of North America, from Alaska to Baja Mexico. Spawning only occurs in Sacramento River watershed (NMFS 2022e).	There are no occurrences of green sturgeon recorded in the CNDDB (CDFW 2022). San Francisco Bay and San Francisquito Creek are listed as designated critical habitats for this sturgeon. The proposed project of conducting subsurface exploration at seven sites along the proposed levee alignment would not impact critical habitat for the green sturgeon. All work would be conducted outside of special status species windows and when water levels are at their lowest in the summer. All proposed staging is in previously disturbed upland habitats. This project does not include any in-water construction activities. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Steelhead (Central California Coast [DPS])	*Oncorhynchus mykiss irideus* (Population: 8)	FT	Cold-water streams with adequate dissolved oxygen for spawning and rearing. Spawning habitat consists of gravel substrates free of excessive silt.	December – April	The central California coast steelhead DPS includes all populations below natural and human-made barriers from the Russian River (Sonoma County) south to Aptos Creek (Santa Cruz County) (California Trout 2017).	The CNDDB includes occurrences of the central California coast DPS steelhead 5.5 miles to the northeast on Alameda Creek and 9.9 miles to the southeast on the Guadalupe River (CDFW 2022). San Francisco Bay and San Francisquito Creek are listed as designated critical habitats for this DPS. The proposed project of conducting subsurface exploration at seven sites along the proposed levee alignment would not impact critical habitat for the central California coast DPS steelhead. All work would be conducted outside of special status species windows and when water levels are at their lowest in the summer. All proposed staging is in previously disturbed upland habitats. This project does not include any in-water construction activities. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
CRUSTACEANS						
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	The vernal pool tadpole shrimp is found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California.	Variable and dependent on rainfall	The vernal pool tadpole shrimp has a patchy distribution across the Central Valley of California, from Shasta County southward to northwestern Tulare County, with isolated occurrences in Alameda and Contra Costa Counties. The species is not known to occur in San Mateo County, California (USFWS 2007b).	No suitable vernal pool habitat exists within or adjacent to the AAs. The CNDDB records no occurrences of vernal pool tadpole shrimp in the AAs or in San Mateo County. The nearest CNDDB occurrence for this shrimp is over 9 miles to the east, from 2016 (CDFW 2022). Designated critical habitat for this species is also over 9 miles to the east. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
INSECTS						
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT	Shallow, serpentine-derived soil, on grassy slopes and flats or open woodland. The primary larvae host plant is dwarf plantain (*Plantago erecta*) and the secondary host plant is purple owl's clover (*Castilleja densiflora* or *C. exserta*).	Late February – early May	Historically, the bay checkerspot butterfly occurred primarily along the spine of the San Francisco Peninsula, from Twin Peaks to southern Santa Clara County and in a few pockets in Alameda and Contra Costa counties (USFWS 2022e).	No suitable habitat exists within or adjacent to the AAs for the host plants of the bay checkerspot butterfly. The nearest CNDDB-documented occurrence of this butterfly is approximately 5.2 miles to the west and was recorded in 2017 (CDFW 2022). Designated critical habitat exists over 6 miles to the west. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
PLANTS						
California seablite	*Suaeda californica*	FE	California seablite is most commonly found in the narrow ecotone between salt marsh and stable dune scrub communities occurring at the edge of the salt marsh.	January – August	Historically found in the San Francisco Bay Area, now it is limited to re-established occurrences in selected areas of the bay area (USFWS 2010).	Natural populations of the California seablite have been extirpated in the San Francisco Bay area. The nearest extirpated occurrence of this plant was 2.9 miles to the southeast, in 1971; although, the 5-year review indicates that there had been no valid reports or collections since 1960 (USFWS 2010). Reestablishment has been conducted in the San Francisco Bay area with the nearest reestablished occurrence being more than 13 miles north, from 2009 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Contra Costa goldfields	*Lasthenia conjugens*	FE	Contra Costa goldfields grows in vernal pools within open grassy areas in woodlands and valley grasslands from sea level to 1,500 feet.	March – June	Currently, 22 populations are believed to be extant in Mendocino, Napa, Marin, Contra Costa, Alameda, Solano, and Monterey Counties (USFWS 2022h).	No suitable vernal pool habitat exists within or adjacent to the AAs. The nearest CNDDB historical occurrence was reported 5.2 miles to the northeast, from 1895. There is a more recent occurrence 9.2 miles to the east, from 2011 (CDFW 2022). No CNDDB occurrences are recorded from the southwestern San Francisco Bay Area. Designated critical habitat exists more than 35 miles to the north. Therefore, no potential direct or indirect effects on the species or designated critical habitat are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
Fountain thistle	*Cirsium fontinale* var. *fontinale*	FE	Habitat is restricted to perpetually moist clay openings in riparian or serpentine chaparral between about 300 to 600 feet in elevation.	June – October	Historically, this plant occurred in both San Mateo and Santa Clara Counties, but it is now found in only four locations in San Mateo County (USFWS 2022d).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest documented occurrence is 4.6 miles to the southwest from 2013 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Marin dwarf-flax (aka Marin western flax)	*Hesperolinon congestum*	FT	Marin dwarf-flax is found on serpentine soils between 100 to 1,200 feet in elevation.	May – July	From Main County south to San Mateo County (USFWS 2022f).	No suitable habitat exists within the AAs. Elevations of the AAs are all below 20 feet. The nearest documented occurrence is 4.6 miles to the west from 2007 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
San Mateo thornmint	*Acanthomintha obovata ssp. duttonii*	FE	San Mateo thornmint is restricted to serpentine soils of chaparral and valley and foothill grasslands in San Mateo County. The species occupies slopes and flats with deep, heavy-clay soil inclusions.	April – June	The only remaining large population, in Edgewood County Park, is a remnant of a more extensive population damaged by motor-vehicle use. Edgewood County Park also contains a small subpopulation. There is an introduced population at Pulgas Ridge (USFWS 2022a).	No suitable habitat (serpentine soils) exists within the AAs. The nearest documented occurrence is 3.5 miles to the west from 1977. A more recent occurrence is 5.9 miles to the west from 2013 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

Common Name	Scientific Name	Listing Status	General Habitat	Blooming or Breeding Season	Range or Summary of Population	Potential to Occur in the Action Area/ Effect Determination
Showy Indian clover (aka two-forked clover)	*Trifolium amoenum*	FT	The species was found in a variety of habitats, including low, wet swales, grasslands, and grassy hillsides. It typically grows in moist, heavy soils below 328 feet in elevation.	April – June	Showy Indian clover was extirpated from all of its 24 historically known locations. The species was considered extinct until 1993, when a single plant was discovered on privately owned property in Sonoma County. That site has since been developed and the species is no longer present. Another natural population, consisting of about 200 plants, was discovered in 1996 in Marin County on privately owned property (USFWS 2022l).	No suitable habitat (low wet swales, grasslands, grassy hillsides) exists within the AAs. The nearest CNDDB historical occurrence was reported, from 1950, 5.9 miles to the southwest. There is a more recent occurrence from 65 miles to the north, from 2002 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**
White-rayed pentachaeta	*Pentachaeta bellidiflora*	FE	This species is found in serpentine soils, which are formed from weathered volcanic rock.	March –May	Historically ranged from Main County to Santa Cruz County. A small remnant population exists in Edgewood County Park (USFWS 2022i).	No suitable habitat (serpentine soils) exists within the AAs. The nearest CNDDB historic occurrence is 6.6 miles to the west from 2004 (CDFW 2022). Therefore, no potential direct or indirect effects on the species are anticipated to occur from implementation of the proposed project. **Effect Determination:** **No effect**

FE = Federally Endangered
FT = Federally Threatened

APPENDIX B REFERENCES

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Attachment C
Ground Photos of SAFER Bay Phase 1
Proposed Geotechnical Boring Locations

Menlo Park SAFER Bay Project
Levee Alignment Photos

Provided below are a selection of photographs of the project site taken in December 2020. Figure 1 indicates the location and direction of view for each photo. Each photo is accompanied by a caption describing the existing landmarks and the proposed project elements at that location.

Figure 1. Overall project Site Plan. White circles indicate locations at which December 2020 project site photos were taken; arrows indicate direction of view for each photo. Refer to following photographs and descriptions.

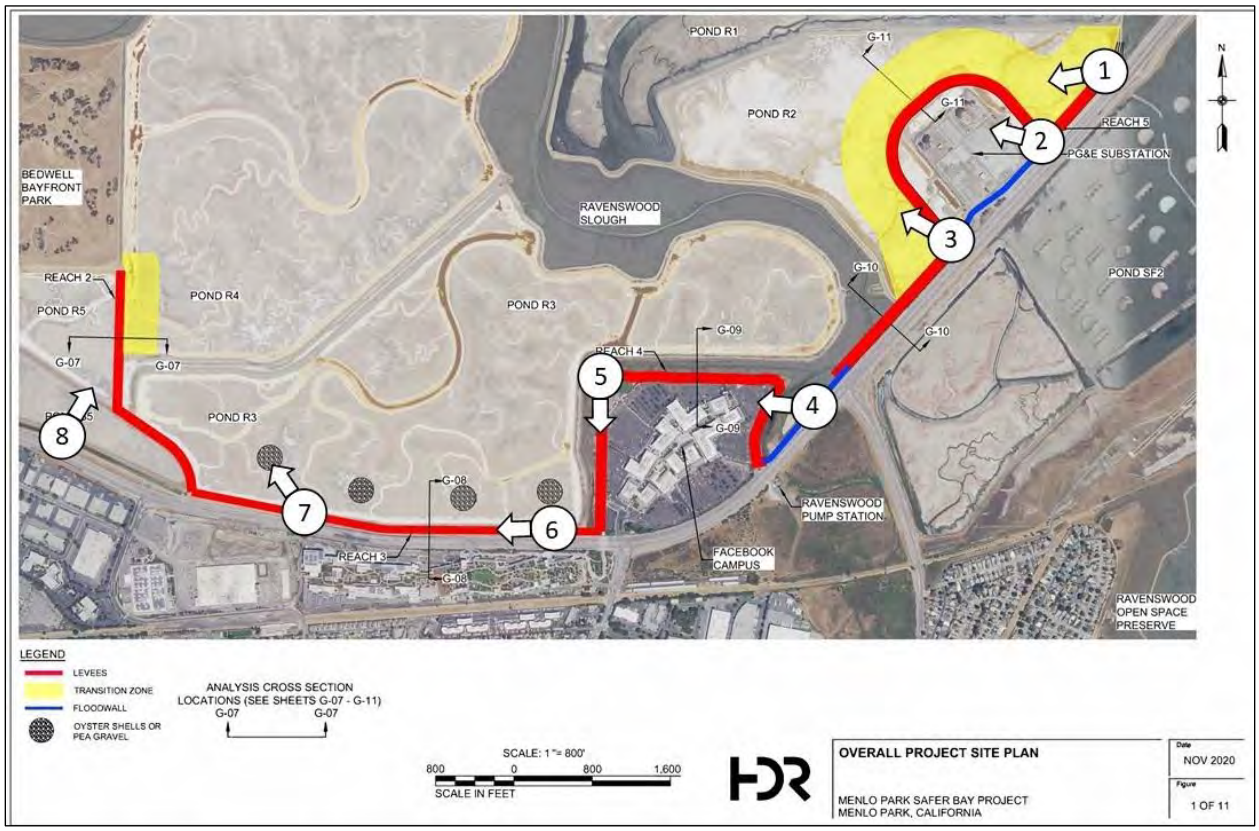

Photo 4. View from the northern edge of Highway 84 near the western limit of the proposed Reach 5, looking west. The paved Bay Trail is in the foreground. The buildings of Facebook's Classic Campus are in the background. The terminus of Ravenswood Slough is in the vegetated area before the campus. The proposed project would construct a floodwall at this location to avoid constraining the slough which facilitates drainage from the south side of the highway.

Photo 5. View from paved Bay Trail at the northwest corner of Facebook's Classic Campus, on the proposed Reach 4, looking south. The campus buildings are at the left; the waters of tidal Pond R3 are to the right. The proposed project would construct an engineered levee at this location.

Photo 6. View from paved Bay Trail at the eastern limit of proposed Reach 3, looking west. Highway 84 is at the left; tidal Pond R3 is to the right. The proposed project would construct an engineered levee at this location. Oyster shells would be placed in Pond R3 to enhance breeding habitat of the Western Snowy Plover.

Photo 7. View from northern edge of Highway 84 near western limit of proposed Reach 3, looking north and west. The paved Bay Trail is in the foreground; Bedwell Bayfront Park is the elevated topography in the background. Tidal Ponds R3 and R4 are in front of the park. The proposed project would construct an engineered levee at this location. Oyster shells would be placed in Pond R3 to enhance breeding habitat of the Western Snowy Plover.

Photo 8. View from northern edge of Highway 84 adjacent to proposed Reach 2, looking north and east. The paved Bay Trail is in the middle foreground; Bedwell Bayfront Park is the elevated topography in the left background. Tidal Ponds S5 and R5 are in front of the park. The proposed project would construct an engineered levee between the park and Reach 3. Transition zone habitat would be created here the levee borders Pond R4.

Attachment B

Site Management Plans for Brownfield Redevelopment Areas, East Palo Alto

As requested- file is very large

Attachment C

BRRIT Initial Consultation Permitting
Comments and Responses

Discussion Draft

BRRIT Comments and SFCJPA Responses

August 18, 2021

on

Strategy to Advance Flood Protection, Ecosystems, and Recreation along San Francisco Bay (SAFER Bay) Project

The SFCJPA initially met with the Bay Restoration Regulatory Integration Team (BRRIT) on March 4, 2020 to discuss the SAFER Bay Project. Below is the list of initial comments from each of the BRRIT's representative agencies along with the SFCJPA's response.

The project is in the early design phase, and the BRRIT will have additional comments as design progresses.

Overall BRRIT Comment: We recommend you schedule a follow-up meeting before or soon after you develop 30 percent design. It might also be a good idea to schedule a meeting for a focused discussion on transition zone slopes.

***SFCJPA Response**: Agreed- our planned meeting on September 1 is the second BRRIT meeting. The project has been on hold for the past year and recently restarted.*

Combined Comments:

1. Wetland restoration projects can be associated with mosquito control issues. We recommend that the Project coordinate with their local Mosquito Abatement District to evaluate and address these issues. ***SFCJPA Response**: Agreed.*
2. The agencies hope that a balance can be found in terms of retainment of levee segments such that inner-marsh high tide refugia is provided while not resulting in entrainment of fish. See comments below for elaboration. ***SFCJPA Response**: Agreed*
   We should prioritize discussions involving proposed slope ratio of transition zones, especially in existing high quality habitat. Over the next couple of weeks, the pertinent agencies intend to discuss this matter together and be able to provide more meaningful feedback soon. ***SFCJPA Response**: This feedback was provided via email from Valary to Tess Byler on 4/5/2021 that clarified (via a conversation with Joy Albertson and Rachel Tertes on 3/26/20), regarding tradeoffs involved with constructing ecotone into fully functioning tidal marsh that currently supports CA Ridgways rail (CRR). The guidance was that much depends on the sustainability of the marsh given sea level rise, erosion, etc. in a future without the project. The point was made that if the marsh will flood in the short-term if not for the restoration, then it could be well worth minor effects to the species:*

   > *Logically, if the effects to CRR are greater than the worth of the ecotone, then it may not be prudent. Joy and Rachel advised further discussion with Meg Marriott, at the San*

Pablo unit of the refuge, as she's had experience with this tradeoff at a North bay project site (however I believe there was not as healthy a CRR population pre-project). In the meantime, perhaps the team could consider the projections for inundation (due to slr) at the site as well as possible tweaks to the design like whether it is feasible to set back the levee in a landward direction where non-residential areas might provide space. In addition, a refugial habitat assessment in the general area of the site would greatly inform what high tide refugia already exists for CRR and SMHM.

The SFCJPA SAFER Project proposes to design a narrow transition zone (e.g., 3H:1V-5H:1V) to reduce tidal marsh impacts and mimic or slightly improve upon the existing transition zone refugial habitat function in reaches where flood control levee and/or floodwall occurs adjacent to existing high quality salt marsh and associated high tide refugia. Our approach is to do no harm and implement an adaptive management approach to evaluate the ability of the marsh to keep pace with climate change.

In areas that are not adjacent to existing high-quality marsh and transition zone habitat is limiting, the transition zone would be broader (e.g., up to 30H:1V in Ponds R1/R2 as part of the proposed tidal salt marsh restoration).

We will incorporate the best estimates for sedimentation and inundation and will be obtaining easements from adjacent landowners to set back levees on their land as much as possible given site constraints.

A refugial habitat assessment is planned in the future as part of the Biological Assessment.

Federal Comments:

USACE

1. As we discussed in the meeting, this project will most likely require an individual permit (IP) and as such will require that you provide a 404(b)(1) alternatives analysis. Please consider minimizing the fill within wetlands to the extent feasible while still meeting the project purpose. ***SFCJPA Response****: We will comply with Corps requirements and conduct a 404(b)1 alternatives analysis and have been watching closely the permit process for the USACE's Shoreline Study Flood Protection Project in Alviso.*
2. I think this project is self-mitigating, given the restoration activities that are proposed and the minimization measures proposed. However, I do not know whether you can "bank" the additional restored wetland as mitigation for future phases – that is something I need to clarify with the Project Management Committee. ***SFCJPA Response****: Let's discuss this. SAFER proposes to construct the Ravenswood Pond R1/R2 full tidal marsh restoration option or tidal/managed hybrid option as part of Phase 1 of the project in order to reduce temporal loss of regulated tidal marsh and pond habitat. The entirety of the proposed restoration would mitigate impacts for the entire SAFER programmatic project including the phase 1 levee improvements. As you know, it would be difficult and unnecessarily costly to phase the restoration of these large salt ponds in tandem with the phasing of levee construction/habitat impacts because that would require construction of additional inter pond berm(s) to section off segments of the pond(s); in the face*

of sea level rise a onetime restoration of the ponds makes the most sense to help the system evolve quickly before the rate of sea level rise accelerates.

3. Given our discussion, it was clear that the permitting consulting team is well aware of the materials that they need to provide to the Corps as part of their application, including a delineation of Waters of the US; biological assessment; cultural resources inventory and evaluation; monitoring plan; quantities of fill discharge and work conducted within section 10 waters; and adjacent property owners list. Our website provides additional information if you have specific questions about the items to include in your application, or the preferred formats: (https://www.spn.usace.army.mil/Missions/Regulatory/How-to-Apply-for-a-Permit/). ***SFCJPA Response:*** *Thank you, we will continue to keep abreast of changing regulatory requirements.*
4. For the restoration of ponds R1 & R2, do you plan to raise the elevation of the pond, or do you have a sediment analysis that demonstrates that the sediment supply will be adequate to support a tidal marsh in these ponds? ***SFCJPA Response****: We will assess the ponds' sedimentation potential with geomorphic modeling referenced to adjacent restoration areas to confirm that ambient suspended sediment supply can provide enough deposition to achieve marsh plain elevations.*
5. Have you considered the downstream impacts of diverting flows to the two ponds and diverting the sediments that would otherwise be transported further downstream? ***SFCJPA Response****: We are working with the South Bay Salt Ponds PMT and will discuss this.*
6. Please provide as much information as you can on the source of sediment/soil for the proposed transition zones. ***SFCJPA Response****: We have been registered on Sedimatch since 2017 and will use it and other local soil sources that can meet the South Bay Salt Ponds QAPP criteria. Moreover, H. T. Harvey is currently the prime consultant assisting the CA Coastal Conservancy and stakeholders with the design of 90 acres of transition zone for the USACE's Shoreline Flood Protection Project in Alviso. SAFER will apply lessons learned from the Shoreline Study design to the transition zone (Tzone) design in Ponds R1/R2. For example, similar to the Shoreline Study, SAFER may be able to reuse bay mud excavated from the engineered levee key trench for construction of the Tzone. These design details related to soil suitability for Tzone construction will be investigated during the detailed design process.*
7. The restoration of Ponds R1 and R2 will require success criteria, measurable performance standards, an ecological reference, and a mitigation and monitoring plan – all similar to what would be required for "permittee responsible mitigation" because the restoration of these ponds is going to be proposed as mitigation for the levee-associated fill impacts. ***SFCJPA Response****: These will be prepared.*

NMFS

NMFS protected species and habitats that could occur in or near the proposed project include the following:

1. **California Central Coast (CCC) Steelhead and their critical habitat.** Threatened CCC steelhead could be present in the project area and the project is located in critical habitat for CCC steelhead. (see NMFS Recovery Plan for more information on the species, National Marine Fisheries Service. 2016. Final Coastal Multispecies Recovery Plan. National Marine Fisheries Service, West Coast Region, Santa Rosa, California.).

2. **Southern Distinct Population Segment of Green Sturgeon and their critical habitat.** Multiple life stages of green sturgeon can be present in San Francisco Bay year round and may forage in the project area (see NMFS Recovery Plan for more information on the species, National Marine Fisheries Service. 2018. Recovery Plan for the Southern Distinct Population Segment of North American Green Sturgeon (*Acipenser medirostris*). National Marine Fisheries Service, Sacramento, CA.).

3. **Essential Fish Habitat.** The Project area is located within an area identified as Essential Fish Habitat (EFH) for various life stages of fish species managed under the Pacific Groundfish Fishery Management Plan (FMP), the Coastal Pelagic Species FMP, and the Pacific Coast Salmon FMP. San Francisco Bay, including the Project area, is also designated as an estuary habitat area of particular concern (HAPC) for various federally-managed fish species as defined in the Pacific Salmon and Groundfish FMPs. For more information on HAPCs designated under the Groundfish and Salmon FMPs, please see page 102 of the Groundfish FMP at http://www.pcouncil.org/wp-content/uploads/2017/03/GF_FMP_FinalThruA27-Aug2016.pdf, and page 6 of the Salmon FMP Appendix A at http://www.pcouncil.org/wp-content/uploads/Salmon_EFH_Appendix_A_FINAL_September-25.pdf.

   ***SFCJPA Response**: Thank you for the information and links.*

4. NMFS will be considering the impacts to protected species and habitats and will be interested in the project actions that would avoid and minimize impacts to protected resources. Below are listed additional questions and concerns related to specific project elements.

   a. **Tidal Marsh Extent in the San Francisco Bay and Accommodating Sea Level Rise.** The San Francisco Bay lost 95% of historical tidal marsh habitat, and with that loss came a commensurate loss of the ecosystem services tidal marsh habitat provided. Currently as a community, we are falling short of attaining our goal set in the 1990s to restore 100 thousand acres of tidal marsh habitat in the Bay and restore ecosystem processes (Goals Project 2015). Additionally, 2030 is fast approaching, and the challenges for tidal marsh to accommodate sea level rise will be exacerbated at that time (SFEI and SPUR 2019). For this reason we encourage the project to convert the majority of area of R1 and R2 to tidal marsh in light of urgent sea level rise concerns. ***SFCJPA Response**: Agreed, we are working with South Bay Salt Ponds PMT on this.*

   b. **Habitat Value for Fish in Restored Ponds.** The conceptual drawings shared with the BRRIT on Wednesday, March 4, indicated that the applicants may propose to leave the external and internal levees in place with one connection to the Bay via breach to the historic channel. The conversion of R1 and R2 to tidal marsh should benefit fish species, but we also caution that newly breached tidal marsh habitat also has the potential to adversely affect native fish, including steelhead, green sturgeon, and EFH for groundfish, coastal pelagics, and salmon. Entrainment, impaired water quality, changes to primary production and prey availability, and increased predation can negatively impact fish species in human-engineered tidal marsh habitats (Hobbs et al. 2013, Lewis et al. 2016). How have project designers/engineers considered hydrology, elevation, inundation regimes, and circulation patterns when developing the design to ensure water quality will not harm fish species and will limit fish entrainment in the newly restored habitat?

Please provide details on the basis for design and these considerations for fish species. ***SFCJPA Response****: We will consider all these issues when designing how tidal restoration will be restored to Ponds R1 and R2. SAFER will employ lessons learned from the numerous past large scale tidal marsh restoration projects in the baylands to create a restoration design that handles the above issues. For example Pond R1 has retained the bathymetric signature of a large, remnant historic slough channel network. SAFER's restoration design will leverage this feature by designing breach locations and borrow ditch blocks to help ensure that restored tidal action is conveyed through the restored tidal marsh via this historic slough channel network.*

c. **Long-term Operations, Maintenance, and Adaptive Management.** Will the project have long term operations, maintenance, and or adaptive management associated with the flood protection or habitat enhancements? If so, NMFS will need sufficient detail to evaluate any adverse impacts to fish and habitats associated with long term project activities. ***SFCJPA Response****: Yes*

d. **Construction Timing for In-Water Work.** The project is located in migration and rearing habitat for CCC steelhead. We recommend working outside of the primary salmonid migration period (suggest a work window for construction from June 15 to November 30) to limit the presence of listed salmonids in the action area. Green sturgeon can be present in the area year round. ***SFCJPA Response****: Agreed*

e. **Turbidity and Water Quality during Construction.** Incorporating project elements and minimization measures that will limit changes to water quality and disturbance to benthic habitat will be important. ***SFCJPA Response:*** *Agreed*

f. **Impacts to EFH during construction.** Adverse impacts to EFH may be unavoidable with in-water work, but net benefits can be considered. ***SFCJPA Response****: Yes, details to be refined and we are seeking the best balance on short term adverse impacts versus long term net benefits.*

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USFWS

1. **California Ridgway's rail**. We recommend you conduct surveys for Ca Ridgways rail (CRR) according to the 2015 *California Clapper Rail Survey Protocol, (*as opposed to the 2017 refuge-developed *Site Specific Protocol for Monitoring Marsh Birds* which is designed for long-term monitoring and research) to determine if CRR are onsite in each year of construction. ***SFCJPA Response:*** *In areas where this species may not be present (due to lower quality of tidal marsh habitat and distance from higher-quality habitat) near work areas each year, such as in the marsh between Reach 7 and the Bay Trail, the uppermost end of Ravenswood Slough, and the upper end of Flood Slough, protocol-level surveys would be conducted in each year in which construction near such habitat will occur. However, California Ridgway's rails will be assumed to be present in the Faber and Laumeister marshes adjacent to Reaches 8 and 9, and in the Cooley Landing marsh 9 adjacent to the southern portion of Reach 7, as we know those marshes are occupied by large numbers of individuals each year.*
2. As mentioned during the pre-application meeting, as a first step toward minimizing effects to CRR and because they are almost certainly present at Faber/Laumeister/Cooley Landing, you should strive to limit construction activities at Site A to outside of the breeding season for CRR (so limited to Sept 1- Jan 31, notwithstanding other work window restrictions), even if it means multiple construction seasons. If you cannot avoid construction during the breeding season, we generally require a 700 foot no work buffer around current year breeding bird detections though site-specific details may justify modifying this measure. ***SFCJPA Response****: Agreed*
3. **Western snowy plover**. Were western snowy plover (WSP) noted in R1, R2 and/or SF2 in recent years? If present, as a first step at minimizing effects to that species, you should strive to limit construction activities at Site B to outside of the breeding season for WSP (so limited to Sept 15-Feb 28). As above, not withstanding other work window restrictions and even if it means multiple construction seasons**.** ***SFCJPA Response****: Agreed*
4. I notice you've proposed extending the transition zone into Mosely Tract. Has that area been surveyed for WSP or CRR in recent past? ***SFCJPA Response****: At this time we are no longer proposing T-zone in Mosely Tract.*
5. **Salt marsh harvest mouse**. Salt marsh harvest mice are also likely present near Site A. As with other sensitive species, impacts to this habitat should be minimized to the extent feasible. ***SFCJPA Response****: Agreed*
6. **Impact acreage**. Did I understand correctly that Page 4 of the pre-application materials provided shows impact and proposed mitigation acreage for the entire SAFER project (Table 1)? If this is the case, though helpful, it would also be good to see a table containing only the applicable numbers for this Phase 1. ***SFCJPA Response****: We plan to prepare a programmatic EIR for the SAFER Bay project and project level for funded elements. We will provide mitigation ratios by reach and city.*
7. **Contamination**. Will there be remediation of the contaminated area that seems to extend out in Cooley Landing and/or Faber Marsh? ***SFCJPA Response****: The brownfields area will be remediated during redevelopment. The SAFER Bay project will not remediate contaminated areas.*
8. **Transition zone slope**. We appreciate the effort to reduce the amount of fill and footprint out into the tidal marsh by creating a more steep transition zone at Site A due to the value of the existing fully functional tidal marsh habitat. I'm currently in discussions with my colleagues, including those at the Don Edwards National Wildlife Refuge as to the benefits and drawbacks of

gentle transition zones in fully tidal marsh. Logistics involved with the shelter-in-pace orders, including technical challenges from mass teleworking have made coordination difficult to date, but I expect to have some feedback for you in regard to this matter by the end of March. *In an effort to provide this document in a timely fashion, we are sending it here though this particular topic requires more discussion before FWS staff can provide guidance.* ***SFCJPA Response****: Agreed, our approach is do no harm and adaptively manage area via assessment tools.*

9. **Refugial habitat assessment**. As mentioned, please consider conducting a high tide refugia habitat assessment at Site A. That should inform the need for additional refugia for CRR and salt marsh harvest mouse both now, and in light of future sea level rise, and thereby inform the transition zone slope issue. ***SFCJPA Response****: Agreed*
10. **Marsh mounds**. We encourage the retainment of small portions of the outboard levee and/or the levee separating R1 and R2 in order to minimize need for additional fill material and to provide high tide refugial habitat free of terrestrial predators. We realize this is a project element that must be carefully designed to prevent entrainment of fish and we hope it is feasible. ***SFCJPA Response****: Agreed*
11. **Site visit.** We look forward to a site visit, perhaps this Fall. ***SFCJPA Response****: Yes, to a site visit!*

State Comments:

CDFW

1. CDFW cannot issue incidental take permits for state fully-protected (FP) species. The project should be designed to avoid take for those species. Fish and Game Code Section 86 defines take as to hunt, pursue, catch, capture, or kill, or attempt to do these things. ***SFCJPA Response:*** *Agreed*
2. Species to consider for this project include, but are not limited to:
    a. California Ridgway's rail (state endangered and FP)
    b. California black rail (state threatened and FP)
    c. Salt-marsh harvest mouse (state endangered and FP)
    d. Saltmarsh wandering shrew [state species of special concern (SSC)]
    e. Longfin smelt (state threatened)
    f. Central California Coast steelhead
    g. Green sturgeon (SSC)
    h. White sturgeon (SSC)
    i. Western snowy plover (SSC)
    j. Northern harrier (SSC)
    k. Saltmarsh common yellowthroat (SSC)
    l. Alameda song sparrow (SSC)
    m. Yellow rail (SSC)
3. During the meeting I had asked about the potential to impact California black rail. It was stated that HT Harvey has a write-up on species issues, and it didn't appear that California black rail was mentioned but a rationale may have been included in the write-up. Please provide further information regarding the potential of the project to impact California black rail and if possible, provide a copy of the write up. ***SFCJPA Response****: This species is not known to breed in San*

Mateo County (rather, it has traditionally been presumed to be present in small numbers during winter), but recent increases of this species in the South Bay during the breeding season, with confirmed breeding in Alviso, suggests that this species could potentially breed in suitable habitat within the project area. We will evaluate potential impacts to California black rail, and if it is determined that the project could potentially impact breeding black rails, surveys for this species (or presumption of presence and seasonal avoidance of work near suitable habitat) will be implemented as appropriate.

4. Measures to minimize impacts to marsh species include, but are not limited to, avoiding work during the rail breeding season which is February 1-August 31; implementing a 700-foot buffer from rail habitat where possible; utilizing non-motorized hand tools if removing vegetation in habitat suitable for salt-marsh harvest mouse; avoiding the stockpiling of removed vegetation to areas well outside of the project area where they cannot be recolonized by salt-marsh harvest mice. Note that it may be possible to modify some measures to some degree depending on specific work activities and proximity of those activities to species-specific suitable habitat. ***SFCJPA Response**: Agreed*
5. Any in-water activities may impact the ST longfin smelt. CDFW recommends that the applicant seek take coverage from CDFW through a 2081(b) Incidental Take Permit. ***SFCJPA Response**: Potential for the project to result in take of longfin smelt will be evaluated, and if take may occur, the project would seek incidental take coverage.*
6. CDFW has adopted the state's no net loss wetland policy. Although the project may reduce the amount of wetland habitat at the site (resulting in a net loss), the information packet provided to the BRRIT includes proposed wetland mitigation to compensate for loss of wetland habitat. ***SFCJPA Response**: We will follow all existing requirements and seek to balance the creation of higher quality habitat for the long term.*
7. The information provided indicates that steeper T-zone slopes are proposed along Site A due to the close proximity to adjacent tidal marsh. This strategy appears to be appropriate, as the marshes in this area (Faber Marsh, Laumeister Marsh, etc.) provide well-functioning habitat that support FP species, including salt-marsh harvest mouse and California Ridgway's rail, and impacts to this habitat should be minimized to the extent feasible. ***SFCJPA Response**: Thanks*
8. Project impacts to channels (and their associated floodplain) with connections to rivers or creeks are subject to Fish and Game Code 1600 and may require a 1602 Streambed Alteration Agreement. Based on the information provided, it appears that channels impacted by this project are subject to tidal flows from the Bay, and do not appear to be connected to creek channels or subject to freshwater input. ***SFCJPA Response**: Agreed*

BCDC

We appreciate the opportunity to hear about the project and get early information on it.

1. **Fill Policies.** The Commission recently amended the San Francisco Bay Plan to allow fill for habitat projects, so long as there is a justification for the amount of fill necessary for the project. Our policies also say that specific habitats for native species should be conserved, increased, or protected, but that this protection may need to involve some fill to enhance the Bay's ecological function and ensure that they persist as sea level rises. These policies are good to keep in mind as you develop your project further. ***SFCJPA Response**: Agreed*
2. **Transition Zone Habitat Slope/Horizontal Levee.** The Commission's Bay Plan policies say that in reviewing or approving habitat restoration projects or programs the Commission should be guided by the best available science, including regional goals. Additionally, these policies say that the projects should, where appropriate, provide for a diversity of habitats for associated native aquatic and terrestrial plant and animal species. We would like to continue discussing

with you the appropriate transition slope ratios to use in the different parts (managed wetlands, tidal marsh, and non-tidal marsh) of this project. The Commission does not have an exact answer at this time as to the appropriate slope ratio in these different habitat areas, but we think that we can all discuss the site constraints, relevant science and information from other project, and goals of the project to come to a consensus on this. It would be helpful to have some of the information on the success of the transition slope ratios used in the San Francisquito Creek Project and the success of those project elements to date. ***SFCJPA Response**: The majority of creek slopes are standard levee of 3:1. Inboard and outboard sides are functioning well. A 6:1 outboard levee slope in Faber Marsh is functioning similarly to the standard 3:1 slopes. H. T. Harvey assisted the JPA with the design and post-construction monitoring of the revegetation of Faber Marsh's 6:1 outboard levee slope to improved high tide refugial habitat per the project*'s BO. The restored refugial habitat is establishing rapidly toward high quality habitat.

3. **Public Access.** There is existing public access and a segment of the Bay Trail along some portions of the Phase 1 project area, including in Site A. We would like to continue discussing ways that the project can minimize impacts to existing public access and provide the maximum feasible public access consistent with the project. ***SFCJPA Response**: Agreed*
4. **Sheet pile Wall behind Transition Zone Habitat.** We are still considering and evaluating the horizontal levee design that includes a sheet pile wall behind the transition zone habitat. The Commission staff plans to discuss this particular project element with our larger Regulatory Staff and provide additional feedback to you on our thoughts regarding this preliminary design. Ideally, marsh transition zones would lead into an upland area to allow marshes to continue to migrate as sea level rises, but we understand that there are many site constraints that make that difficult in this area of the shoreline. If you could further clarify the need for the sheet pile wall to be behind the transition zone rather than having only the horizontal levee in place, that would help further clarify the design and help in our discussion with the Regulatory Staff. ***SFCJPA Response:** In some areas we do not have the footprint area available to build stable sloped levees to our design elevation. In these areas a floodwall-levee hybrid would allow us to achieve the necessary flood protection elevation while minimizing levee footprint.The floodwall-levee hybrid provides an earthen revegetated slope on the bayward side of the floodwall. Where floodwalls are proposed adjacent to existing tidal salt marsh, the design team conceived of the floodwall-levee hybrid concept to both reduce fill in salt marsh habitat and provide created high-tide refugial habitat comparable to or better than the existing condition.*
5. **Net loss of wetland/aquatic habitat.** We understand that the project involves the restoration of the Ravenswood Ponds R1 and R2 to compensate for the project's impacts on wetland and aquatic habitats. We understand that you anticipate approximately 134 acres of mitigation will be required based upon the proposed mitigation ratios and acreages of estimated impacts in different habitat areas. As you noted in your project information, these estimates are preliminary and may change if the mitigation ratios or the acreages of impacts change. The Commission's policies do require that mitigation be provided prior to or concurrent with project impacts, so it would likely be preferred that project elements that restore habitat to offset project impacts be built early in the project. We would like to continue this conversation along with proposed phasing for the SAFER project. Our understanding is that the first phase of SAFER would include the two R1 and R2 restoration elements. ***SFCJPA Response**: Yes.*
6. **Restoration of Ravenswood Ponds R1 and R2.** Additionally, the Commission's policies on managed wetlands recognize that these areas are a unique resource for waterfowl and other wildlife, but that these areas also offer a significant opportunity for restoring tidal action to former areas of the Bay. Please see the San Francisco Bay Plan Managed Wetland Policy 3, for

some design considerations that the Commission would consider in reviewing projects that restore managed wetlands to subtidal or wetland habitat. These design considerations may help inform the decision of restoring both R1 and R2 to tidal wetland habitat or keeping some portion of these as managed ponds. There are also additional Bay Plan policies that discuss design considerations for restoration projects. Please let us know if you would like more information on relevant policies and we would be happy to provide those. ***SFCJPA Response**: Thanks, yes.*

7. **Sea Level Rise and Adaptation.** Thank you for the information that you provided at the pre-application meeting during your presentation. We understand that the goal of this project is to reduce coastal flooding for the areas located along this segment of the shoreline. The Commission's Bay Plan Climate Change and Shoreline Protection polices say that larger shoreline projects should be designed based upon a 100-year flood that takes into account the best estimates of future sea level rise, and a risk assessment may need to be prepared for this project. We recommend using the Ocean Protection Council's 2018 Sea Level Rise Guidance as the best available science for this analysis. Additionally, please consider during your design phase that projects in the Commission's jurisdiction should be at least resilient to midcentury and adaptable to end of century, depending upon the life of the project. Please contact us if you would like further information on this. ***SFCJPA Response**: We are using OPC 2018 and OPC 2020 to guide project.*
8. **Wildlife Priority Use Area.** As you are likely aware, the Site B project area is located within a Wildlife Priority Use Area in the Commission's jurisdiction. Restoration activities are consistent with the wildlife priority use, however at this time we do not have enough detail to identify whether all aspects of the project would be consistent with this use at this time. This conversation is something that we should continue to discuss as you refine the project scope and design. ***SFCJPA Response**: Agreed*
9. **Environmental Justice and Community Outreach.** Thank you for the information on community groups that you have been working with thus far to develop this project. As was mentioned during the pre-application meeting, the Commission recently adopted new polices related to Environmental Justice and Social Equity. As part of these policies, some projects are required to show that the project included meaningful community outreach and engagement, and to identify how the project may have been changed to address the requests of the community. Based upon the size of this project, it is likely that this information will be required in order for staff to make findings related to these policies. Please reach out to Commission Staff if you have specific questions at any time and we can provide you with some guidance on what entails meaningful community engagement. ***SFCJPA Response**: Agreed*
10. **Contaminated Areas.** In the project information, you described that planned and implemented remediation measures may impact the levee alignment. If this is the case and the alignment does change as the design develops, the Commission may have additional thoughts or input regarding a new levee alignment. ***SFCJPA Response**: Agreed*

Water Board

1. **Wetland Conservation Policy**. The primary goal of the State's Wetland Conservation Policy is to ensure no overall net loss and to achieve long-term net gain in the quantity, quality, and permanence of wetland acreage in California. Based on information presented so far, we anticipate that the proposed Project will meet the goals of this policy because (1) proposed mitigation will compensate for the net loss of jurisdictional area; (2) implementation of the Project will result in an environmental net benefit by restoring tidal marsh habitat, creating

valuable transitional habitat, and increasing the site's resilience to sea level rise; and (3) providing increased flood risk management. That said, the Project will need to demonstrate that impacts have been avoided and minimized to the maximum extent feasible to meet Project objectives. ***SFCJPA Response**: Agreed*

2. **Ecotone Levee.** Site-specific conditions in the Project area appear to be suitable for the inclusion of ecotone levees. As such, the Water Board supports maximizing gradual slopes on proposed ecotone levees to create a larger transition zone that will provide wildlife refugia, attenuate waves during storms, and allow for marshes to migrate as sea level rises. The final design and configuration of the ecotone levees will likely depend on logistical constraints such as the amount and availability of fill material needed and cost. ***SFCJPA Response**: Agreed, a balance of ecotone levee installation and minimization of impacts to existing marsh will need to be met.*
3. **Contaminated Sites.** Please provide me with the names of the contaminated sites and tell me which Water Board staff is assigned to each site so I can (1) get a better understanding of how planned and implemented remediation measures can affect the proposed Project and (2) coordinate as needed with other Water Board staff moving forward. ***SFCJPA Response**: Agreed-note that some are also under USEPA jurisdiction as Brownfields.*
4. **Project Design.** You will need to submit a Basis of Design Report with your permit application that provides the rationale for the Project design. As you continue to develop the Project design, please evaluate the feasibility of incorporating additional nature-based adaptation strategies identified in the *San Francisco Bay Shoreline Adaptation Atlas* such as migration space preparation within the Site A area, and beach along fortified shoreline within the Site B area. ***SFCJPA Response**: Agreed*
5. **Monitoring**. We will require monitoring to ensure the Project is functioning as designed and is meeting the Project's goals and objectives. Please submit a Monitoring Plan that describes restoration goals and objectives; proposed monitoring methods, timing, frequency, and duration; metrics to evaluate physical and biological processes; and performance criteria. If there is a potential need for future adaptive management, then the Plan should also describe potential scenarios that may require adaptive management and corrective actions that would be implemented. ***SFCJPA Response**: Agreed*
6. **Methylmercury.** San Francisco Bay is listed on the Clean Water Act 303(d) list as being impaired by mercury. As such, the Water Board adopted a TMDL for mercury that identifies wetland restoration projects as potentially contributing to a net increase in methylmercury loads to the Bay and requires restoration projects be designed to minimize methylmercury production and subsequent transfer to the food web. To implement the mercury TMDL, Waste Discharge Requirements and Water Quality Certifications issued for wetland restoration projects must include provisions requiring monitoring to demonstrate that restoration projects result in no net increase in mercury or methylmercury loads to the Bay. The Project can meet this requirement by either (1) contributing funding to the Regional Monitoring Program (RMP) to support methylmercury monitoring, or (2) develop and implement a site-specific methylmercury monitoring plan. The methylmercury monitoring plan should describe sampling methods and frequency of biosentinel monitoring. Monitoring will need to be conducted pre- and post-construction and include at least six monitoring events over a minimum ten-year period. *SFCJPA **Response:** Agreed*