410 Airport Boulevard Project
SCH #2025120519

Response to Comments + Mitigation Monitoring and Reporting Program

Prepared for:

City of Burlingame
501 Primrose Road
Burlingame, CA 94010
Contact: Ruben Hurin, Planning Manager

Prepared by:

ICF
595 Market Street, Suite 950
San Francisco, CA 94105
Contact: Devan Atteberry

June 2026

ICF. 2026. *410 Airport Boulevard Project Response to Comments + Mitigation Monitoring and Reporting Program*. June. (ICF 104707.) San Francisco, CA. Prepared for City of Burlingame, Burlingame, CA.

Contents

Chapter 1
Introduction

Overview

The key purpose of circulating an Initial Study/Mitigated Negative Declaration (IS/MND) is to collect comments on the accuracy of the information, to detect omissions, and discover public concerns (CEQA Guidelines §15073).

The City of Burlingame (City) provided two 30-day public comment periods for the IS/MND for the 410 Airport Boulevard Project (Project) beginning on December 10, 2025, and ending on January 9, 2026, and beginning on February 20, 2026, and ending on March 23, 2026. This document lists the public agencies and organizations who provided comments on the IS/MND, provides a copy of written comments received, and provides responses to those comments. As required by the California Environmental Quality Act (CEQA), these responses address comments received during the public review period (Pub. Res. Code §21091(d); CEQA Guidelines §15073) and provide responses to the comments prior to consideration of adopting the IS/MND (Pub. Res. Code §21092.5 (b)).

Minor revisions to the IS/MND were made based on the comments received and are provided in Chapter 3. The minor changes do not result in significant new information with respect to the project, including the level of significance of project impacts or any new significant impacts. Therefore, recirculation of the Draft IS/MND pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15073.5 is not required.

Comment Letters Received by the City

The City received six comment letters during the public comment periods. The City acknowledges the receipt of these comment letters and has provided responses below. This document includes responses to public comments on the IS/MND as they relate to the potential environmental impacts of the project under CEQA.

The comment letter has been assigned a letter. Individual comments from each letter are identified by a number that corresponds to the comment letter and individual comment within that letter. For example, letter A, comment 1, is addressed in Response A-1. A copy of the comment letter is provided after the responses to individual comments.

Comment letter A was provided by the California Department of Transportation (Caltrans) and was dated January 8, 2026. Comment letter B was provided by the California Department of Fish and Wildlife (CDFW) and was dated January 8, 2026. Comment letters C and D were provided by Pacific Gas and Electric Company (PG&E) and were dated March 2, 2026, and March 6, 2026. Comment letter E was provided the Federal Aviation Administration and was dated March 23, 2026. Comment letter F was provided by OneShoreline and was dated March 23, 2026.

Chapter 2
Response to Comments

Comment Letter A. California Department of Transportation

California Department of Transportation

DISTRICT 4
OFFICE OF REGIONAL AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

RECEIVED
JAN 08, 2026
CITY OF BURLINGAME
CDD-PLANNING DIVISION

January 8, 2026

SCH #: 2025120519
GTS #: 04-SM-2025-00755
GTS ID: 38752
Co/Rt/Pm: SM/101/15.342

Ruben Hurin, Planning Manager
City of Burlingame
501 Primrose Road
Burlingame, CA 94010

Re: Bay Rise Park Project – Draft Initial Study/Mitigated Negative Declaration (IS/MND)

Dear Ruben Hurin:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Bay Rise Park Project. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities. The following comments are based on our review of the December 2025 Draft IS/MND.

Please note this correspondence does not indicate an official position or approval by Caltrans on this project and is for informational purposes only.

Project Understanding

A1 The proposed project would develop a new park on a vacant and undeveloped 10.2-acre site along the San Francisco Bay shoreline that is located within a mile of U.S. Route 101 (U.S. 101). Construction of an education center/event building, a drop-off loop and on-site parking lot with 29 spaces, and other recreational amenities are proposed. The project also proposes restoration of natural tidal-marsh ecology of the portion of the Bay shoreline within the project site as well as improvement of the section of the Bay Trail on the project site.

Aeronautics

A2 The proposed project site is located within two miles of the San Francisco International Airport (SFO) and is therefore within the airport's influence area. Recreational open space, trails, and passive park uses are generally compatible with airport operations and do not introduce new noise-sensitive residential uses. However, the proposed education center/event building, access ramps, parking areas, and potential water-

related activities warrant coordination with applicable Airport Land Use Compatibility Plan (ALUCP) policies to ensure consistency with height, safety, and operational considerations.

A2 Cont.

From an aviation safety perspective, the project should confirm that all permanent structures, temporary construction equipment (including cranes), and future vegetation will not penetrate protected airspace surfaces and will be subject to Federal Aviation Administration (FAA) airspace review as applicable. Exterior lighting should be designed to minimize glare or distraction to pilots, consistent with spill-prevention and shielding standards. In addition, given the site's proximity to the Bay and proposed water-access and restoration elements, the project should continue to avoid features that could substantially increase bird or wildlife activity that may pose a hazard to aircraft operating at SFO.

A3

Construction-Related Impacts
Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, please visit Caltrans Transportation Permits (*link*).

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Luana Chen, Associate Transportation Planner, via LDR-D4@dot.ca.gov. For future early coordination opportunities or project referrals, please visit Caltrans LDR website (*link*) or contact LDR-D4@dot.ca.gov.

Sincerely,

YUNSHENG LUO
Branch Chief, Local Development Review
Office of Regional and Community Planning

c: State Clearinghouse

Response A-1

The commenter expresses their understanding of the Project and its proposed components.

Comment noted. The comment does not contain questions or concerns regarding the adequacy of the Draft IS/MND analysis. No revisions to the Draft IS/MND are required.

Response A-2

The commenter discusses measures related to the project's location within the San Francisco International Airport's (SFO) Airport Influence Area (AIA) and states that coordination with Airport Land Use Compatibility Plan policies is required for consistency with height, safety, and operational considerations. The commenter requests confirmation that project structures will not penetrate protected airspace surface and will be subject to Federal Aviation Administration review. It also requests that the project avoid features that attract birds and wildlife that pose a hazard to aircraft operations.

The Draft IS/MND acknowledges that the project site is in AIA B of the SFO ALUCP on page 3.9-3. As described on page 2-4 of the Draft IS/MND, the AA zoning district allows for building heights of 40 feet within 100 feet of the Bay shoreline and 65 feet outside of that area. The proposed education center/event building would have a height of approximately 34 feet, and could be up to 35 feet above adjacent grade, which would be raised to approximately 18' NAVD88. Page 3.9-7 of the IS/MND has been clarified as follows:

> In October 2023, the City/County Association of Governments (C/CAG), acting as the San Mateo County Airport Land Use Commission, determined that Burlingame's Zoning Ordinance Update is conditionally consistent with the ALUCP. Furthermore, modifications to the Zoning Code, as required by C/CAG, have been included with a Zoning Ordinance Update in 2026. Thus, the Project, consistent with the 2040 General Plan land use and zoning designation, requires no additional determination from C/CAG. In addition, the Project site does not fall within any of the safety compatibility zones (as depicted in Exhibit IV-7 of the SFO ALUCP) and, therefore, is not within an area of potential danger involving operations at SFO. Therefore, the Project would not result in a safety hazard or excessive noise for people in the Project area, and impacts would be ***less than significant***.

As noted on page 2-16 of the IS/MND and reiterated in Comment E-1, the project sponsor is required to file Form 7460-1 for proposed structures (e.g., buildings and trees) and construction equipment, pursuant to 14 CFR Part 77. The 7460-1 must be filed at least 45 days prior to the start of construction. The project must receive a determination of "no hazard to air navigation" from the FAA to proceed with construction.

Regarding hazards to pilots from exterior lighting, the project would comply with ALUCP Policy AP-4 and project conditions of approval to ensure that no building features would use highly reflective materials with the potential to interfere with the vision of pilots at SFO. Further, all lighting would comply with Title 24, CALGreen outdoor lighting requirements for non-residential occupancies.

Regarding wildlife attractants, the FAA identifies activities such as agriculture, landfills, or large waterbodies as potential wildlife attractants and cautions that considerations should be given as to whether a proposed land use would increase wildlife hazards. For airports serving turbine-powered aircraft (such as SFO), FAA Advisory Circular (AC) 150/5200-33C, *Hazardous Wildlife*

Attractants on or near Airports, recommends a 10,000-foot (1.89-mile) separation distance between hazardous wildlife attractants and the nearest airport operations area. FAA AC 150/5200-33C provides guidance on land uses that have the potential to attract wildlife within the 10,000-foot radius of an airport to protect approach, departure and circling airspace, and encourages review of proposed landscape plans by Qualified Airport Wildlife Biologists, as defined in FAA Advisory Circular 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*. The project site is approximately 1.6 miles from SFO Runway 28L. As a project condition of approval, in accordance with FAA AC 150/5200-33C, a Qualified Airport Wildlife Biologist will evaluate the project's landscape plan to ensure that the proposed landscaping features will not attract hazardous wildlife that could pose a threat to aviation safety. The project sponsor will also notify SFO to review plans for attractiveness to hazardous wildlife.

Response A-3

The commenter notes that projects requiring movement of oversized or excessive load vehicles on State roadways require a Caltrans transportation permit.

This comment is noted. Appropriate permits will be obtained based on construction needs and planning for the project.

Comment Letter B. California Department of Fish and Wildlife

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Marine Region
1933 Cliff Drive, Suite 9
Santa Barbara, CA 93109
wildlife.ca.gov

GAVIN NEWSOM, Governor
VALERIE TERMINI, Acting Director

RECEIVED
JAN 08, 2026
CITY OF BURLINGAME
CDD-PLANNING DIVISION

January 8, 2026

Ruben Hurin, Planning Manager
City of Burlingame
501 Primrose Road
Burlingame, CA 94010
rhurin@burlingame.org

Dear Ruben Hurin:

410 AIRPORT BOULEVARD PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
SCH # 2025120519

The California Department of Fish and Wildlife (Department) received an Initial Study/Mitigated Negative Declaration (ISMND) from the City of Burlingame for the 410 Airport Boulevard Project (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that the Department, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

DEPARTMENT ROLE

The Department is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the state. (Fish & Game Code, § 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines §15386, subd. (a).) The Department, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly for purposes of CEQA, the Department is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources. The Department is also responsible for marine biodiversity protection under the Marine Life Protection Act in coastal marine waters of California, and ensuring fisheries are sustainably managed under the Marine Life Management Act.

[1] CEQA is codified in the California Public Resources Code in § 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with § 15000.

The Department is also submitting comments as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). The Department expects that it may need to exercise regulatory authority pursuant to the Fish and Game Code. As proposed the Project will be subject to the Department's lake and streambed alteration regulatory authority (Fish & Game Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in take[2] as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

PROJECT DESCRIPTION SUMMARY

Proponent: The SPHERE Institute

Objective: The objective of the Project is to redevelop approximately 10.2 acres of vacant and undeveloped land in the Bayfront area of Burlingame for the Bay Rise Park Project. The Project would add several features including restoration of natural tidal marsh, improve shoreline protection, improve the Bay Trail on the Project site, and facilitate water access and recreation with ramps for kayaking and board sailing.

Location: The Project is located on a 10.2 acre lot in the northeastern portal of Burlingame between Highway 101 and San Francisco Bay (37°35'28.5"N 122°20'25.6"W).

MARINE BIOLOGICAL SIGNIFICANCE

The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles, including shallow mudflats. This ecologically significant ecosystem supports both state and federally threatened and endangered species and sustains important commercial and recreational fisheries.

STATE AND FEDERALLY LISTED AND COMMERCIALLY/RECREATIONALLY IMPORTANT SPECIES

Protected species under the State and Federal Endangered Species Acts that could potentially be present near Project activities include:

- Longfin smelt (*Spirinchus thaleichthys*), state-threatened
- Chinook salmon (*Oncorhynchus tshawytscha*), state and federally threatened (Central Valley Spring-run), state and federally endangered (Sacramento

[2] Take is defined by Fish and Game Code Section 86 as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

River Winter-run), state species of special concern (Central Valley Late Fall Run, Central Valley Fall Run)
- Steelhead (*Oncorhynchus mykiss*), federally threatened (Central California Coast evolutionary significant units)
- Green sturgeon (*Acipenser medirostris)*, federal threatened (Southern Distinct Population Segment)
- White sturgeon (*Acipenser transmontanus)*, state candidate species
- Pacific lamprey (*Entosphenus tridentatus*), state species of special concern
- California Least tern (*Sternula antillarum browni),* state and federally endangered, state fully protected

Several species with important commercial/recreational fisheries value and habitat value for spawning and rearing could potentially be present near Project activities including: Pacific herring (*Clupea pallasii*), eelgrass (*Zostera marina),* surfperches (*Embiotocidae*), rockfish (*Sebastes spp*.), California halibut (*Paralichthys californicus),* and Dungeness crab *(Metacarcinus magister).*

COMMENTS AND RECOMMENDATIONS

The Department offers the following comments and recommendations to assist the City of Burlingame in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources.

White Sturgeon

Comment: The Department received a petition to list white sturgeon as threatened under CESA on November 29, 2023 and it was declared a candidate species in June 2024. As a candidate species, white sturgeon are afforded the same protection as CESA listed species as the Department conducts its review of the species status.

B1

Although white sturgeon were discussed in Appendix B (Biological Resources Report), white sturgeon are not discussed within the text of the ISMND, other than a statement regarding artificial lighting. There is no evaluation of potential impacts to the species from other project activities like pile driving and fish relocation.

Recommendations: The Department recommends that potential project-related impacts to white sturgeon are analyzed within the ISMND to determine whether take may occur and the extent of any potential take for all CESA listed species.

Mitigation Measure BIO-6: Fish Relocation

B2

Comment: Mitigation Measure (MM) BIO-6 discusses the potential for fish relocation if fish are trapped behind turbidity curtains. The plan proposes to have a qualified biologist relocate fish using seine nets, dipnets, or other methods. Department

B2 Cont.

approval is necessary for approved qualified biologists to capture, handle, and/or relocate fish within the marine environment (Fish and Game Code, §§ 1002, 6400). For non CESA listed species, a Scientific Collection Permit is necessary and can be applied for online through the Department's Scientific Collecting Permit Portal (https://scpapp.wildlife.ca.gov). For the capture, handling, and/or relocation of CESA listed species, a CESA memorandum of understanding (MOU) would not be an appropriate permitting method as discussed within MM BIO-6. If CESA listed species are expected to be encountered during fish relocation efforts, a 2081(b) Incidental Take Permit (ITP) would be necessary to cover the potential take of these species.

Recommendation: The Department recommends the SPHERE Institute consult with the Department and obtain a Scientific Collection Permit to authorize handling of fish or for fish relocations activities.

Recommendation: The Department recommends that MM BIO-6 remove "CESA MOU" from the potential permitting option and replace with "CESA ITP" for take of any CESA listed species during fish relocation activities.

Hydroacoustic Impacts and Mitigation Measures

B3

Comment: Within the Biological Resources section of the ISMND, acoustic impacts from pile driving are analyzed. The ISMND does not present specific hydroacoustic numbers but estimates based on other similar projects where the referenced Hydroacoustic Fish Working Group Interim Criteria for injury to fish thresholds were exceeded. Although the peak sound pressure of 206 decibels (dB) is only estimated to be exceeded by tens of feet from the source, the cumulative sound exposure levels (SEL) could be exceeded over thousands of feet based on these same estimates. Although direct mortality is not expected with the cumulative SEL zones, the cumulative SEL may result in injury or behavior changes in fish, which may lead to mortality. The ISMND acknowledges that CESA listed species could be present within this area and impacts may occur as a result of the cumulative SEL. The impacts from Project-related sound generating activities to longfin smelt, chinook salmon, and white sturgeon may reach the extent of take and would only be authorized by the Department with an ITP.

Recommendation: The Department recommends that if hydroacoustic analysis indicates the potential exceedances of the specified hydroacoustic thresholds, the SPHERE Institute consults with the Department and obtains an ITP to authorize potential take of CESA listed species.

Recommendation: The Department recommends that MM BIO-9 include consultation with the Department regarding potential take of CESA listed species from Project-related sound generating activities.

Comment: MM BIO-9 discusses noise impact minimization measures proposed during pile driving activities. Measure 5 specifies that bubble curtains shall be implemented and will reduce noise up to 15 dB. The *Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish* (California Department of Transportation 2020) suggests 10 dB of sound attenuation is the maximum attenuation that should be estimated.

Recommendation: The Department recommends that measure 5 in MM BIO-9 be revised to the following:

B4

> "Bubble curtains shall be used during any impact pile driving in water. The bubble curtain ~~will~~ **may** reduce the noise levels by up to ~~15 dB~~ **10 dB.** The bubble curtain shall be operated in a manner consistent with the following performance standards:"

Comment: MM BIO-9 does not include a measure to drive piles at low tide. Driving piles in the dry or areas that are dewatered during low tides could further minimize and avoid impacts to aquatic species by conducting the pile driving activities when aquatic species are not physically present or further removed from the sound source.

Recommendation: The Department recommends MM BIO-9 include a minimization measure to drive piles in the dry and/or at low tide to the maximum extent feasible.

Rock Slope Protection

Comment: The proposed installation of living shoreline features and placement of new hard substrate will require a Scientific Collection Permit from the Department if the activities include the placement, transport, or relocation of existing rock and concrete with living marine organisms attached (e.g., macroalgae and aquatic invertebrates) within the waters of the state (Fish and Game Code § 6400).

B5

Recommendation: The Department recommends the SPHERE Institute consult with the Department and obtain a Scientific Collection Permit to authorize transport or relocation of living organisms for the proposed rock slope protection.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database that may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/SubmittingData#44524420-pdf-field-survey-form.

The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by the Department. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & Game Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

The Department appreciates the opportunity to comment on the ISMND to assist the City of Burlingame in identifying and mitigating Project impacts on biological resources. Questions regarding this letter or further coordination should be directed Arn Aarreberg, Environmental Scientist, at (707) 791-4195 or R7CEQA@wildlife.ca.gov.

Sincerely,

Craig Shuman, D. Env
Marine Regional Manager

ec: Claire Waggoner, Environmental Program Manager
Department of Fish and Wildlife

Eric Wilkins, Senior Environmental Scientist
Department of Fish and Wildlife

Tami Schane, Senior Environmental Scientist
Department of Fish and Wildlife

Arn Aarreberg, Environmental Scientist
Department of Fish and Wildlife

Agnes Farres
San Francisco District Regional Water Quality Control Board

Schuyler Olsson
San Francisco Bay Conservation and Development Commission

Habitat Conservation Program Branch CEQA Program Coordinator
California Department of Fish and Wildlife

State Clearinghouse (SCH # 2025120519)

REFERENCES

California Department of Transportation. 2020. Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/hydroacoustic-manual-a11y.pdf

Response B-1

The commenter states that white sturgeon is a candidate species under CESA and afforded the same protection as CESA listed species. The commenter further states that potential impacts on the species from construction activities have not been evaluated in the IS/MND, although they acknowledge that white sturgeon is discussed in Appendix B (Biological Resources Report). The commenter recommends that potential project-related impacts to white sturgeon be analyzed in the IS/MND to determine whether take may occur and the extent of any potential take for all CESA listed species.

As noted on page 3.4-2 of the IS/MND, the analysis in Section IV, Biological Resources, is based on the biological resources report prepared by H. T. Harvey on December 3, 2024, which was included in Appendix B of the IS/MND. As the commenter notes, impacts to white sturgeon are evaluated in Appendix B of the IS/MND. The omission of discussion of white sturgeon in the IS/MND was an editorial error. The Draft IS/MND has been revised to clarify that white sturgeon is accounted for in the analysis, consistent with Appendix B.

Page 3.4-9 of the IS/MND has been revised as follows:

> No suitable aquatic habitat that would support special-status fish and marine mammal species is present in the terrestrial portions of the Project site. However, the open waters of San Francisco Bay and Sanchez Creek immediately adjacent to the Project site (e.g., within areas where Project activities would occur within tidal waters) provide potential foraging habitat for Central California coast steelhead, green sturgeon (*Acipenser medirostris*), white sturgeon (*Acipenser transmontanus),* longfin smelt (*Spirinchus thaleichthys*), Pacific lamprey (*Entosphenus tridentatus*), Central Valley fall-run Chinook salmon, California sea lion, and Pacific harbor seal. San Francisco Bay is also designated as critical habitat for Central California coast steelhead (70 FR 52488, September 2, 2005), the southern distinct population segment [DPS] of North American green sturgeon (74 FR 52299, October 9, 2009), and EFH for coastal pelagic, Pacific groundfish, and Pacific salmon fisheries.

These revisions do not warrant recirculation of the Draft IS/MND under CEQA as no new impacts or mitigation would be required compared to what was included in Appendix B, which was available for public review along with the IS/MND.

Response B-2

The commenter states that a CDFW Scientific Collecting Permit (SCP) is necessary to collect non-CESA listed species and a 2081 (b) Incidental Take Permit (ITP), and not a CESA memorandum of understanding (MOU) as described in Mitigation Measure BIO-6, would be necessary to cover potential take of CESA-listed species. The commenter recommends that a SCP be obtained to authorize handling of fish related to fish relocation activities and that Mitigation Measure BIO-6 be revised to remove "CESA MOU" from the potential permitting option and replace it with "CESA ITP" for take of any CESA-listed species during fish relocation activities.

Mitigation Measure BIO-6 came from H. T. Harvey's Biological Resources Report, dated December 3, 2024, and included as Appendix B in the IS/MND. Through subsequent discussions between H. T. Harvey and the San Francisco Bay Restoration Regulatory Integration Team (BRRIT), it was agreed that block nets and turbidity curtains would be used to ensure fish are excluded from the work area prior to in-water construction, and no relocation will be necessary. With relocation removed from

planned activities, the handling of fish would not occur and thus neither a CDFW SCP nor an ITP should be required. The Draft IS/MND has been revised to clarify this change from the Biological Resources Report, consistent with H. T. Harvey's Biological Assessment dated June 16, 2025, and included as Appendix A.

Pages 3.4-12 and 3.4-13 of the IS/MND have been revised as follows:

> In-water construction may result in direct physical injury or mortality to fish ~~from activities, including pile driving, coffer dam installation, and coffer dam dewaters (i.e., fish stranding or entrainment into pumps during dewatering)~~, primarily from pile driving activities. Installation of piles or placement of riprap (i.e., for the northwestern shoreline repairs) could result in fish being crushed, although that risk would be expected to be low, based on the limited spatial extent of the work, fish exclusion methods, and the high probability of fish avoiding such activities. Displacement of fish away from habitat near construction activities ~~seems like~~ is the most likely adverse effect. Fish and other aquatic species may also be injured or killed due to acoustic effects associated with impact pile driving; this potential impact is further described below. ~~Fish entrapped in construction areas enclosed by turbidity curtains and coffer dams that are subsequently dewatered would die without fish rescue activities, although the number of fish being trapped in such areas would be low relative to the number of fish throughout the species' range. Fish that are rescued from coffer dams prior to or during dewatering could be injured and killed during rescue activities or as a result of handling.~~ The potential for impact from fish entrapment will be avoided by the use of block nets and turbidity curtains: in-water construction will be initiated at low tide, prior to which qualified biologists shall use a block net to encourage fish to leave the work area. Temporary turbidity curtains installed at low tide will maintain fish exclusion prior to coffer dam installation and dewatering activities. Fish shall be excluded from the work area prior to in-water work, thus relocation and handling of fish is not anticipated and any associated impacts are avoided. Mitigation Measures BIO-3, BIO-4, and BIO-5~~, and BIO-6~~ would avoid or minimize the potential for direct physical injury and mortality for fish. Implementation of these mitigation measures would ensure the protection of State and federally listed fish and other special-status fish species by restricting in-water construction to periods when special-status fish are ~~absent or their abundance is relatively low~~ unlikely to be present; moving fish away from areas where they could be harmed; ~~rescuing stranded fish in coffer dams by following standard fish herding, collecting, handling, and relocation protocols;~~ and requiring that pumps used to dewater coffer dams be screened according to CDFW and NMFS screening guidelines for pumps. Therefore, this impact is ***less than significant with mitigation***.

Additionally, Mitigation Measure BIO-4 on page 3.4-13 of the IS/MND has been revised as follows:

> Fish shall be excluded from the work area prior to in-water work. Construction of the water rescue/kayak ramp, kitesurfing ramp, and tidal inlet will be initiated at low tide. Prior to initiating work, qualified biologists shall use a block net to encourage fish to leave the work area. The net will be moved from the shore and out and away from the work area. Once fish have moved out of the area, the turbidity curtains will be installed around the work area. The turbidity curtains will be removed after sediments have settled and the work is completed. Relocation of fish is not anticipated and will not be required for in-water construction activities.

Furthermore, Mitigation Measure BIO-6 on page 3.4-14 of the IS/MND has been removed as follows:

~~**Mitigation Measure BIO-6: Fish Relocation**~~

~~If fish cannot be excluded entirely from areas where turbidity curtains shall be employed, qualified biologists shall relocate the remaining fish outside the work area using seine nets, dip nets, or other means. The method of relocation shall be determined by the qualified biologist, in consultation with NMFS (and CDFW as necessary) and consistent with methods described in the *California Salmonid Stream Habitat Restoration Manual,* fourth edition,[1] and *NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects*,[2] based on site conditions and species present. A Fish Rescue and Relocation Plan shall be prepared and shall provide at a minimum the following items:~~

- ~~Qualifications of the fish rescue team: only fisheries biologists who are approved by the U.S. Fish and Wildlife Service (USFWS) and NMFS and permitted by CDFW under a CESA memorandum of understanding (MOU) shall handle and relocate CESA-listed species.~~
    - ~~Schedule and description of proposed fish relocation techniques.~~
- ~~Measures implemented to minimize injury and mortality of listed species and other native aquatic species during fish relocation and dewatering activities, as described in Volume II Part IX, pages 52 and 53, of the *California Salmonid Stream Habitat Restoration Manual.*~~
    - ~~Timeline of data availability and reporting requirements to NMFS, CDFW, and USFWS.~~

~~The Fish Rescue and Relocation Plan shall be submitted to CDFW, NMFS, and USFWS for review and approval no later than 60 days prior to conducting in-water work, or as specified in permit conditions. Fish exclusion due to turbidity curtains and relocation shall be confirmed prior to any in-water construction, including installation of sheet piles/coffer dams and steel pipe piles.~~

Response B-3

The commenter states that the impacts from Project-related sound generating activities to longfin smelt, Chinook salmon, and white sturgeon may reach the extent of take and would only be authorized by CDFW with an ITP. The commenter recommends that the project proponent consult with CDFW and obtain an ITP to authorize potential take of CESA listed species and that Mitigation Measure BIO-9 be revised to include consultation with CDFW regarding potential take of CESA-listed species from Project-related sound generating activities.

Construction of Bay Rise Park would occur between June 1 and November 30. Longfin smelt use the San Francisco estuary year-round, and juvenile longfin smelt (>2 grams [g]) may be present in the action area during the in-water construction window. However, studies have shown that juvenile longfin smelt are more likely to use deep water channels in South San Francisco Bay, and are

[1] Flosi, G., S. Downie, J. Hopelain, M. Bird, R. Coey, and B. Collins. 2010. *California Salmonid Stream Habitat Restoration Manual.* Fourth edition. California Department of Fish and Game, Wildlife and Fisheries Division.

[2] Pecharich, J. 2017. *NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects*. March. NMFS, Santa Rosa, CA.

uncommon on shoals shallower than 7 meters (m).[3,4] White sturgeon occur in the San Francisco Bay year-round; adults return to the estuary from upstream spawning locations in mid- to late-spring. White sturgeon may be present in the open channels of South San Francisco Bay, adjacent to the project site. This species tends to congregate in deep areas with fine-sediment substrate and is thought to move into shallow subtidal habitats to feed during high tides.[5] Central Valley fall-run Chinook salmon may occasionally forage within the aquatic portions of the project site, albeit infrequently and in low numbers given the shallow nature of aquatic habitats within the project area.

An analysis of potential noise impacts from pile driving was conducted using unattenuated sound data provided by Molnar et al. (2020) and the NMFS (2022) pile driving noise calculation model.[6,7] According to the model, assuming one pile driven per day, the 187 decibels (dB) threshold for fish ≥2 g would be met at 20.6 m for in-water piles with attenuation, and 69.8 m for land-based piles. Impact hammer operations will be shut down if the cumulative SEL reaches 186.5 dB at 10 m from the piling, which is below the sound threshold for fish that weigh ≥2 g; installation of coffer dams/sheet piles prior to pile driving activities will further exclude fish from the impact area during in-water work.

Notably, pile driving will only be performed at low tide. The area on the Bay side of the project site consists of a shallow, mostly subtidal mudflat, gradually increasing in depth with distance from shore. Within the calculated footprints of elevated sound exposure levels causing physical injury, California Department of Water Resources bathymetry maps show a maximum water depth of 0.4 m at low tide.[8] Due to the shallow nature of the action area during low tide pile driving, longfin smelt, white sturgeon, and Chinook salmon are unlikely to be impacted by elevated sound levels during construction activities.

Conversations with the BRRIT and CDFW staff on December 11, 2024, and January 23, 2025, confirmed that without relocation, impacts to special-status fish would not reach the level of take.

Response B-4

The commenter is suggesting that 10 dB of sound attenuation, and not 15 dB as mentioned in MM BIO-9, should be the maximum attenuation that should be estimated for bubble curtains. The commenter is also recommending that MM BIO-9 include a minimization measure to drive piles in the dry and/or at low tide to further minimize and avoid impacts on aquatic species.

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3 Interagency Ecological Program for the San Francisco Estuary. 2022. Electronic data accessed from iep.ca.gov/Data/IEP-Survey-Data. Central Valley Bay – Delta Branch, California Department of Fish and Wildlife, Stockton, California.

4 Rosenfield, J. A., and R. D. Baxter. 2007. *Population dynamics and distribution patterns of longfin smelt in the San Francisco Estuar*y. Transactions of the American Fisheries Society. 136:1577–1592.

5 Moyle, P. B. 2022*. Inland Fishes of California*. University of California Press, Berkeley.

6 Molnar, M., D. Buehler, R. Oestman, J. Reyff, K. Pommerenck, and B. Mitchell. 2020. *Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish*. October. CTHWANP-RT-20-365.01.04. Sacramento, California. Prepared by the California Department of Transportation, Division of Environmental Analysis.

7 National Marine Fisheries Service. 2022. *Pile Driving Noise Calculations*. Developed by NOAA Fisheries Southwest and Northwest regions.

8 California Department of Water Resources. 2026. *San Francisco Bay and Sacramento-San Joaquin Delta DEM for Modeling, Version 4.3*. Available: https://data.ca.gov/dataset/san-francisco-bay-and-sacramento-san-joaquin-delta-dem-for-modeling-version-4-3. Accessed May 2026.

Although up to 15 dB of sound attenuation has been estimated for bubble curtains, the hydroacoustic assessment presented in H. T. Harvey's Biological Assessment (June 16, 2025) used a conservative attenuation level of 5 dB. Estimated sound levels will be calculated using this conservative value.

Mitigation Measure BIO-8~~9~~: Noise Impact Minimization has been revised as follows:

5. Bubble curtains shall be used during any impact pile driving in water. The bubble curtain ~~will~~ may reduce the noise levels by up to 15 dB; however, a more conservative estimate of 5 dB of sound attenuation will be used for any hydroacoustic analyses throughout the permitting process. The bubble curtain shall be operated in a manner consistent with the following performance standards:

7. Pile driving shall occur only during daylight hours and will be performed at low tide and within the coffer dam/sheet pile-isolated work area.

Response B-5

The commenter states that the proposed installation of living shoreline features and placement of new hard substrate will require a Scientific Collection Permit from CDFW if the activities include the placement, transport, or relocation of existing rock and concrete with living marine organisms attached (e.g., macroalgae and aquatic invertebrates) within the waters of the state (Fish and Game Code § 6400).

The list of project approvals on page 2-15 of the IS/MND has been revised as follows:

- California Department of Fish and Wildlife – Streambed Alteration Agreement and Scientific Collection Permit.

Comment Letter C. Pacific Gas & Electric Company

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

March 2, 2026

Ruben Hurin
Planning Manager
501 Primrose Road
Burlingame, CA 94010

Ref: Gas and Electric Transmission and Distribution

Dear Ruben Hurin,

Thank you for submitting the **Bay Rise Park** project plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

C1

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en/account/service-requests/building-and-renovation.html.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 24 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 24 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 24 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line ‘kicker blocks’, storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E’s ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4’) in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E’s facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING."**

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), plant only low-growing shrubs under the wire zone and only grasses within the area directly below the tower. Along the border of the transmission line right-of-way, plant only small trees no taller than 10 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

Response C-1

The commenter confirms PG&E's review of the project plans in relationship to any existing gas and electric facilities within the project area, and includes information and requirements related to gas and electric facilities.

This comment is noted. The project will comply with applicable PG&E requirements.

Comment Letter D. Pacific Gas & Electric Company

Pacific Gas and Electric Company
Kevin Wun
Land Management
San Jose, CA 95113

March 6, 2026

Ruben Hurin, Planning Manager
City of Burlingame - Community Development Department, Planning Division
501 Primrose Road, Burlingame, CA 94010-3997

Re: CEQA Document Publication - Bay Rise Park Project - 410 Airport Boulevard, Burlingame, CA, 410 Airport Blvd., Burlingame, CA 94010

Dear Ruben,

Thank you for providing PG&E the opportunity to review the proposed Bay Rise Park Project, 410 Airport Blvd_ISMND, dated December 2025, as attached. Our review indicates your proposed Bay Rise Park Project does not appear to directly interfere with existing PG&E facilities or impact our easement rights and per the document 410 Airport Blvd_ISMND that states on page 2-9, on-site utilities would be served by existing electric energy and PGE facilities will in the vicinity will continue to serve the site.

We have no objections to the proposed Bay Rise Park Project as shown on the attached as it appears the development will continue to be served from the Public Right of Way directly to the site. Please keep in mind if we determine the developments are prohibiting us access to our facilities or the easement in any way in the future, we have the rights to ask you to remove it and without compensation. D1

Please note this is our preliminary review and PG&E reserves the right for additional future review as needed. This letter shall not in any way alter, modify, or terminate any provision of any existing easement rights. If there are subsequent modifications made to your design, we ask that you resubmit the plans to the email address listed below.

If you require PG&E gas or electrical service in the future, please continue to work with PG&E's Service Planning department: https://www.pge.com/cco/. As a reminder, before any digging or excavation occurs, please contact Underground Service Alert (USA) by dialing 811 a minimum of 2 working days prior to commencing any work. This free and independent service will ensure that all existing underground utilities are identified and marked on-site.

If you have any questions regarding our response, please contact the me at Kevin.Wun@PGE.com.

Sincerely,

Kevin Wun
Land Management

Attached: 410 Airport Blvd_ISMND, 410 Airport Blvd_ NOI_02202026

Response D-1

The commenter confirms PG&E's review of the Draft IS/MND, and confirms that the project does not appear to directly interfere with existing PG&E facilities or impact PG&E easements.

This comment is noted. The project will comply with applicable PG&E requirements.

Comment Letter E. Federal Aviation Administration

U.S. Department
of Transportation
**Federal Aviation
Administration**

Airports Division
Western-Pacific Region
San Francisco Airports District Office

2999 Oak Road, Suite 200
Walnut Creek, CA 94597

March 23, 2026

Mr. Ruben Hurin
City of Burlingame
Community Development Department, Planning Division
501 Primrose Road
Burlingame, CA 94010-3997

via email: rhurin@burlingame.org

Subject: Notice of Intent to Adopt a Mitigated Negative Declaration Comments: Bay Rise Park Project

Dear Mr. Hurin:

Thank you for the opportunity to review and comment on the City of Burlingame's Notice of Intent to Adopt a Mitigated Negative Declaration (MND) issued on February 20, 2026 for the proposed Bay Rise Park Project (Project) located at 410 Airport Boulevard, Burlingame, CA. The proposed project would redevelop approximately 10.2 acres of parcels in the Bayfront area for the Bay Rise Park Project, including an 8,600 square foot education center/event building, 29 parking spaces, restoration of a tidal marsh, improvements to the Bay Trail, improvements to water access and recreation, new viewing decks, a small café, multi- purpose and lawn areas, interpretive elements related to sea level rise resiliency. The project would also include an equipment storage building for the Central County Fire Department and a 12- by 20-foot trash enclosure. The current land uses consist of undeveloped land, vacant parcels, land with a Federal Aviation Administration (FAA) tower, a portion of the San Francisco Bay Trail, and two parking surfaces. The existing FAA tower is a 60-foot Low Level Wind Shear Alert System (LLWAS) and would remain in place as part of FAA's ground-based system that detects wind shear on and around the runways at San Franisco International Airport (SFO) to protect aircraft and the flying public during take-off and landing.

The Project is located on approximately 10.2 acres situated approximately 1.5 miles southeast of SFO. SFO is a Commercial Service - Large Hub airport within the FAA's National Plan of Integrated Airport Systems (NPIAS). The airport and surrounding property are owned and operated by the City and County of San Francisco. SFO primary operations use Runways 28L and 28R for landing and Runways 01R and 01L for departures.

FAA's mission is to provide the safest and most efficient aerospace system in the world. We offer the following comments in support of this mission.

Airspace

E1 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, governs the FAA's review of proposed construction exceeding certain height limits, defines airspace obstruction criteria, and provides for FAA aeronautical studies of proposed construction. Projects that have the potential to affect navigable airspace as defined in 14 CFR § 77.9 must file a Notice of Proposed Construction or Alteration (Form 7460-1) with the FAA. The MND states the proposed Project includes the construction of a building with a top height of 49 feet, 8 ¾ inches and planting of 80 new trees. Obstacles within 1,000 feet of

the LLWAS should have a height difference of 40-feet above obstructions to allow the equipment to take accurate measurements of wind speed.

E1 Cont.

The Project sponsor must file Form 7460-1 for proposed structures (e.g., buildings and trees) and for construction equipment. The 7460-1 must be filed at least 45 days prior to the start of construction. FAA acknowledges the "Project Approvals" section of the MND references an FAA Determination of "no hazard to air navigation" that is obtained through submittal and review of Form 7460-1. Information about the Obstruction Evaluation/Airport Airspace Analysis process and the Form 7460-1 are available at https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

Wildlife hazards

The majority of aircraft related bird strikes occur on approach to Runways 28L and 28R and departure from Runways 10L and 10R, which is consistent with the tidal nature of the bay in these areas. *FAA Advisory Circular (AC) 150/5200-33C, Hazardous Wildlife Attractants on or near Airports*, provides general separation criteria and recommended procedures for off-airport wildlife attractants. For SFO, FAA recommends a 10,000-foot separation distance from the nearest aircraft movement areas for any hazardous wildlife attractants (See Section 1.3 and Chapter 2).

E2

The proposed project lies within 10,000 feet of SFO. The restoration of the tidal marsh, construction of flat rooftops and other structures, and addition of up to 80 new trees could attract more birds to the project site, which could in turn increase the potential for aircraft-involved bird strikes due to the project site's proximity to SFO. The following sections of *AC 150/5200-33C* provide guidance on land uses that have the potential to attract wildlife and are generally not compatible with safe airport operations within the 10,000-foot radius of an airport to protect approach, departure and circling airspace:

- Section 2.4.1, Existing Wetlands on or near Airport Property
- Section 2.5, Dredge Spoil Containment Areas
- Section 2.8.2, Landscaping and Landscape Maintenance.
- Section 2.8.3, Structures; and
- Section 2.8.4, Other Hazardous Wildlife Attractants.

FAA requests that these measures be incorporated into Chapter 3, Section IX.e. to include mitigation measures that are consistent with the guidance provided in Chapter 2, including review of the landscaping plan by a Qualified Airport Wildlife Biologist and notification provided to SFO to review plans for attractiveness to hazardous wildlife.

Noise

E3

FAA acknowledges the MND states the Project lies outside the decibel (dB) Community Noise Equivalent Level (CNEL) noise contour and there is no noise impact and no mitigation is required for the Project.

Your attention to these comments is appreciated. If you have any questions, I am available by phone at (925) 546-6432 or by email at Amy.L.Choi@FAA.gov; or you may contact Nani Jacobson, Environmental Protection Specialist, at (925) 546-6434 or Nani.M.Jacobson@faa.gov.

Sincerely,

Amy Choi
Manager, San Francisco Airports District Office
Western Pacific Region

cc:
Tarek Tabshouri, Acting Director, Aeronautics Program, Caltrans
Mike Nakornkhet, Director, San Francisco International Airport

Response E-1

The commenter describes the 14 Code of Federal Regulation Part 77 and the notification process for obtaining an evaluation of the potential to affect navigable airspace in the context of the project's building and new trees.

Comment noted. Refer to response to Comment A-2 regarding hazards to airspace. As the commenter acknowledges, the Project Approvals section of the IS/MND (page 2-16) indicates that the project will obtain a no hazard to air navigation finding if needed.

Response E-2

The commenter describes bird strike history at SFO and refers to FAA Advisory Circular 150/5200-33C. The commenter requests incorporating measures into the project to reduce such impacts.

See response to Comment A-2 regarding bird strike hazards.

Response E-3

The commenter acknowledges the IS/MND's conclusion that the project is outside the CNEL noise contour and that there is no related impact.

Comment noted. The comment does not contain questions or concerns regarding the adequacy of the Draft IS/MND analysis. No revisions to the Draft IS/MND are required.

Comment Letter F. One Shoreline

OneShoreline
Building Solutions for a Changing Climate

March 23, 2026

Via email to: rhurin@burlingame.org

Ruben Hurin, Planning Manager
City of Burlingame
501 Primrose Road
Burlingame, CA 94010

SUBJECT: 410 Airport Boulevard (SPHERE Institute proposed project)

I write on behalf of the San Mateo County Flood and Sea Level Rise Resiliency District, also known as OneShoreline, to comment on the December 2025 Initial Study/Mitigated Negative Declaration ("IS/MND") for the 410 Airport Boulevard Project ("Project") proposed for a long-vacant eyesore along Burlingame's Bay shoreline. There are several proposed features of this Project that, if constructed, would enhance this area. For this brief comment letter, I focus on the Project feature that is most relevant to OneShoreline's Millbrae and Burlingame Shoreline Resilience Project ("MBSRP").

Page 2-13 of the Project's IS/MND states "the Project is being designed in coordination with OneShoreline to ensure compatibility with the Millbrae-Burlingame Shoreline Protection and Enhancement Project." In the meetings between the Project proponents and OneShoreline, one of the key items discussed was the design and location of an elevated portion of the Project, which is presumedly shown beneath the Project feature labeled as "Bay Trail" in Figure 2-2 in the IS/MND. This elevated portion could help to reduce vulnerabilities to the area of 410 Airport Boulevard that lies behind it, and contribute towards resilience of adjacent properties and infrastructure when connected to the MBSRP at the southeast corner of the property at Airport Boulevard and Sanchez Creek and at the northwest corner of the property along the Bay.

F1

As the Project proponents are aware (both from the meetings with OneShoreline and Burlingame Zoning Ordinance Section 25.12.050.J), it is very important that there be a portion of the Project that is elevated and is designed and constructed in accordance with Federal Emergency Management Agency ("FEMA") guidance so that, when connected to the MBSRP, properties behind it are less vulnerable and are not subject to flood insurance requirements from high tides, storm surge, and sea level rise. We do not see in the IS/MND or other public documents associated with this Project any discussion of a feature that meets this objective and ask whether the Bay Trail alignment in Figure 2-2 sits atop a levee that can be accredited by FEMA.

The concern raised above is reinforced by the statement on page 3.10-8 of the IS/MND that "Although the Project is not intended to function as a flood control project, construction of the restored tidal marsh and raised ecotone slope along the landward portion of the site is expected to have a net flood benefit in the near-term and would not present substantial obstacles to floodflows under extreme sea-level rise conditions. Therefore, the Project would not impede or redirect floodflows, and impacts would be ***less than significant***." The restored tidal marsh and raised ecotone slope will have a marginal flood protection benefit, but (as the IS/MND states) it will not prevent Bay tides with sea level rise and/or and storm surge from inundating the Project's marsh and flooding the landward portion of 410 Airport Boulevard and the adjacent private properties and public infrastructure.

OneShoreline looks forward to continued coordination with the Project team so that the Project realizes its potential to provide multiple benefits, including climate resilience, for the Project proponents and their neighbors. Please contact Summer Bundy at sbundy@oneshoreline.org with any questions.

Sincerely,

Len Materman
Chief Executive Officer

Response F-1

The commenter emphasizes the importance of an elevated portion of the project that will enhance resiliency for properties and infrastructures behind it. The commenter asks whether the feature meets FEMA guidance and whether the Bay Trail alignment is atop a levee that can be accredited by FEMA. The commenter also raises a concern that the project design will not prevent Bay tides with sea level rise and/or and storm surge from inundating the Project's marsh and flooding the landward portion of 410 Airport Boulevard and the adjacent private properties and public infrastructure.

Since the berm will ultimately be protecting property behind it, it would be constructed in a manner to be accredited by FEMA, as described in 44 CFR 65.10. It should be noted that while the levee could be constructed to meet the criteria, FEMA may not accredit a stand-alone levee if water can pass around the sides of it. Regarding the effects of sea level rise on the project and adjacent private properties and infrastructure, sea level rise is a background environmental condition driven by global climate processes, not an environmental change caused by the project. CEQA is concerned with the ways in which a project may cause a physical change in the environment, not with the effects of existing or future environmental conditions on a project. No revisions to the Draft IS/MND are required.

Chapter 3
Revisions to the Draft IS/MND

This section lists revisions that have been made to the Draft IS/MND in response to comments. The minor changes do not result in significant new information with respect to the project, including the level of significance of project impacts or any new significant impacts. Therefore, recirculation of the Draft IS/MND pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15073.5 is not required.

Page 2-3 of the IS/MND has been revised as follows:

> The proposed education center/event building would have a ~~maximum~~ building height of approximately 3~~4~~3 feet, and could be up to 35 feet above adjacent grade, which would be raised to approximately 18' NAVD88; the Project's FAR would be 0.03.

The list of approvals on page 2-15 of the IS/MND has been revised as follows:

- California Department of Fish and Wildlife – Streambed Alteration Agreement and Scientific Collection Permit.

Page 3.1-3 of the IS/MND has been revised as follows:

> The Burlingame General Plan does not identify scenic vistas. However, it considers views of the hillsides and the waterfront along the Bay to be scenic public views. In the vicinity of the Project site, views of the Santa Cruz Mountains and Skyline Ridge (collectively referred to as "the hillsides") are visible when facing south or west. However, as discussed above, the hillsides are viewed mainly through channelized view corridors between the existing vegetation and buildings along Airport Boulevard. The Project would include a public nature and recreation park, which would not block any scenic views. Although an education center/event building would be constructed as part of the Project, the size and massing of this building (14,000 square feet, including a roof overhang with a height of approximately 3~~4~~3 feet) would not have an adverse effect on scenic public views of the hillsides.
>
> The waterfront along the Bay provides scenic public views that are visible from the Project site when looking north or east. The Project would include various features along the waterfront, such as a Bay overlook, lawns, boardwalks, and an improved Bay Trail. These features would increase public visibility of the Bay at the Project site compared to existing conditions. Therefore, the Project would not have an adverse effect on scenic public views of the waterfront.
>
> The higher elevations of Burlingame provide eastern views of the city, the Bay, and the East Bay Hills. The height of the proposed building (3~~4~~3 feet) would not affect these vistas because of the distance between the viewers and the Project site; the superior position of the viewers (i.e., at a higher elevation), relative to the Project site; the built-out, urban nature of the city; and the vast expanse of the Bay views. The proposed building, as well as the proposed public nature and recreation park, would be a minor element in the views from higher elevations in the city. Therefore, the Project would have a ***less-than-significant*** impact on a scenic vista.

Page 3.1-4 of the IS/MND has been revised as follows:

The Project site is in an urban area; however, the existing site is currently undeveloped. The Project site is designated as Bayfront Commercial (BFC) and zoned as Anza Area (AA) under the General Plan and the City's Zoning Code, respectively. The BFC land use designation allows greater development intensities for office and hospitality uses to encourage the conversion of underutilized lots; it also prioritizes public access to the waterfront. Permitted uses under the BFC designation include entertainment venues, restaurants, hotels and motels, retail establishments, higher-intensity office uses, and public open space. The AA zoning designation allows a mix of uses, including office uses, research and development (R&D), and associated laboratory uses and instructional activities. Building heights of up to 65 feet are permitted. Offices with a maximum floor area ratio (FAR) greater than 0.6, including R&D developments with associated laboratory uses, require a conditional use permit. The Project would redevelop vacant parcels with a new public nature and recreation park. It would be consistent with the allowable uses for the AA zoning district, which allows a building height of 40 feet within 100 feet of the Bay shoreline and a FAR of 0.6. The proposed education center/event building would have a ~~maximum~~ height of approximately 3~~4~~3 feet and could be up to 35 feet above adjacent grade, which would be raised to approximately 18' NAVD88; the Project's FAR would be 0.03. Therefore, the Project would not conflict with applicable zoning governing scenic quality.

Page 3.4-9 of the IS/MND has been revised as follows:

No suitable aquatic habitat that would support special-status fish and marine mammal species is present in the terrestrial portions of the Project site. However, the open waters of San Francisco Bay and Sanchez Creek immediately adjacent to the Project site (e.g., within areas where Project activities would occur within tidal waters) provide potential foraging habitat for Central California coast steelhead, green sturgeon (*Acipenser medirostris*), white sturgeon (*Acipenser transmontanus),* longfin smelt (*Spirinchus thaleichthys*), Pacific lamprey (*Entosphenus tridentatus*), Central Valley fall-run Chinook salmon, California sea lion, and Pacific harbor seal. San Francisco Bay is also designated as critical habitat for Central California coast steelhead (70 FR 52488, September 2, 2005), the southern distinct population segment [DPS] of North American green sturgeon (74 FR 52299, October 9, 2009), and EFH for coastal pelagic, Pacific groundfish, and Pacific salmon fisheries.

Pages 3.4-12 and 3.4-13 of the IS/MND have been revised as follows:

In-water construction may result in direct physical injury or mortality to fish ~~from activities, including pile driving, coffer dam installation, and coffer dam dewaters (i.e., fish stranding or entrainment into pumps during dewatering)~~, primarily from pile driving activities. Installation of piles or placement of riprap (i.e., for the northwestern shoreline repairs) could result in fish being crushed, although that risk would be expected to be low, based on the limited spatial extent of the work, fish exclusion methods, and the high probability of fish avoiding such activities. Displacement of fish away from habitat near construction activities ~~seems like~~ is the most likely adverse effect. Fish and other aquatic species may also be injured or killed due to acoustic effects associated with impact pile driving; this potential impact is further described below. ~~Fish entrapped in construction areas enclosed by turbidity curtains and coffer dams that are subsequently dewatered would die without fish rescue activities, although the number of fish being trapped in such areas would be low relative to the number of fish throughout the species' range. Fish that are rescued from coffer dams prior to or during dewatering could be~~

~~injured and killed during rescue activities or as a result of handling.~~ The potential for impact from fish entrapment will be avoided by the use of block nets and turbidity curtains: in-water construction will be initiated at low tide, prior to which qualified biologists shall use a block net to encourage fish to leave the work area. Temporary turbidity curtains installed at low tide will maintain fish exclusion prior to coffer dam installation and dewatering activities. Fish shall be excluded from the work area prior to in-water work, thus relocation and handling of fish is not anticipated and any associated impacts are avoided. Mitigation Measures BIO-3, BIO-4, and BIO-5, ~~and BIO-6~~ would avoid or minimize the potential for direct physical injury and mortality for fish. Implementation of these mitigation measures would ensure the protection of State and federally listed fish and other special-status fish species by restricting in-water construction to periods when special-status fish are ~~absent or their abundance is relatively low~~ unlikely to be present; moving fish away from areas where they could be harmed; ~~rescuing stranded fish in coffer dams by following standard fish herding, collecting, handling, and relocation protocols;~~ and requiring that pumps used to dewater coffer dams be screened according to CDFW and NMFS screening guidelines for pumps. Therefore, this impact is ***less than significant with mitigation***.

Mitigation Measure BIO-4 on page 3.4-13 of the IS/MND has been revised as follows:

Fish shall be excluded from the work area prior to in-water work. Construction of the water rescue/kayak ramp, kitesurfing ramp, and tidal inlet will be initiated at low tide. Prior to initiating work, qualified biologists shall use a block net to encourage fish to leave the work area. The net will be moved from the shore and out and away from the work area. Once fish have moved out of the area, the turbidity curtains will be installed around the work area. The turbidity curtains will be removed after sediments have settled and the work is completed. Relocation of fish is not anticipated and will not be required for in-water construction activities.

Mitigation Measure BIO-6 on page 3.4-14 of the IS/MND has been removed as follows:

~~**Mitigation Measure BIO-6: Fish Relocation**~~

~~If fish cannot be excluded entirely from areas where turbidity curtains shall be employed, qualified biologists shall relocate the remaining fish outside the work area using seine nets, dip nets, or other means. The method of relocation shall be determined by the qualified biologist, in consultation with NMFS (and CDFW as necessary) and consistent with methods described in the *California Salmonid Stream Habitat Restoration Manual,* fourth edition,[9] and *NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects,*[10] based on site conditions and species present. A Fish Rescue and Relocation Plan shall be prepared and shall provide at a minimum the following items:~~

- ~~Qualifications of the fish rescue team: only fisheries biologists who are approved by the U.S. Fish and Wildlife Service (USFWS) and NMFS and permitted by CDFW under a CESA memorandum of understanding (MOU) shall handle and relocate CESA-listed species.~~
    - ~~Schedule and description of proposed fish relocation techniques.~~

[9] Flosi, G., S. Downie, J. Hopelain, M. Bird, R. Coey, and B. Collins. 2010. *California Salmonid Stream Habitat Restoration Manual.* Fourth edition. California Department of Fish and Game, Wildlife and Fisheries Division.

[10] Pecharich, J. 2017. *NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects*. March. NMFS, Santa Rosa, CA.

- ~~Measures implemented to minimize injury and mortality of listed species and other native aquatic species during fish relocation and dewatering activities, as described in Volume II Part IX, pages 52 and 53, of the *California Salmonid Stream Habitat Restoration Manual.*~~
  - ~~Timeline of data availability and reporting requirements to NMFS, CDFW, and USFWS.~~

~~The Fish Rescue and Relocation Plan shall be submitted to CDFW, NMFS, and USFWS for review and approval no later than 60 days prior to conducting in-water work, or as specified in permit conditions. Fish exclusion due to turbidity curtains and relocation shall be confirmed prior to any in-water construction, including installation of sheet piles/coffer dams and steel pipe piles.~~

Mitigation Measure BIO-7 on page 3.4-14 of the IS/MND has been revised as follows:

Mitigation Measure BIO-6~~7~~: Biological Monitoring for In-Water Work

The second and third paragraphs on page 3.4-15 of the IS/MND have been revised as follows:

Implementation of Mitigation Measure BIO-7~~8~~ (Erosion and Sedimentation Control) would protect surface water quality during construction by employing standard construction best management practices (BMPs) to treat and minimize runoff.

In addition to implementation of Mitigation Measure BIO-3 and BIO-7~~8~~, a turbidity curtain would be developed prior to construction of in-water features and the installation or removal of sheet piles for coffer dams.

Mitigation Measure BIO-8 on page 3.14-16 of the IS/MND has been revised as follows:

Mitigation Measure BIO-7~~8~~: Erosion and Sedimentation Control

Page 3.4-19 of the IS/MND has been revised as follows:

Implementation of Mitigation Measures BIO-1, BIO-3, and BIO-8~~9~~ would reduce potential noise impacts resulting from in-water work to less-than-significant levels because hydroacoustic monitoring would be conducted during impact pile driving to ascertain compliance with established objectives (e.g., distances to cumulative noise thresholds) and identify corrective actions to be taken should the predicted threshold distances be exceeded.

Mitigation Measure BIO-9 on page 3.4-19 and 3.4-20 of the IS/MND has been revised as follows:

Mitigation Measure BIO-8~~9~~: Noise Impact Minimization

To minimize impacts on fish and marine mammals, the Project Applicant shall implement the following measures to reduce the magnitude of pressure waves generated by pile driving:

1. All pile driving shall be conducted between June 1 and November 30 and limited to no more than 12 hours in any single day.
2. To the extent feasible, all piles shall be installed with a vibratory pile driver.
3. An impact pile driver shall be used only when necessary to complete installation of piles, in accordance with seismic safety or engineering criteria.
4. If an impact pile driver is used, it shall be cushioned using a 12-inch-thick wood block, which will reduce noise levels by 4 to 5 dB.

5. Bubble curtains shall be used during any impact pile driving in water. The bubble curtain ~~will~~ may reduce the noise levels by up to 15 dB; however, a more conservative estimate of 5 dB of sound attenuation will be used for any hydroacoustic analyses throughout the permitting process. The bubble curtain shall be operated in a manner consistent with the following performance standards:
    a. The bubble curtain shall distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
    b. The lowest bubble ring shall be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline contact. No parts of the ring or other objects shall prevent full mudline contact.
    c. Air flow to the bubblers must be balanced around the circumference of the pile.
6. A "soft start" technique shall be employed if an impact pile driver shall be used on any piles (on land or in water). The first few taps of the hammer on the piling should deter fish and marine mammals away from the pilings before full impact strength is applied, reducing the potential for fish and marine mammals to be present and exposed to potential injury during full hammer strikes. This technique shall be used upon initiation of pile driving or when there is a downtime of 30 minutes or more without pile driving.
7. Pile driving shall occur only during daylight hours and will be performed at low tide and within the coffer dam/sheet pile-isolated work area.

Mitigation Measure BIO-10 on page 3.4-22 of the IS/MND has been revised as follows:

This potential impact would be reduced to adequate levels through implementation of Mitigation Measure BIO-9~~10~~, and the impact would be ***less than significant with mitigation.***

Mitigation Measure BIO-9~~10~~: Pre-Construction Surveys for Eelgrass and Translocation or Compensatory Mitigation if Necessary

Page 3.4-26 of the IS/MND has been revised as follows:

Implementation of Mitigation Measure BIO-7~~8~~ would further minimize any adverse indirect effects on waters or wetlands from construction-related activities (e.g., dewatering discharge). With the water quality protection measures required by compliance with the Construction General Permit and the MRP, as well as implementation of Mitigation Measure BIO-7~~8~~, the Project would not have a substantial adverse effect on aquatic habitats. Therefore, the impact would be ***less than significant with mitigation***.

Page 3.4-29 of the IS/MND has been revised as follows:

The lighting design for the Project has not been finalized; therefore, implementation of Mitigation Measure BIO-10~~11~~ would be required to ensure the Project would sufficiently minimize potential impacts of lighting on wildlife species. Therefore, the impact would be ***less than significant with mitigation.***

Mitigation Measure BIO-11 on page 3.4-30 of the IS/MND has been revised as follows:

Mitigation Measure BIO-10~~11~~: Minimize Exterior Lighting

Page 3.4-31 of the IS/MND has been revised as follows:

> Implementation of Mitigation Measure BIO-1 and BIO-11~~12~~ would reduce impacts on nesting birds and raptors by providing environmental awareness training to construction personnel, conducting pre-construction surveys, and implementing protective measures during construction activities. Therefore, the impact would be ***less than significant with mitigation***.

Mitigation Measure BIO-12 on page 3.4-31 of the IS/MND has been revised as follows:

> **Mitigation Measure BIO-11~~12~~: Conduct Preconstruction Surveys and Implement Protective Measures to Avoid Disturbance of Nesting Birds and Raptors**

Page 3.9-7 of the IS/MND has been revised as follows:

> In October 2023, the City/County Association of Governments (C/CAG), acting as the San Mateo County Airport Land Use Commission, determined that Burlingame's Zoning Ordinance Update is conditionally consistent with the ALUCP. Furthermore, modifications to the Zoning Code, as required by C/CAG, have been included with a Zoning Ordinance Update in 2026. Thus, the Project, consistent with the 2040 General Plan land use and zoning designation, requires no additional determination from C/CAG. In addition, the Project site does not fall within any of the safety compatibility zones (as depicted in Exhibit IV-7 of the SFO ALUCP) and, therefore, is not within an area of potential danger involving operations at SFO. Therefore, the Project would not result in a safety hazard or excessive noise for people in the Project area, and impacts would be ***less than significant***.

Page 3.10-4 of the IS/MND has been revised as follows:

> In addition, implementation of MM BIO-7~~8~~, Erosion and Sedimentation Control, would minimize impacts on tidal habitats. Measures include the installation of temporary sediment turbidity curtains around the worksite to minimize sediment transport. MM BIO-7~~8~~ is further described in Section IV, *Biological Resources*.

Page 3.10-6 of the IS/MND has been revised as follows:

> In addition, implementation of MM BIO-7~~8~~, Erosion and Sedimentation Control, requires installation of temporary sediment turbidity curtains to minimize the transport of sediment-laden water.

Page 3.11-2 of the IS/MND has been revised as follows:

> With the conditional use permit, the Project would be consistent with the requirements set forth for development in the AA zoning district, which allows a building height of 40 feet within 100 feet of the Bay shoreline and a FAR of 0.6. The proposed education center/event building would have a ~~maximum~~ height of approximately 34~~3~~ feet, and could be up to 35 feet above adjacent grade, which would be raised to approximately 18' NAVD88; the Project's FAR would be 0.03.

Page 3.13-20 of the IS/MND has been revised as follows:

> Implementation of Mitigation Measures MM BIO-1, MM BIO-3, and MM BIO-8~~9~~ would reduce potential noise impacts on fish and marine mammals resulting from in-water work to less-than-significant levels because hydroacoustic monitoring would be conducted during impact pile driving to ascertain compliance with established objectives (e.g., distances to cumulative noise thresholds) and identify corrective actions to be taken should the predicted threshold distances be exceeded.

Page 3.21-1 of the IS/MND has been revised as follows:

> However, implementation of Mitigation Measures BIO-1 through BIO-9~~10~~ and Mitigation Measure BIO-11~~12~~ would ensure that impacts on these resources would be less than significant

Page 3.21-2 of the IS/MND has been revised as follows:

> Nonetheless, because the lighting design for the Project has not been finalized, implementation of Mitigation Measure BIO-10~~11~~ would be required to ensure the Project would sufficiently minimize the potential impacts of lighting on wildlife species.

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
Air Quality	**Mitigation Measure AQ-1: Require Implementation of BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions.** The Project Sponsor shall require its contractor(s), as a condition of contracts (e.g., standard specifications), to reduce construction-related fugitive dust emissions by implementing the following modified Bay Area Air Quality Management District basic best management practices. • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered three times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s)	City of Burlingame (Public Works Department & Building Division Field Inspectors); Individual at City identified as person of contact for dust complaints	During construction

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	• All trucks and equipment, including their tires, shall be washed off prior to leaving the site. • Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. • Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations. The Project Sponsor shall submit evidence of compliance to the City prior to grading permit issuance.				
Biological Resources	**Mitigation Measure BIO-1: Conduct Environmental Resources Worker Awareness Training.** All field management and construction personnel shall be trained by a qualified biologist experience in construction monitoring on the importance of protecting sensitive natural resources (e.g., special-status fish, birds, and marine mammals and designated critical and/or suitable habitats for these species, including EFH) prior to any ground-disturbing activity. Preconstruction training shall be conducted so that construction personnel are aware of their responsibilities and the importance of compliance. All trainees shall be required to sign a sheet, indicating their attendance and completion of environmental training. Construction personnel shall be educated on the types of sensitive resources in the Project area and the measures required to avoid and minimize impacts on these resources. Materials covered in the training	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s); Qualified Biologist	City of Burlingame Planning Division	Prior to construction

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	program shall include environmental rules and regulations, as well as specific site requirements to limit activities to approved work areas; timing restrictions; and avoidance of sensitive resource areas. In general, the training shall include the following components: • A review of the special-status birds, fish, and marine mammals and sensitive habitats that could be found in work areas, including known nests or bat roosts, if present. o Measures to avoid or minimize impacts on special-status birds, bats, fish, and marine mammals, their habitats, and EFH. • A review of all conditions requirements of environmental permits, reports, and plans (e.g., USACE permits). o Consequences for violations of the laws and regulations protecting resources. • Boundaries of the work area. o Exclusion and construction fencing methods and staking methods to protect resources. • Roles and responsibilities, including an explanation regarding the authority of biological monitors to stop work, as required by permits and/or Project approvals. o What to do when special-status fish or wildlife, or plants, are encountered (including dead, injured, stressed, or entrapped individuals) in work areas.				

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
Biological Resources	**Mitigation Measure BIO-2: Minimize Impacts on Western Red Bat.** Prior to tree trimming or removal, the Project proponent shall retain a qualified biologist to conduct pre-construction surveys for western red bat. Prior to initiating tree trimming or removal, a qualified biologist shall examine the trees to be removed or trimmed to identify suitable bat roosting habitat. Because of the limited timeframe for tree removal for bats (September 15 to October 31), the tree habitat assessment should be conducted early enough to provide information to inform tree removal planning. The biologists shall identify high-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags), and the area around these features shall be searched for bats and indications of bat use. If the tree can be adequately assessed and no habitat for roosting bats is present, no further actions are necessary and tree removal or trimming may commence. Because signs of bat use are not easily found, and trees cannot be completely surveyed for bat roosts, the Project proponent shall implement protective measures for trees containing potential roosting habitat. Trimming and removal of trees with suitable roosting habitat shall be conducted between September 15 and October 31, which corresponds to a time period when bats would not be likely to have entered winter hibernation and would not be caring for flightless young. The trimming and removal of trees shall be monitored by a qualified biologist. Trees shall be removed in pieces rather than felling the entire tree. If weather conditions remain conducive to regular bat activity beyond October 31, later tree removal may be considered in consultation with CDFW.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s); Qualified Biologist	City of Burlingame Planning Division	Prior to tree trimming or removal. Trimming and removal of trees with suitable roosting habitat shall be conducted between September 15 and October 31.

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
Biological Resources	**Mitigation Measure BIO-3: Seasonal Restrictions.** In-water work shall be avoided during the seasonal period when juvenile salmonids are moving through the estuary on their way to the ocean or when groundfish and prey species could be directly affected. Because steelhead are potentially present, in-water work shall be conducted between June 1 and November 30, based on the standard work windows for steelhead and Pacific herring. All in-water construction, including installation of turbidity curtains, sheet piles/coffer dams, and steel pipe piles, shall occur during this window. Construction will be limited to daylight hours only. If completion of in-water work within this period is not feasible due to scheduling issues, new timing guidelines shall be established and submitted to NMFS and CDFW for review and approval.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s)	City of Burlingame Planning Division	In water work to be conducted between June 1 and November 30, and limited to daylight hours only.
Biological Resources	**Mitigation Measure BIO-4: Fish Exclusion at Turbidity Curtain Sites.** Fish shall be excluded from the work area prior to in-water work. Construction of the water rescue/kayak ramp, kitesurfing ramp, and tidal inlet will be initiated at low tide. Prior to initiating work, qualified biologists shall use a block net to encourage fish to leave the work area. The net will be moved from the shore and out and away from the work area. Once fish have moved out of the area, the turbidity curtains will be installed around the work area. The turbidity curtains will be removed after sediments have settled and the work is completed. Relocation of fish is not anticipated and will not be required for in-water construction activities.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s); Qualified Biologist	City of Burlingame Planning Division	Prior to in-water work

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
Biological Resources	**Mitigation Measure BIO-5: Avoid and Minimize Adverse Effects on Special-Status Fish Species from Coffer Dams.** The following restrictions shall be implemented during installation of the coffer dams and coffer dam dewatering. ● Sheet piles used for coffer dams shall be installed and removed using a vibratory pile driver. ○ Coffer dams shall be installed and removed only during the approved in-water work window (between June 1 and November 30, pending resource agency approval). ● All pumps used during dewatering of coffer dams shall be screened according to CDFW and NMFS guidelines for pumps.[11,12]	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s)	City of Burlingame Planning Division	During installation of coffer dams and coffer dam dewatering
Biological Resources	**Mitigation Measure BIO-6: Biological Monitoring for In-Water Work.** A qualified biologist shall monitor construction of all in-water work along the Bay shoreline to ensure that no fish are remaining in the work area and that no marine mammals or fish move into the work area. If fish or marine mammals are observed within the work area, the monitor shall direct the contractor to wait until the animals leave the area or pause work if animals move into the area.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s); Qualified Biologist	City of Burlingame Planning Division	During in-water work

[11] California Department of Fish and Game. 2010. Fish Screen Criteria. In *California Salmonid Stream Habitat Restoration Manual*, Appendix S. Available: https://nrm.dfg.ca.gov/FileHandler.ashx? DocumentID=75315.

[12] National Marine Fisheries Service. 1997. *Fish Screening Criteria for Anadromous Salmonids.* January. Southwest Region. Santa Rosa, CA. Available: https://nrm.dfg.ca.gov/FileHandler.ashx? DocumentID=75315.

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
Biological Resources	**Mitigation Measure BIO-7: Erosion and Sedimentation Control.** During construction, the Project shall employ standard construction BMPs to treat and minimize runoff. The Project shall also obtain 401 water quality certification from the RWQCB, which may contain additional measures to ensure protection of water quality. Construction BMPs shall be reviewed and coordinated with RWQCB, as necessary, for implementation during work and may include, but are not limited to, the following: ● For impacts on tidal habitats: ○ Install temporary sediment turbidity curtains around the worksite to minimize sediment transport. 1. To the extent practicable, work only during periods of slack tide (minimal current) and low wind to minimize transport of sediment-laden water. ○ All dewatering systems and discharge protocols shall be reviewed and pre-approved to comply with regulatory standards prior to operation on-site. ● Sediment mitigation measures shall be in place prior to the onset of Project construction and shall be monitored and maintained until construction activities have been completed. Temporary stockpiling of excavated or imported material shall occur only in approved construction staging areas. Excess excavated soil shall be disposed of at a regional landfill or at another approved and/or properly permitted location. Stockpiles that are to remain on the site throughout the wet season shall be protected to prevent erosion.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s)	City of Burlingame Planning Division	Prior to and during construction

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	○ No litter, debris, or sediment shall be dumped into storm drains. Daily trash and debris removal shall occur at the site. ● Equipment staging and parking of vehicles shall occur on established access roads and flat surfaces. ○ The integrity and effectiveness of construction fencing and erosion control measures shall be inspected on a daily basis. Corrective actions and repairs shall be carried out immediately for fence breaches and ineffective BMPs. ● Fueling, washing, and maintenance of vehicles shall occur in developed habitat, away from San Francisco Bay and Sanchez Creek. Equipment shall be regularly maintained to avoid fluid leaks. Any leaks shall be captured in containers until equipment is moved to a repair location. Hazardous materials shall be stored only within developed habitat. Containment and cleanup plans shall be prepared and put in place for immediate cleanup of fluid or hazardous materials. ○ At no time shall sediment-laden water be allowed to enter San Francisco Bay and Sanchez Creek. ● All litter and construction debris shall be disposed of off-site in accordance with State and local regulations. All trash and debris within the work area shall be placed in containers with secure lids before the end of work each day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. If containers meeting these criteria are not available, all rubbish shall be removed from the Project site at the end of each work day.				

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	○ Absorbent materials designated for spill containment and clean-up activities shall be available on-site for use with an accidental spill. ● Upon completion of in-water work activities, any turbidity curtains shall be removed in a manner that allows flows to resume with the least disturbance to the substrate.				
Biological Resources	**Mitigation Measure BIO-8: Noise Impact Minimization.** To minimize impacts on fish and marine mammals, the Project Applicant shall implement the following measures to reduce the magnitude of pressure waves generated by pile driving: 1. All pile driving shall be conducted between June 1 and November 30 and limited to no more than 12 hours in any single day. 2. To the extent feasible, all piles shall be installed with a vibratory pile driver. 3. An impact pile driver shall be used only when necessary to complete installation of piles, in accordance with seismic safety or engineering criteria. 4. If an impact pile driver is used, it shall be cushioned using a 12-inch-thick wood block, which will reduce noise levels by 4 to 5 dB. 5. Bubble curtains shall be used during any impact pile driving in water. The bubble curtain may reduce the noise levels by up to 15 dB; however, a more conservative estimate of 5 dB of sound attenuation will be used for any hydroacoustic analyses throughout the permitting process. The bubble curtain shall be operated in a manner consistent with the following performance standards:	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s); Qualified Biologist	City of Burlingame Planning Division	Hydroacoustic monitoring plan to be developed and implemented prior to pile driving activities; other noise minimization measures implemented during construction

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	a. The bubble curtain shall distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column. b. The lowest bubble ring shall be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline contact. No parts of the ring or other objects shall prevent full mudline contact. c. Air flow to the bubblers must be balanced around the circumference of the pile. 6. A "soft start" technique shall be employed if an impact pile driver shall be used on any piles (on land or in water). The first few taps of the hammer on the piling should deter fish and marine mammals away from the pilings before full impact strength is applied, reducing the potential for fish and marine mammals to be present and exposed to potential injury during full hammer strikes. This technique shall be used upon initiation of pile driving or when there is a downtime of 30 minutes or more without pile driving. 7. Pile driving shall occur only during daylight hours and will be performed at low tide and within the coffer dam/sheet pile-isolated work area. 8. A hydroacoustic monitoring plan shall be developed prior to and implemented during pile driving activities to ascertain compliance with established objectives (e.g., distances to cumulative noise thresholds) and identify corrective actions to be taken should the predicted threshold distances be exceeded. Hydroacoustic monitoring shall be conducted at 10 m from all pile driving if an impact hammed is used to set the pilings. Impact hammer pile				

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	driving shall be limited to no more than 12 hours daily to provide a 12-hour rest period between impact pile driving events. To minimize the potential for injury to marine mammals, the following measures shall additionally be implemented: a. If threshold noise levels are recorded during pile driving, a shutdown zone equal to the distance at which injury threshold sound levels were recorded shall be established around each pile. b. A qualified biological monitor shall visually scan the Project site and surrounding waters for the presence of marine mammals at least 30 minutes before and continuously throughout periods of impact pile driving. If any marine mammal is sighted in the shutdown zone before pile driving begins, the contractor (or other authorized individual) shall delay pile-driving activities until the animal has moved outside the shutdown zone or the animal is not resighted (within 15 minutes for pinnipeds or 30 minutes for certaceans). c. If any marine mammal is about to enter or is observed in the shutdown zone during pile driving, the pile-driving activities shall be shut down until the animal has moved outside the shutdown zone or the animal is not resighted (within 15 minutes for pinnipeds or 30 minutes for cetaceans). 9. A biological monitor or team shall be present during all pile driving to observe the work area before, during, and after pile driving. The monitor(s) shall staff the hydroacoustic				

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	monitoring equipment and record marine mammal use within the action area. The monitor(s) shall also be responsible for ensuring that all pile driving work is conducted according to permit terms and conditions. In addition, contractors shall consult with the biological monitor(s) to ensure that any changes to means and methods are in compliance with permit conditions related to the protection of estuarine resources. 10. A debris containment structure (i.e., floating boom) shall be installed outside of the pile driving area to ensure that any floating debris that enters the water will be contained for later collection and disposal. 11. A full complement of oil spill clean-up equipment shall be on-site and available for immediate deployment should there be an accidental discharge of fuel, lubricant, or hydraulic oils.				
Biological Resources	**Mitigation Measure BIO-9: Pre-Construction Surveys for Eelgrass and Translocation or Compensatory Mitigation if Necessary.** Prior to onset of any in-water construction activities, and within 60 days of construction initiation, an eelgrass survey shall be conducted within the same buffer of the Project boundary previously surveyed and described in Appendix C of the biological resources report (Appendix B). As per the CEMP, the survey area shall be scaled as appropriate to the size of the potential action and the potential extent and distribution of eelgrass impacts, including both direct and indirect effects. The survey shall be conducted according to the methods contained in the CEMP.[13] If	Less than Significant with Mitigation Incorporated	Project Sponsor; Qualified Biologist	City of Burlingame Planning Division	Prior to in-water construction work, and within 60 days of the start of construction activities

[13] Ibid.

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	eelgrass beds are absent within the area surveyed, then no further mitigation shall be required. If eelgrass is found within the surveyed area, then a qualified biologist shall determine (in coordination with NMFS and CDFW) whether the eelgrass bed is likely to be affected to the point that relocation or compensatory mitigation is necessary. That determination shall be based on distance between the eelgrass and the work area, tidal current patterns, water depth, and other factors that may influence whether increased turbidity or sediment mobilization could affect the eelgrass. If eelgrass shall be affected to the point that translocation is appropriate, any translocation of eelgrass beds shall be conducted consistent with the methods described in the CEMP and/or those described in *Eelgrass Conservation in San Francisco Bay: Opportunities and Constraints*.[14] If it is determined that eelgrass shall be affected but it is not possible to translocate eelgrass beds, then the Project applicant shall provide compensatory mitigation consistent with the CEMP for eelgrass. As per the CEMP, multiple compensatory mitigation options are possible, but in this case, the most appropriate would be in-kind mitigation. The eelgrass Mitigation and Monitoring Plan shall be prepared in conjunction with input from NMFS and CFDW and, as per the CEMP, shall provide at a minimum the following items: ● Results of preliminary eelgrass survey and pre/post-Project eelgrass surveys and summary of projected eelgrass impacts				

[14] Boyer, K. E., and S. Wyllie-Echeverria. 2010. *Eelgrass Conservation in San Francisco Bay: Opportunities and Constraints: Final Report for the San Francisco Bay Subtidal Habitat Goals Project.* Available: http://www.sfbaysubtidal.org/PDFS/Ap8-1%20Eelgrass.pdf.

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	○ Goals of the in-kind mitigation to achieve no net loss of eelgrass or eelgrass habitat function ● Description of proposed mitigation site and reference site(s) ○ Mitigation design, including: ▪ Description of proposed mitigation measure 1. Construction schedule, including specific starting and ending dates for all work including mitigation activities ○ Planting plan (eelgrass propagule procurement and installation) ▪ Maintenance Plan ● Schedule and description of proposed post-Project monitoring and when results shall be provided to NMFS and CDFW ○ Schedule and description of process for continued coordination with NMFS and CDFW through mitigation implementation ● Monitoring measures, and performance and success criteria. Monitoring events and milestones are detailed in the CEMP but include the following milestones, as an example: ○ By Year 1, the mitigation site should achieve a minimum of 40 percent coverage of eelgrass and 20 percent density of the reference site(s) over not less than 1.2 times the area of the impact site ○ By Year 2, the mitigation site should achieve a minimum of 85 percent coverage of eelgrass and 70 percent density of the reference site(s) over not less than 1.2 times the area of the impact site.				

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	○ By Year 3, the mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of the reference site(s) over not less than 1.2 times the area of the impact site ● Description of alternative contingent mitigation or adaptive management should the proposed mitigation fail to achieve performance measures ○ Description of mitigation reporting The mitigation shall be deemed complete and the applicant released from further responsibilities when the final success criteria have been met or when the mitigation is deemed complete as determined by NMFS.				
Biological Resources	**Mitigation Measure BIO-10: Minimize Exterior Lighting.** To the extent consistent with the normal and expected operations of the completed Project, measures shall be implemented to minimize the degree to which natural habitats on and surrounding the Project site are illuminated by Project lighting. Such measures may include the installation of motion-sensor lighting, automatic light shut-off mechanisms, downward-facing exterior light fixtures, the use of Dark-Sky-compliant lighting, and others. Exterior lighting within the Project footprint shall be shielded as needed to block illumination from shining upward or outward into the Bay and Sanchez Creek.	Less than Significant with Mitigation Incorporated	Project Sponsor or its contractor(s)	City of Burlingame Planning Division	Prior to construction and monitoring during operation

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
Biological Resources	**Mitigation Measure BIO-11: Conduct Preconstruction Surveys and Implement Protective Measures to Avoid Disturbance of Nesting Birds and Raptors.** To reduce impacts on nesting birds and raptors, the Project proponent shall implement the measures listed below prior to construction activities. ● **Avoidance of the Nesting Season.** To the extent feasible, commencement of demolition and construction activities should be scheduled to avoid the nesting season. If demolition and construction activities are scheduled to take place outside the nesting season, all potential demolition/construction impacts on nesting birds protected under the Migratory Bird Treaty Act (MBTA) and the CFGC shall be avoided. The nesting season for most birds in San Mateo County extends from February 1 through August 31. ○ **Vegetation Removal.** If construction activities shall not be initiated until after the start of the nesting season, all potential nesting substrates (e.g., bushes, trees, grasses, and other vegetation) that are scheduled to be removed by the Project shall be removed prior to the start of the nesting season (e.g., prior to February 1) to the extent feasible. This shall preclude the initiation of nests in this vegetation and minimize the potential delay of the Project due to the presence of active nests in these substrates. ● **Pre-Activity/Pre-Disturbance Surveys—**If it is not possible to schedule construction activities between September 1 and January 31, then pre-activity surveys for nesting birds shall be conducted by a qualified biologist to ensure that no nests shall	Less than Significant with Mitigation Incorporated	Project Sponsor or its contactor(s); Qualified Wildlife Biologist	City of Burlingame Planning Division	Prior to construction A) September 1 to January 31 requires no surveys B) 7 days prior to construction during the nesting period of February 1 to August 31.

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	be disturbed during Project implementation. Surveys shall be conducted no more than 7 days prior to the initiation of ground-disturbing activities. During this survey, the biologist shall inspect all trees and other potential nesting habitats (e.g., trees and shrubs) in and immediately adjacent to the impact areas for nests. If no active nests are detected during these surveys, no additional measures are required if construction beings within 3 calendar days. An additional survey shall be conducted after any construction breaks of 3 calendar days or more. ○ **Non-Disturbance Buffers.** If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist shall determine the extent of a construction-free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species but subject to variation depending on the opinion of the biologist) to ensure that no nests of species protected by the MBTA and the CFGC shall be disturbed during Project implementation. ● **Nest Monitoring.** A qualified wildlife biologist shall monitor the nest(s) to ensure that construction activities do not affect nest success. Buffers (described above) may be reduced if a full-time qualified biologist is present to monitor the nest. Active nests shall be monitored to track progress of nesting activities until the biologist determines that the young have fledged and are capable of independent survival or the nest site is no longer active. ○ **Authority of Qualified Wildlife Biologist(s).** If, during construction, the qualified wildlife biologist(s) determines that a nesting bird is				

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	disturbed by construction activities to the point where continued activities could lead to nest failure, the qualified wildlife biologist(s) shall have the authority to immediately stop work. The qualified wildlife biologist(s) shall determine if additional protective measures (including increasing the non-disturbance buffer distance) need to be implemented and shall continue monitoring the nest until the qualified biologist(s) determine that bird behavior has normalized.				
Cultural Resources and Tribal Cultural Resources	**Mitigation Measure CULT-1: Stop Work if Archaeological Material or Features Are Encountered During Ground-Disturbing Activities** The applicant shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor and alert them to the possibility of exposing prehistoric archaeological resources within the Project site. During the briefing, the archaeologist shall discuss archaeologist objects that could be exposed, the need to stop excavation at the site of the discovery, and the procedures to follow regarding protection of the discovery and notification of the Project Sponsor and archaeological team. An "Alert Sheet" shall be posted in conspicuous locations at the Project site to alert personnel to the procedures and protocols to follow regarding the discovery of potentially significant prehistoric archaeological resources. If deposits or precontact or historical archaeological materials are encountered during Project construction activities, all work within 25 feet of the discovery shall be redirected and a qualified archaeologist shall assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of discovery. Project personnel shall not collect or move	Less than Significant with Mitigation Incorporated	Project Sponsor and/or its contractor(s); Qualified Professional Archaeologist; Native American representatives	City of Burlingame Planning Division	During construction

Environmental Topic	Mitigation Measures	Level of Environmental Impact	Responsible Party	Verifying Party	Timing
	any archaeological materials. Archaeological materials can include flaked-stone tools (e.g., projectile, points, knives, and choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash, and charcoal, shellfish remains, bones, and other cultural materials); and stone-milling equipment (e.g., mortars, pestles, and handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metals, and other refuse. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative, shall develop a treatment plan, which could include site avoidance, capping, or data recovery. The final disposition of archaeological, historical, and paleontological resources recovered on State Lands under the jurisdiction of the California State Lands Commission must be approved by the Commission.				
Geology and Soils	**Mitigation Measure GEO-1: Stop Work in Case of Discovery of Paleontological Resources.** Discovery of a paleontological specimen during any phase of the Project shall result in work stoppage in the vicinity of the find until it can be evaluated by a professional paleontologist. Should loss or damage be detected, additional protective measures or further action (e.g., resource removal), as determined by the professional paleontologist, shall be implemented to mitigate the impact prior to the continuation of work.	Less than Significant with Mitigation Incorporated	Project Sponsor and/or its contractor(s); Professional Paleontologist	City of Burlingame Planning Division	During construction

Appendix A

Biological Assessment

H. T. HARVEY & ASSOCIATES

Ecological Consultants

50 years of field notes, exploration, and excellence

FINAL Bay Rise Park
Biological Assessment

Project No. 4113-02

Prepared for:

The SPHERE Institute
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500 Airport Boulevard, Suite 340
Burlingame, CA 94010

Prepared by:

H. T. Harvey & Associates

June 16, 2025

Executive Summary

This document provides an evaluation of the impacts on biological resources of proposed activities for the construction of the Bay Rise Park Project (project) and for defining appropriate mitigation measures and monitoring requirements. The project is located at 410 Airport Boulevard, Burlingame, California. The project area is bordered by San Francisco Bay (Bay) to the north, Sanchez Creek to the east, a restaurant parking lot and Anza Lagoon to the east, and Bay View Place and Airport Blvd to the south.

The SPHERE Institute is proposing to transform the vacant 10.2-acre bayfront parcel into a public nature and recreation park. The project would also restore a natural tidal marsh along this portion of the Bay shoreline. The park will require construction activities that may affect protected species adjacent to the project site. All in-water work will be conducted during a work window from June 1 to November 30. This work will occur in three discrete project areas: pile placement at the kitesurfing ramp, water rescue/kayak ramp, and bay access/overlook; construction of a tidal inlet for tidal marsh creation; and northeastern shoreline repairs.

Background information on the project location and the project goals are provided in addition to a description of the project in its current design phase. Existing conditions on key ecological communities, species, and habitats present are outlined in detail that allows for a sufficient evaluation of potential project impacts.

This Biological Assessment (BA) evaluates the effects of construction and habitat change associated with the project on species listed as endangered or threatened under the Federal Endangered Species Act (ESA) and their federal designated critical habitat, species proposed for listing under the ESA, and the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Avoidance and minimization measures are provided.

Based on the present analysis, implementation of the proposed project may affect, and is not likely to adversely affect ESA-listed or candidate bird, fish, or invertebrate species in the action area or their designated critical habitat. The proposed project may adversely affect MSA Essential Fish Habitat (EFH) in the short term. While potentially adverse effects exist, including increased underwater noise and sediment suspension, such impacts are short-term and insignificant or discountable. These effects are offset through shoreline repairs and tidal marsh creation that will provide a new benefit to these species, and Best Management Practices to avoid and minimize impacts. As a result, the project will adequately mitigate its contribution to cumulative adverse effects on the listed and candidate species, designated critical habitat, and EFH.

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List of Preparers

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Acronym List

Abbreviation	Definition
BA	Biological Assessment
Bay	San Francisco Bay
BMPs	Best Management Practices
CCC	Central California Coast
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
dB	Decibels
DPS	Distinct Population Segment
ECS	Ecosystem Component Species
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Federal Endangered Species Act
ESU	Evolutionarily Significant Unit
FHWG	Fisheries Hydroacoustic Working Group
FMP	Fisheries Management Plan
ft	Feet
g	gram
HAPC	Habitat Areas of Particular Concern
HTL	High Tide Line
in	inch

Abbreviation	Definition
km	Kilometers
MHW	Mean High Water
mi	Miles
mm	millimeter
MSA	Magnuson-Stevens Fishery Conservation and Management Act
nDPS	Northern Distinct Population Segment
NMFS	National Marine Fisheries Service
p.	Page
PBF	Physical or Biological Feature
PFMC	Pacific Fishery Management Council
project	Bay Rise Park Project
RWQCB	Regional Water Quality Control Board
sDPS	Southern Distinct Population Segment
SEL	Sounds Exposure Levels
SFBD	San Francisco Bay-Delta
SFBE	San Francisco Bay Estuary
SLC	State Lands Commission
SSC	Suspended Sediment Concentrations
USFWS	U.S. Fish and Wildlife Service

Section 1. Introduction

The purpose of this Biological Assessment/Essential Fish Habitat Assessment (BA) is to review proposed activities for the construction of the Bay Rise Park Project (project) in sufficient detail to ensure the proposed action is in compliance with Section 7(c) of the Federal Endangered Species Act (ESA) of 1973, as amended. It presents technical information about the project and assesses the extent to which the proposed action may affect (a) any threatened, endangered, or candidate species regulated by the National Marine Fisheries Service (NMFS) and the U. S. Fish and Wildlife Service (USFWS); (b) designated critical habitat; and (c) Essential Fish Habitat (EFH) as defined by the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

The project currently consists of a vacant 10.2-acre bayfront parcel, located at 410 Airport Boulevard, Burlingame, California (Figure 1). The project area is bordered by San Francisco Bay (Bay) to the north, Sanchez Creek to the east, a restaurant parking lot and Anza Lagoon to the east, and Bay View Place and Airport Blvd to the south. In October 2019, the SPHERE institute secured an interim-term lease from the State Lands Commission (SLC) for the project area.

The SPHERE institute proposes to transform the project area from a vacant parcel to a public nature and recreation park. The proposed action would consist of the restoration of appropriate bayfront native habitats, enhancement of the user experience of the Bay shoreline, and creation of interpretive programming to foster connection to the natural environment.

The proposed project will require construction activities that may affect marine resources in South San Francisco Bay, California. H. T. Harvey & Associates' biologists analyzed the potential for listed species to occur in the action area, and the potential effect of the project on said species, designated critical habitat, and EFH. The federally threatened, endangered, candidate, or proposed species that were determined to be potentially in the action area include:

- Salt marsh harvest mouse (*Reithrodontomys raviventris*);
- California least tern (*Sternula antillarum browni*);
- California Ridgway's rail (*Rallus obsoletus obsoletus*);
- Marbled murrelet (*Brachyramphus marmoratus*);
- Western snowy plover (*Anarhynchus nivosus nivosus*);
- Northwestern pond turtle (*Actinemys marmorata*);
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*);
- Monarch butterfly (*Danaus plexippus*);

- Fountain thistle (*Cirsium fontinale* var. *fontinale*);
- Marin dwarf-flax (*Hesperolinon congestum*);
- San Mateo thornmint (*Acanthomintha obovate ssp. duttonii*);
- San Mateo woolly sunflower (*Eriophyllum latilobum*);
- White-rayed Pentachaeta (*Pentachaeta bellidiflora*);
- North American green sturgeon (*Acipenser medirostris*), southern Distinct Population Segment (DPS);
- Steelhead (*Oncorhynchus mykiss*), Central California Coast (CCC) DPS;
- Longfin smelt (*Spirinchus thaleichthys*), San Francisco Bay-Delta (SFBD) DPS; and
- Sunflower seastar (*Pycnopodia helianthoides*)

Background information on these species and the potential impacts associated with the project are addressed in Sections 3.3 and 5.0. The proposed action also occurs in designated critical habitat and EFH, which are further described and analyzed in Sections 6.0 and 7.0.

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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 1. Vicinity Map

Bay Rise Park - Biological Assessment Report (4113-02)
June 2025

Section 2. Project Description

2.1 Goals and Project Elements

The purpose of the project is to transform the vacant 10.2-acre bayfront parcel into a public nature and recreation park. The project would also restore a natural tidal marsh along this portion of the Bay shoreline.

The SPHERE Institute, the project applicant, secured an interim-term lease in October 2019 from the SLC to complete due diligence, design development, community outreach, regulatory agency coordination, and California Environmental Quality Act (CEQA) approval. Upon completion and approval of CEQA documents, SPHERE will execute a 49-year lease with the SLC.

The project's three main goals are to:

1. Enhance the user experience by creating a dynamic and engaging park that invites a broad range of users to explore, learn, and enjoy; creating access to the bay for people of all communities, age groups, and abilities; establishing safe, legible connections to the Bay shoreline and the Bay Trail; and developing flexible indoor and outdoor spaces as a hub for educational opportunities and community events.
2. Increase awareness of climate change and sea level rise by providing interpretive opportunities and programming that allow visitors to explore and learn about sea level rise resiliency and the impact of climate change on native ecosystems; creating biophilic experiences that help foster a sense of connection to the natural environment; and using innovative, sustainable materials and methods, including wildlife-friendly and bird-safe design. The project would also be designed to provide improved stormwater and bay water filtration functions.
3. Restore bayfront habitats by restoring appropriate bayfront native habitats, including tidal salt marsh and marsh-upland ecotone habitats, promoting native vegetation, and controlling non-native species.

To achieve these goals, the project's vision is to transform the property into public open space, with a focus on public access to the bay, tidal marsh habitat restoration, and sea level rise resiliency demonstration/education. The overall earthwork concept is to excavate the northern portion of the site and move that excavated soil to create a berm farther south, closer to the roadways. The excavation design grades would be set to convert existing ruderal upland habitat and low-quality seasonal wetland habitat to a high-quality tidal salt marsh ecosystem. An improved Bay Trail segment would be located atop the berm, overlooking the restored tidal marsh. The project would also include an education center building and would program educational events. Interpretive design elements would be installed throughout the park to educate park users about climate change and bay ecology in a manner that allows users of diverse ages, backgrounds, and abilities to engage with the site.

As currently envisioned, and as shown in Figure 2, the site would include the following project elements:

- Tidal salt marsh and ecotone habitat dominated by native plant species
- Rock configured within the tidal inlet to reduce wave propagation into the restored marsh
- Enhanced rocky shoreline habitat where the project is modifying the shoreline
- Coastal flood protection
- Sea level rise resiliency design
- Stormwater treatment wetlands
- Improved Bay Trail and secondary trails
- Bay Area Water Trail access and recreation (e.g., a new kitesurfing ramp and a new dual-purpose emergency/kayak ramp)
- Interpretive program
- Education center building
- Southern parking lot, adjacent to Airport Boulevard and Bay View Place
- Fire Department building
- Multi-purpose areas
- Oak woodlands
- Lawn
- Trash enclosure

2.2 Proposed Project Conditions

2.2.1 Wetland Restoration

The site is located within historical Baylands that were previously filled. The project would remove a portion of this fill and reconnect the excavated area to the bay's tides to restore an approximately 3-acre tidal salt marsh ecosystem. The restored ecosystem would be dominated by native plant species that would consist of approximately 1.5 acres of tidal salt marsh habitat below the current High Tide Line (HTL) and approximately 1.5 acres of associated marsh-upland ecotone habitat (ecotone) above the current HTL.

- Tidal salt marsh refers to the portion of the restored marsh ecosystem that would be flooded and drained by the twice daily high and low tides that would convey saline water to the marsh from the Bay through a constructed tidal inlet. Most of the tidal marsh would consist of a relatively flat marsh

plain and would be vegetated with native plants adapted to salty soils and regular tidal inundation. The tidal marsh would be located below the current HTL.

- Marsh-upland ecotone habitat refers to the transition zone of vegetation that would be located on the constructed earthen slope situated between the restored tidal marsh at the toe of slope and the upland habitat at the top of slope. This slope would also function as a coastal flood control berm and a new segment of the bay trail would be located at the top of slope. Ecotone vegetation would consist of a diverse transition of plant communities from those that are relatively salt and flood tolerant near the toe of slope/marsh to those that are more drought tolerant toward the top of slope. The proposed tidal marsh ecosystem restoration is consistent with regional bayland planning guidance for this portion of the Bay shoreline including: *Baylands Ecosystem Habitat Goals Project* (San Francisco Bay Area Wetlands Ecosystem Goals Project 1999), *Baylands Ecosystem Habitat Goals Project Science Update* (San Francisco Bay Area Wetlands Ecosystem Goals Project 2015), and the *San Francisco Bay Shoreline Adaptation Atlas* (Beagle et al. 2019).

The tidal marsh and ecotone design is modeled after natural Bay tidal salt marsh analogues, with the primary analogue consisting of the closest appropriate natural marsh to this site: Laumeister Marsh. Tidal salt marsh habitat would consist of a fully tidal mid- to high-marsh plain dominated by pickleweed (*Salicornia pacifica*) with a lower abundance of a diversity of native tidal salt marsh plant species. Tidal waters would be conveyed to and from the marsh plain on the flood and ebb tides by a dendritic tidal slough channel network connected to the Bay via a constructed tidal inlet. The marsh-upland ecotone would support a high diversity of native plant species occurring within sub-shrub and shrub habitat patches in a matrix of alkali meadow habitat. Overall, the habitat improvements would support a high diversity of plants and animals, including insect pollinators.

The existing ruderal habitat and the majority of the low-quality seasonal wetlands would be converted to restored tidal marsh and ecotone via mass grading. The mass grading effort would excavate the existing bay fill to tidal marsh elevations and place that fill landward to construct the ecotone slope up to the new Bay Trail segment. The tidal inlet to the Bay would be constructed through the site's existing concrete rubble shoreline protection to provide full tidal action to the restored tidal marsh. The existing shoreline protection would be left intact adjacent to the tidal inlet to serve as a wave break to protect the restored tidal marsh and the lower boardwalk from wind-wave erosion. The slope leading up from the marsh would be graded at a low, gradual angle (slopes varying from 4:1 to 10:1 [horizontal:vertical]) to restore ecotone habitat. The grading plan for both the restored marsh plain and the ecotone slope would provide the marsh ecosystem with resiliency to sea level rise, so that sea level rise is less likely to drown the vegetated marsh in the future. For example, the marsh plain would be constructed at elevations situated relatively high in the tidal frame and the ecotone would be built with a gradual, gentle slope (not steep) to allow the tidal marsh to adapt to sea level rise. The gradual ecotone slope from the marsh to the trail would provide horizontal space for the marsh to gradually Move upslope as sea level rises (i.e., landward transgression of marsh).

SAN FRANCISCO BAY

SANCHEZ CREEK

BAY VIEW PL

AIRPORT BLVD

LEGEND

- Existing BCDC 100-ft Shoreline Band
- Post-Project BCDC 100-ft Shoreline Band
- Existing Bay Jurisdiction Line (+6.22 ft)
- 2100 Post-Project Bay Jurisdiction Line
- Estimated Post-Project MHW (+6.22 ft)

- (A) Kitesurfing Ramp with Bay Overlook / Access
- (B) Western Lawn and Kitesurfing Rigging Area with Mow Curb
- (C) Restored Marsh
- (D) Ecotone
- (E) Education Center
- (F) Upper Boardwalk
- (G) Lower Boardwalk
- (H) FAA Tower and Enclosure
- (I) Water Rescue / Kayak Ramp
- (J) Eastern Lawn
- (K) Bay Trail
- (L) Fire Department Building
- (M) Trash Enclosure
- (N) Parking Lot (One Way)
- (O) Overlook Grove
- (P) Northeastern Shoreline Repair Area
- (Q) Shoreline Enhancement - Rip Rap Reinforcement
- (R) Flood Control Berm

N 0 40 80 160 Feet

DRAWING NAME: C:\Users\cstrasser\OneDrive - HT Harvey & Associates\Desktop\GoodSync\4113-02 Bay Rise DESKTOP\FIGURE\4113-02_RMP Figure 2_20250620.dwg

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Figure 2: Proposed Project Elements
Bay Rise Park - Biological Assessment Report (4113-02)
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Contaminant testing of soils at the marsh design grade found that certain contaminants exceed Regional Water Quality Control Board (RWQCB) screening criteria for the protection of aquatic animals. Therefore, the project would include over-excavation of contaminated soils and import and backfill of the restored marsh plain with clean soils that meet RWQCB screening criteria for wetland surface material to protect aquatic animals that would utilize the restored marsh. Soil stockpiling will occur at the project site as soon as soil that meets RWQCB screening requirements becomes available from a local borrow site or sites. To avoid impacts to any existing habitat, the soil will be stockpiled in the existing parking lots. Obtaining the soil in advance will help ensure that suitable soil is available when needed for the project to stay on schedule and could also help reduce overall environmental impact since the soil could be moved directly from the local borrow site to the project site.

There is also material onsite that contains non-hazardous concentrations of petroleum hydrocarbons and metals which would need to be disposed offsite at a Class II regulated landfill or buried under two feet (ft) of clean fill material. A small volume of soil containing hazardous concentrations of lead would need to be disposed of off-site at a Class I regulated landfill (Langan Engineering and Environmental Services, Inc. 2021). Following soil excavation and wetland surface soil import and placement, the restoration work would include intensive revegetation of native plant communities via seeding, planting, and vegetation maintenance during a short-term, three-year plant establishment period.

2.2.2 Shoreline Erosion Control and Living Shoreline Elements

Under proposed project conditions, the existing shoreline protection would be breached, allowing tides to inundate the restored tidal marsh excavation area. Waves produced both by moving vessels and wind shear could propagate through the constructed tidal inlet and potentially cause soil erosion in the restored marsh. The project would include several constructed elements to avoid and mitigate the effects of waves propagating into the site through the approximately 50-ft-wide tidal inlet:

- The orientation of the tidal inlet is to the northeast, to minimize directly coincident waves generated along the longest fetch, which is directly north. Fetch refers to a water surface area or length over which the wind blows and thereby generates waves. Angling the inlet away from the principal fetch direction serves to prevent the largest potential waves from entering the site.
- Once waves enter the inlet, the tidal inlet's design forces the waves to break and dissipate energy as the slope quickly ascends over a rip-rapped grade transition that curves toward the southeast and narrows before incoming water reaches the constructed marsh and associated channels. The grade transition ensures that waves break while entering the site, thereby dissipating energy through turbulence and other processes.
- The rip-rapped bottom and sides of the inlet also promote drag forces within the incoming flow that reduces wave energy, and a similar effect is added by directing the incoming flow around a bend in the inlet channel prior to it splitting into the marsh channel network and marsh plain areas of the site.

- The meandering of these marsh channels and the marsh vegetation along the channel margins, bounding berms, and marsh plain serve to further reduce the energy of incoming waves by increasing surface roughness and flow complexity.
- Raised topography at the southern portion of the marsh and the construction of a flood control berm provide a further layer of protection for critical infrastructure elements of the site.

The project would also improve shoreline erosion protection and enhance rocky intertidal habitat along portions of the bay shoreline and the Sanchez Creek bank adjacent to the proposed kitesurfing ramp, tidal inlet, and water rescue/kayak ramp. These shoreline improvements involve removal of existing concrete debris and replacement of this debris with imported hard substrate, placed below the HTL. Where the shoreline is being modified below the HTL, the habitat will be enhanced by replacing the concrete/asphalt debris of the existing shoreline with imported rock (i.e., rip rap, primarily 18 inches [in] in diameter, with small-size rock [<12 in] intermixed) and by including reef balls on the rock slope. Construction work in aquatic habitats below the HTL along the bay shoreline (also referred to as in-water work) would be done using coffer dams and dewatering to prevent ingress of Bay waters. Living shoreline habitat enhancements would be incorporated into all hard substrate that is placed for erosion protection as follows:

- Living shoreline intertidal habitat design elements incorporated into rock slope protection may include the addition of rugosity to the imported rock and/or concrete and reef balls to promote colonization by macroalgae and macroinvertebrates. Rugosity refers to small-scale variations in the surfaces of the rock and/or concrete creating a rough, ridged, or wrinkled surface located in the subtidal or low elevation intertidal zones to promote natural establishment of diverse assemblages of macroalgae and macroinvertebrates.
    - Reef balls will be incorporated within the elevation range of the target organisms to increase habitat quality and habitat heterogeneity. Reef balls are hemispherically shaped structures composed of marine-friendly concrete that are designed to mimic natural features. They include habitat characteristics such as structural complexity via interconnected holes and high rugosity, which are important for the establishment of intertidal, subtidal, and marine organisms. For more information, see H. T. Harvey & Associates (2025).
- Rock-crown revegetation with native plants on the upper elevation portions of these rock structures. Rock-crown revegetation refers to incorporation of soil and vegetation into the rock structure interstices above mean high water (MHW).

2.2.3 Operations/Public Access and Education

The project would improve access for the public to experience a wide variety of recreational activities. It would provide amenities for fishing, picnicking, playing lawn games, kitesurfing/windsurfing, kayaking/paddle boarding, jogging, bicycling, birdwatching, and attending educational events.

- **Public Access to Nature**—The project is designed to maximize visual access to the restored tidal marsh habitat and promote nature-based recreation and education. Several elevated site elements (e.g., boardwalks, education center deck, overlook grove, etc.) would provide observation points for birdwatchers, educational groups, and members of the public. The revegetation design is geared to provide the public with opportunities to experience and learn about native plants. The marsh, its associated marsh-upland ecotone, and the upland habitat would all be revegetated with native bay edge species. Planting in areas of high public use, for example around the education center, would be more "formal" but would still only include appropriate native bay edge species. The site would be designed to provide universal access to the education center and all trails and passive recreation areas. In terms of active recreation, both water access ramps would comply with Americans with Disabilities Act recommendations for water access ramps.

- **Education and Interpretive Program**—The project would provide opportunities for schools, non-profit organizations, and the general public to learn about sea level rise, bay ecology, and other relevant topics. The site would include an interpretive program to educate the public on the natural environment and explain the project's nature-based sea level rise adaptation strategy. The exterior portion of the program would focus on experiential and structural elements and may provide a few sign panels. The interior portion would include displays and likely a video/monitor educational component. The park's intentional topographic design would provide a visual example of the process of sea level rise, strategies for adapting shorelines to sea level rise, and would be incorporated into the interpretive program. In addition, educational programming and events would be hosted at the site. These educational programs would be led by teachers or docents and include activities and lectures above and beyond the interpretive program.

- **Bay Trail and Other Pathways**—The project would re-route and improve the Bay Trail, which would run along the elevated ridge of the berm, offering views of the bay and the restored tidal marsh habitat below. The site's education center would provide a stopover with restrooms, a water re-filling station, and other amenities for joggers, walkers, and cyclists. Paths and boardwalks would branch off the Bay Trail to provide access within the park. The parking lot would also improve public access to this section of the Bay Trail. The site's secondary pathways provide direct access to the bay edge, including the upper and lower boardwalks in the northeast corner, and the trail spur on the wave break at the northern edge of the site. Other secondary pathways provide safe access from the sidewalk and southern parking lot to the site's key elements.

- **Water Access**—The project would include two separate access points for the Bay Area Water Trail – at the eastern side for kayaking, fishing, and general Bay access, and on the western side for kitesurfing and windsurfing access. The water rescue/kayak ramp in the northeast corner of the site, which will be used by the fire department in case a water rescue is needed, will also be accessible to the public for pedestrian and water sport access to the water's edge and will improve access for fishing (a popular activity at the site). The water rescue/kayak ramp would include landings and handrails (at the upper elevations) to allow public access to the Bay, and the kitesurfing ramp would include a lawn

lay-down area for setting up equipment. The parking lot would also improve access for these water-based activities.

- **Education Center and Adjacent Eastern Lawn—**
    - The building would include two exhibit galleries, with a dividing operable wall system allowing the galleries to be merged into one larger space. It includes an associated northern and western deck and eastern/southern plazas.
    - The education center galleries would be open to the public 7 days/week from approximately 9am to 5pm.
    - Along the east side of the building, a takeaway café counter would serve coffee, sandwiches, etc. that can be consumed in the park or taken to go. The café would not provide sit-down menu service. It would be open 7 days/week from approximately 8am to 3pm with possible extended summer hours from 7am-3pm.
    - The park restrooms will be on the west side of the building and are accessible from the building's exterior. These exterior park restrooms would open at the same time as the café and stay open until dusk (when the parking lot closes).
    - The building's western deck will also be publicly accessible during park hours.
    - The eastern lawn is located between the education center and Sanchez Creek and would provide room for picnicking, lawn games, and a variety of activities and events.
- **Events**—The project's education center would host educational programs and other events.
    - Events may include the following:
        - Education: school group, community group, speaker series, scientific research
        - Recreation: sports competition, group sports lesson, group kayak outing, nature group outing
        - Performance: music, theater, movie, art
        - Community: farmer's market, food truck hub, craft fair, collectible/antique fair, art/wine festival
        - Private: wedding, birthday party, family reunion, faith-based event (e.g. bar mitzvah)
        - Corporate/Nonprofit/Government: meeting, conference, banquet
    - Events may temporarily limit public access to portions of the education center (one or both galleries, the lobby, and/or the interior restrooms) and its associated exterior spaces (northern deck, eastern plaza, and/or eastern lawn). During open hours, the public would always have access to the Bay Trail, western deck, Bay Area Water Trail access points, exterior park restrooms, café counter, parking lot, and western lawn.

- **Parking**—The site would include an entry drive and a one-way parking lot extending from the entry at Airport Boulevard, exiting on Bay View Place. The parking lot would be gated on both sides for security and would be open 7 days/week from dawn to dusk. Parking would remain open to the public during education center events, which would utilize valet/shuttle services.

2.2.4 Coastal Flood Protection

As described above, the project will use a portion of the fill excavated in creating the marsh to construct an earthen slope on the southern portion of the site. The earthen slope will be engineered to function as a coastal flood control berm. The elevation of the berm will be coordinated with the San Mateo County Flood and Sea Level Rise Resiliency District (OneShoreline), which is currently developing flood control solutions for the region as a whole. The OneShoreline regional solution will be required to complete the coastal flood protection in the project vicinity, and the project is being engineered to allow for future integration with this regional solution.

2.2.5 Views

Views to the bay would be improved, both from Airport Boulevard and from within the park. The existing vegetation along the site's southern perimeter currently obstructs views of the bay from Airport Boulevard. This vegetation would be removed, and strategic view corridors would be provided around the education center to highlight the project's unique bayside setting. Even in locations where the bay is not directly visible, the open unobstructed views through the site would indicate the waterfront (because there is no development bayward of the site, leading to long views across the bay). Within the park, views to the bay would be highlighted from:

- the Bay Trail and overlook grove, both located on the created berm (proposed to be approximately 9-10 ft above current grade),
- the education center, located centrally to provide views of the restored marsh, tidal inlet, and the bay beyond,
- the upper boardwalk in the northeast portion of the site,
- the deck at the top of the water rescue/kayak ramp along Sanchez Creek,
- the kitesurfing ramp, bay overlook/access and seating, and lawn in the northwest corner of the site.

2.2.6 Lighting

The project would include outdoor lighting in the landscape and along the exterior of the education center. Lighting goals are based on safety, security, and sensitivity to the adjacent restored habitat:

- Human experience
    - Highlight paths, wayfinding, features and destinations
    - Design for scene experience

- Provide for safety and security

- Ecology
  - Shield lights to minimize glare; minimize outdoor lighting in sensitive areas; limit lighting duration
  - Use lowest necessary intensity; warm-color lights
  - Reduce high contrast; use specialized lighting technologies
- Energy efficiency

Automated interior blackout shades would be installed on all windows on the education center's north/ northwest and east facades as well as the galleries' south facing clerestory windows. These shades would be programmed to close when the building is not in use and between 10pm and sunrise.

2.2.7 Bird-Safe Design

The project would incorporate bird-safe glazing on certain portions of the education center to reduce the frequency of bird collisions with glazed facades. The minimum extent of the proposed bird-safe glazing treatment on the building's facades would include the large glass panels on the north/northwest and east facades. Bird-safe glazing treatments may include fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing, or ultraviolet patterns visible to birds. The bird-safe pattern would have vertical elements at least ¼-in wide at a minimum spacing of four inches, and horizontal elements at least ⅛-in wide at a minimum spacing of two inches.

2.3 Project Construction and Schedule

Project construction is anticipated to occur in three phases over the course of approximately three years and would likely require the following equipment (Table 1). The construction timeline and phasing of elements is subject to change. Temporary impacts initiated in each phase will be restored within 1 year of initial disturbance, during the same phase. Construction will occur only during daylight hours.

The project will require installation of piles to provide a stable foundation for construction of the education center, kitesurfing ramp, upper boardwalk, and water rescue/kayak ramp. A combination of temporary and permanent sheet pile/cut off walls will be required along the edge of the project site to allow for installation of the marsh and water access ramps, restricting tidal and groundwater from entering the work area. For tidal marsh creation and transition zone restoration (Phase 1), dewatering will only occur within the sheet-piled boundary, landward of the HTL, and not in active Bay waters. For tidal inlet construction (Phase 2), a secondary row of sheet piles will be installed during very low tide conditions, creating an isolated work zone adjacent to the Bay waters, and dewatering will occur within the enclosed sheet pile area. Similarly, sheet pile installation and dewatering will occur at the kitesurfing and water rescue/kayak ramps (Phase 1). Vinyl sheet walls will be installed in the flood control berm to prevent seepage.

Table 1. Project Construction Schedule and Equipment[1]

Phase	Site Element	Equipment Used
Phase 1 (anticipated start 2025)	• Rough grading to excavate marsh, import and place clean wetland surface soil (without inlet breach) and construct tidal marsh and upland fill areas (marsh will not be breached to tidal action in Phase 1) • Flood control berm with vinyl sheet pile wall • Kitesurfing ramp and associated rip rap, and reef ball installation • Water rescue/kayak ramp and associated rip rap, and reef ball installation • Interim seeding	Excavators, graders, rubber-tired dozers, sheepsfoot soil compactor, box/straight-bladed earth moving equipment, tractors, highway dump trucks, water truck, street sweepers, surfacing equipment, dewatering pump, pile hydraulic vibrodiver with hammer rig, forklift, crane
Phase 2 (anticipated start 2026)	• Finish grading of marsh (including tidal channel excavation) and ecotone • Construct lower and upper boardwalk • Tidal inlet construction including installation of reef balls and breaching of marsh to tides • Northeastern shoreline repair area • Revegetation in marsh, ecotone and shoreline planting areas below TOB • Bay Trail and parking lot construction • Education center foundation and slab	Excavators, graders, rubber-tired dozers, sheepsfoot soil compactor, tractors, highway dump trucks, dewatering pumps, water truck, forklift, bore/drill rigs, concrete trucks, pavers, rollers, aerial lifts
Phase 3 (anticipated start 2027)	• Education center completion • Eastern and western lawn	Excavators, rubber-tired dozers, tractors, highway dump trucks, pavers, rollers, skid steer loader, crane, forklift, aerial lifts, generator set, welders, concrete trucks, pumps, air compressors

[1] For more detail on construction methods and equipment used see Section 2.3 in H. T. Harvey & Associates (2025).

Auger cast piles will be used at the education center; this type of pile does not require pile driving. Vibratory pile driving will be used to the extent feasible to install the other piles and walls. However, the presence of very dense soils at approximately 43 ft deep will likely require switching to impact pile driving where the soils become too dense for vibratory pile driving. Similarly, the presence of large chunks of concrete along the Bay Edge may require switching to pile driving to install some portion of the walls.

Table 2 provides details on pile installation by location. All steel pipe piles to be installed will be 24-in diameter; it is estimated that six of the piles at the water rescue/kayak ramp and five at the kitesurfing ramp will be in-water (in Bay-saturated soils), the remaining 22 will be land-based (Figure 3).

Table 2. Pile Type by Location

Location	Type of Pile	Approximate Duration	Approximate Pile Quantity*
Sheet pile walls along shoreline	Pile Hydraulic Vibrodriver with Hammer Rig	3 weeks (90% vibratory 10% driving time)	1,500 Linear Feet
Vinyl sheet walls in flood control berm	Pile Hydraulic Vibrodriver with Hammer Rig	2 weeks (90% vibratory 10% driving time)	1,050 Linear Feet

Location	Type of Pile	Approximate Duration	Approximate Pile Quantity*
Water rescue/kayak ramp	Vibrodriven steel pipe piles to extent feasible and impact if necessary	2 weeks (90% vibratory 10% driving time)	20
Kitesurf ramp	Vibrodriven steel pipe piles to extent feasible and impact if necessary	1 week (90% vibratory 10% driving time)	9
Boardwalk/overlook	Vibrodriven steel pipe piles to extent feasible and impact if necessary	1 week (90% vibratory 10% driving time)	3
Education and event center	Auger cast	2 weeks	65

* Exact quantity of piles may change after detailed engineering has been completed

2.4 Adaptive Management and Mitigation Plan and Applicable Best Management Practices

Construction work in aquatic habitats below the HTL along the bay shoreline (also referred to as in-water work) would be done using coffer dams and/or sheet piles, installed during low tide at strategic points around the proposed structures. Once the coffer dams/sheet piles have effectively isolated the work area, dewatering pumps will be used as necessary to prevent ingress of Bay waters. Shoreline treatments and pile driving in aquatic habitats would impact special-status fish, critical habitat, and EFH. Work in tidal aquatic habitats, including construction of the kitesurfing ramp, bay overlook/access, tidal inlet, water rescue/kayak ramp and the northeastern shoreline repairs, would adhere to the following Best Management Practices (BMPs) to minimize potential impacts:

- Personnel involved in in-water construction and deconstruction activities shall be trained by a qualified biologist (experienced in construction monitoring, as approved by the City/Agency) in the importance of the marine environment to special-status fish and birds and the environmental protection measures put in place to prevent impacts to these species, their habitats, and EFH;
- The project shall employ standard construction BMPs to treat and minimize runoff, as coordinated with RWQCB. These BMPs may include but are not limited to the installation of temporary turbidity curtains to minimize sediment transport, off-site deposal of litter and construction debris, and prevention of excavated soils entering the Bay and Sanchez Creek;
- All in-water work shall be conducted between June 1 and November 30, avoiding the seasonal period when juvenile and adult salmonids are moving through the estuary or when groundfish and prey species could be directly impacted. Construction will be limited to daylight hours only and pile driving will be performed at low tide and within the coffer dam/sheet pile-isolated work area;
- Fish shall be excluded from the work area prior to in-water work. In-water construction will be initiated at low tide, prior to which qualified biologists shall use a block net to encourage fish to leave the work area. Temporary turbidity curtains will then be installed (at low tide) to maintain fish

exclusion, which would be removed after work is completed. Relocation of fish is not anticipated and will not be required for in-water construction activities; and

- A qualified biologist shall monitor construction of all in-water work along the bay shoreline to ensure that no fish are remaining in the work area and that no marine mammals or fish move into the work area. If fish or marine mammals are observed within the work area, the monitor shall direct the contractor to wait until the animals leave the area or pause work if animals move into the area.

In addition to the BMPs described above, the following sound level minimization and protection measures would minimize the risk of impacts to threatened and endangered species and their proposed and designated critical habitat:

- To the extent feasible, all piles shall be installed with a vibratory pile driver. An impact pile driver shall only be used when necessary to complete installation of piles in accordance with seismic safety or engineering criteria;
- A biological monitor or team will be present onsite during work hours when and if impact hammer pile driving occurs, to staff the hydroacoustic monitoring equipment and record marine mammal use within the action area. The monitor(s) will be responsible for ensuring that all pile driving work is conducted according to permit terms and conditions. In addition, contractors will consult with the biological monitor(s) to ensure that any changes to means and methods are in compliance with permit conditions relating to the protection of estuarine resources;
- A bubble curtain will be placed around each pile during in-water pile driving activities that use an impact hammer to reduce noise levels to less than would result in injury or mortality of fish species. The bubble curtain will reduce the noise levels by up to 15 decibels (dB);
- Cushion blocks will also be used if an impact hammer is required to finish driving any piling that refused during vibratory pile driving. The 12-in thick cushion blocks will reduce noise levels by 4 to 5 dB;
- All impact pile driving activities will incorporate a "soft start" approach whereby the pilings are lightly tapped before the full hammer strength is applied. The first few taps of the hammer on the piling should deter fish away from the pilings before full impact hammer strength is applied, reducing the potential for fish to be present and exposed to potential injury during full hammer strikes;
- Hydroacoustic monitoring will be conducted at 10 m from all pile driving activities if an impact hammer is used to set the pilings. Impact hammer pile driving will cease for at least 12 hours if the cumulative sound exposure levels (SEL) reach 186.5 dB at 10 m regardless of the number of strikes;
- A debris containment structure (i.e., floating boom) will be installed outside of the pile driving area to ensure that any floating debris that enters the water will be contained for later collection and disposal; and

- A full complement of oil spill clean-up equipment will be on site and available for immediate deployment should there be an accidental discharge of fuel, lubricant, or hydraulic oils.

Project performance and success criteria include elements contributing to the tidal marsh restoration and the enhanced rocky shoreline, such as erosion/geomorphic change, final acreage of restored habitat, and percent cover of native and invasive plants, algae, and sessile invertebrates (for details see Sections 8 and 9 in H. T. Harvey & Associates 2025). If the site fails to meet final success criteria, adaptive management actions will occur, potentially requiring the use of coffer dams or other water control equipment and/or the replacement of rip rap and reef balls. In the case of in-water coffer dam installation, the same fish exclusion method as described above will be utilized, and vibratory sheet pile driving will minimize acoustic impacts (see Section 5.2 below). Replacement of rip rap and reef balls would occur at low tide windows and will use the same general methods and approach approved for initial construction. Therefore, any impacts on listed species, designated critical habitat, or EFH from adaptive management actions taken will be the same as the impacts from proposed Project-related activities (see Section 6 for effect determinations).

SAN FRANCISCO BAY

Pile, typ
8 Total at Kite Surf Ramp

Pile, typ
3 Total at Boardwalk
Overlook

Pile, typ
22 Total at Kayak /
Rescue Ramp

Sheet Pile along
Shoreline

38 Total Auger Cast
Piers Along Length of
Boardwalk

Sheet Pile along
West Property

65 Total Piles at Education
and Event Center

SANCHEZ CREEK

Sheet Pile along
Bay Trail

BAY VIEW PL

AIRPORT BLVD

N

0 40 80 160
Feet

LEGEND

- High Tide Line (= Limit of Aquatic Habitat)
- Top of Bank Bay Shoreline (= Limit of RWQCB Jurisdiction)
- Top of Bank (= Limit of CDFW and RWQCB Jurisdiction)
- BCDC Existing Jurisdiction Line

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Figure 3: Pile Locations
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Section 3. Environmental Baseline—Status of the Species and Critical Habitat in the Action Area

3.1 Environmental Baseline

Conditions on the site and surrounding land were created by the Anza Corporation in the mid to late 1960s by placement of fill without authorization across approximately 150 acres of former Bay habitats. Following a lawsuit, this land was divided between the Anza Corporation and SLC. The project parcel is owned by SLC and was never developed. It is a vacant lot consisting of:

- Weedy (ruderal) upland habitat occupying the majority of the site with a few non-native shrubs and trees scattered around the site's periphery
- Unimproved Bay Trail along the northern edge
- Unused gravel "parking lot" at the western edge, adjacent to the Kincaid's restaurant paved parking lot
- Abandoned paved parking lot and other hardscape infrastructure related to the former Sherman Restaurant, which was located on a boat moored in Sanchez Creek, along the eastern edge
- Federal Aviation Administration tower, located in the eastern parking lot, associated with San Francisco International Airport. The Federal Aviation Administration has an existing lease and easement with SLC for this infrastructure.

The northern edge of the site borders the tidal waters of the Bay and is subject to considerable erosive force from wind-driven waves. The existing shoreline erosion protection consists of large concrete slabs, roadbed of the former San Mateo Bridge, placed onsite when the bridge was rebuilt. The fill soil was placed to create the Anza Area of Burlingame as described above. The slabs were stacked vertically to create the Anza Area boundary, and fill was then placed behind them. Along the northern property line, the concrete slabs have shifted somewhat over time and smaller rip rap material was placed towards the toe of the slope. Along Sanchez Creek, the concrete slabs are still stacked vertically with, in some locations, sakrete concrete placed above them at or near the top of bank. The site's elevations are above the influence of regular tidal inundation from the bay. Under the current conditions, it is likely that the site would potentially flood during a 50-year coastal flood event (i.e., a flood event that has a 2% chance of occurrence in any given year).

Reconnaissance-level surveys identified four habitat type/land uses within a biological study area defined as the project parcel plus an approximately 100-ft buffer into the open water habitat of the Bay and Sanchez Creek: ruderal grassland (5.88 acres), developed/landscaping (3.04 acres), seasonal wetland (0.40 acre), and open water (3.50 acres) (Figure 4).

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Figure 3. Biotic Habitat Map

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3.2 Action Area

For the purposes of ESA Section 7 consultations, the "action area" as defined in 50 CFR 402.02 includes all areas in which federally listed species would be affected directly and indirectly by the proposed action, and where changes from the proposed action are measurable and detectable. The action area is further defined as the geographic extent of the potential physical, biological, and chemical effects of the proposed project above the baseline conditions and extends to a point where no measurable effects from the proposed activities occur. For the present BA, the action area is defined as the 10.2-acre bayfront parcel and an additional 150 m surrounding the shoreline extending into the Bay, determined by potential acoustic disturbance levels (further described in Section 5.1.1). The project is located at 410 Airport Boulevard, Burlingame, California, surrounded by the City of Burlingame to the south and west, Sanchez Creek to the east, and the Bay to the north. The SPHERE Institute is leasing the vacant parcel from SLC.

3.3 ESA-Listed Species, Critical Habitat

This section provides a summary of species identified as threatened, endangered, candidate, or proposed for ESA listing and critical habitats, as defined by the ESA 16 USC § 1531 et seq. Endangered species and threatened species and critical habitat are defined to include the following:

- Species listed as threatened or endangered under the ESA;
- Areas or communities identified as critical habitat under the ESA;
- Candidate species for listing as threatened or endangered under ESA; and
- Species proposed for listing as threatened or endangered under the ESA.

Federally listed, proposed, and candidate species regulated by NMFS and USFWS that could potentially occur within the action area were identified by reviewing relevant tools and literature, including federal register notices, technical reports, and peer-reviewed literature. Species and habitat information was also obtained from the NMFS EFH Mapper (NMFS 2021a) and the USFWS Information for Planning and Conservation (USFWS 2020a). The potential for occurrence (present, possible, unlikely, absent) in the action area were determined using this information. The nineteen federally listed or proposed for listing species that could potentially be affected by the proposed project and have potential to occur within the action area include:

- Salt march harvest mouse;
- California least tern;
- California Ridgway's rail;
- Marbled murrelet;
- Western snowy plover;

- Northwestern pond turtle;
- San Francisco garter snake;
- Monarch butterfly;
- Fountain thistle;
- Marin dwarf-flax;
- San Mateo thornmint;
- San Mateo woolly sunflower;
- White-rayed Pentachaeta;
- North American green sturgeon, southern DPS (sDPS);
- Steelhead, CCC DPS;
- Longfin smelt, SFBD DPS; and
- Sunflower sea star.

In addition, critical habitat is present in the action area for green sturgeon and CCC steelhead. Table 3 provides a summary of these ESA-listed taxa. Background information on each of the listed species, critical habitat, as well as likelihood of occurrence, timing and distribution, and foraging behavior are included.

Most of the ESA-listed taxa presented in Table 3 are not expected to occur on the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat. Animal species not expected to occur on the project site for these reasons include the salt marsh harvest mouse (*Reithrodontomys raviventris*), western snowy plover (*Anarhynchus nivosus nivosus*), California's Ridgway's rail (*Rallus obsoletus obsoletus*), San Francisco garter snake (*Thamnophis sirtalis tertrataenia*), and northwestern pond turtle (*Actinemys marmorata*). Additionally, no suitable habitat for any federally listed plant species was identified at the project site (H. T. Harvey & Associates 2024). The species further analyzed in this section were limited to species that could reasonably be expected to occur within the action area and potentially affected by the project.

3.3.1 California Least Tern

California least terns are small, ground nesting seabirds whose breeding range is restricted to sandy beaches, bays, and lagoons on the Pacific Coast from the Bay Area south to Baja California. The subspecies has been listed as endangered under the ESA since 1970. At the time of listing, there were an estimated 300 pairs distributed among 14 nesting sites in San Diego and Orange Counties, and at a single northern California site at Bair Island in San Mateo County (Craig 1971). With increasing management, the California least tern population has seen recovery throughout the late 1990's and 2000's (USFWS 2006), although in the last decade there have been declines in breeding pairs (Sin et al. 2024).

3.3.1.1 Timing and Distribution

Adults arrive at California nesting sites in late April, and the breeding season lasts through the spring and summer. Terns typically leave California breeding sites by September and head towards wintering locations in Central and South America (Thompson et al. 2010). There are often two waves of nesting during this time period, with renesting often a result of predation and human disturbance (Massey and Atwood 1981). It takes two to three years for California least terns to mature.

3.3.1.2 Use of Project Area

In Northern California, the California least tern primarily nests at Alameda Point, in northern South San Francisco Bay. They have also been documented nesting on various salt pond levees; in 2017, a breeding colony was first observed in the Eden Landing Ecological Reserve, west of Hayward (San Francisco Bay Bird Observatory 2024). For nesting, least terns require tracts of open sand or fine gravel substrate with sparse vegetation near open water (Feeney 2000). No suitable nesting habitat is present on or near the project site and they are not expected to breed or occur in large numbers in the action area.

3.3.1.3 Foraging Behavior

Individuals forage over shallow and deep water for small fish in surface waters. From dropped prey studies, their diets are primarily comprised of silversides (jacksmelt and topsmelt), northern anchovy, Pacific herring, and surfperch (Elliot et al. 2007). Foraging habitats range from shallow marsh channels to the open ocean, as chicks mature and reach fledging age (Collins et al. 1979). Most offshore foraging occurs within 1 mile (mi) of shore (Atwood and Minsky 1983).

3.3.2 Monarch Butterfly

The monarch butterfly was first petitioned to be listed on the ESA on August 26, 2014. On December 17, 2020, it was determined that the species warranted listing as endangered or threatened under the ESA, and currently remains a candidate species (USFWS 2020b). It may potentially be listed as endangered or threatened within the timeline of the proposed project. Adults of the monarch butterfly are large and conspicuous, with bright orange wings surrounded by black border and veins. Reproduction is dependent on the presence of milkweed, the sole food source for larvae.

Monarchs exhibit long-distance migration and overwinter as adults at forested locations in Mexico and California. Monarch butterflies are not known to form roost aggregations along the Bay shoreline in San Mateo County, and there is no expectation that such roosts will form in the future on or near the project site. Further, this species is not expected to breed on the project site due to the absence of milkweed, its larval host plant. Rather, monarch butterflies are expected to occur on the site only as occasional visitors during fall and spring migration. Adult monarch butterflies feed on nectar from a wide variety of flowers and occur in a variety of habitats.

Table 3. Endangered Species Act-Listed, Proposed, or Candidate Species with Potential to Occur within the Action Area

Common Name	Scientific Name	Federal Status	State Status	Potential for Occurrence	Habitat	Timing/Comments
Salt marsh harvest mouse	*Reithrodontomys raviventris*	E	E; CDFW P	A	Diked and tidal wetlands supporting a mix of halophytic vegetation including common pickleweed, alkali heath (*Frankenia salina*), and fat hen (*Atriplex prostrata*).	The closest occurrences were in the early 1990s approximately 8 miles south of the project site at Bair Island, and recent live-trapping documented salt marsh harvest mice in small numbers at Faber Marsh, over 14 miles south of the project site (Statham et al. 2021). The closest potential habitat is located in a small patch of wetland habitat approximately 0.5 miles southeast of the site, west of the Peninsula Humane Society, and in a small patch of wetland habitat associated with Sanchez Marsh, approximately 0.5 miles west of the project site. However, despite their proximity to the project site, this species is not known to occur on the San Francisco Peninsula north of the San Mateo Bridge (California Natural Diversity Database 2023). No suitable habitat is present on the project site; thus, this species is determined to be absent. Critical habitat has not been designated.
California least tern	*Sternula antillarum browni*	E	E; CDFW P	U	Nests along the coast on bare or sparsely vegetated, flat substrates. In San Francisco Bay, nests primarily on an old airport runway at the former Alameda Naval Air Station. Forages for fish in open waters.	Absent as breeder. Least terns are not known or expected to nest on or adjacent to the project site, and this species does not currently nest in San Mateo County. Least terns forage over open water habitat off the shoreline near Coyote Point less than one mile east of the project site, and likely forage in small numbers in open water adjacent to the project site. However, no suitable nesting habitat is present on the site, and closest known breeding colony occurs at Alameda Point, over 13 miles north of the project site. Critical habitat has not been designated.
California Ridgway's rail	*Rallus obsoletus obsoletus*	E	E; CDFW P	A	Salt marsh habitat dominated by pickleweed and cordgrass.	Resident in salt marsh habitat in San Mateo County, particularly where broader areas of well-developed tidal salt marsh are present. The species has been documented in Sanchez Marsh approximately 0.5 miles west of the site, within 3

Common Name	Scientific Name	Federal Status	State Status	Potential for Occurrence	Habitat	Timing/Comments
						miles southeast of the project site, and 4.75 miles north of the project site (California Natural Diversity Database 2023). However, no suitable marsh habitat occurs on or adjacent to the project site; thus, this species is determined to be absent. Critical habitat has not been designated.
Marbled murrelet	*Brachyramphus marmoratus*	T	E	A	Breeds in lower montane coniferous forest. Feeds coastal near-shore. Nests in old-growth redwood-dominated forests, up to 6 miles inland, often in Douglas-fir.	Nearest breeding area is south of San Francisco Bay in the Santa Cruz Mountains; nest in forests from March to October (Felis et al. 2023). Forages primarily in nearshore coastal ocean waters. There is very limited occurrence in the San Francisco Bay outside of the breeding season and all records inside the Golden Gate have been observed north of the Bay Bridge (eBird 2024). Thus, this species is determined to be absent. The action area does not overlap with critical habitat designated for this species.
Western snowy plover	*Anarhynchus nivosus nivosus*	T	CSSC[1]	A	Sandy beaches on marine and estuarine shore and salt pannes in San Francisco Bay saline managed ponds.	No suitable habitat is present on the project site. In the project vicinity, the western snowy plover is restricted to broader coastal beaches and salt panne habitat within former salt ponds. Snowy plovers may occasionally forage along the sandy shoreline of Coyote Point less than one mile east of the project site, but this species is not expected to occur on or close enough to the site to be impacted by the project. Determined to be absent from the project site. Critical habitat is designated elsewhere in South San Francisco Bay, but not in the action area.
Northwestern pond turtle	*Actinemys marmorata*	P	CSSC	A	Permanent or nearly permanent water in a variety of habitats with abundant emergent or riparian vegetation. Females	The closest known occurrence is located approximately 4.5 miles west of the project site at Crystal Springs Reservoir and potentially suitable aquatic habitat is present approximately 1.3 miles east of the project site just south of the Coyote Point Yacht Club. However, no suitable aquatic

Common Name	Scientific Name	Federal Status	State Status	Potential for Occurrence	Habitat	Timing/Comments
					lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas (Jennings and Hayes 1994).	habitat is present on the project site; thus this species is determined to be absent. Critical habitat has not been designated.
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	E	E; CDFW P	A	Prefer densely-vegetated ponds with an open water component near open hillsides where they can sun themselves, feed, and find cover in rodent burrows (Larsen 1994, in USFWS 2007). May also occupy ponds or pools in or next to streams, lakes, and reservoirs. The species prefers a dense cover of vegetation, such as willows (*Salix* spp.), bulrushes (*Schoenoplectus* spp.), and cattails (*Typha* spp.)	This species only occurs at very few locations in San Mateo County. The only known population on the east side of the San Francisco peninsula occurs near the San Francisco International Airport, 4 miles to the northwest. No suitable habitat is present on the project site, and the site is isolated from the nearest known remaining populations by extensive urbanization. Thus, this species is determined to be absent. Critical habitat has not been designated.
Monarch butterfly	*Danaus plexippus*	C	None	U*	Adults forage on a wide variety of flowers for nectar and occur in a variety of habitats, but egg-laying and larval development occurs on milkweeds, which are more limited in distribution. Typically	Absent as breeder. The closest documented overwintering sites are located along the western coastline in San Mateo County and across the San Francisco Bay in Alameda County, approximately 10 miles west and east of the site. However, only two overwintering sites in San Mateo County have been reported to be active with very low numbers as of 2020, and similarly low numbers were reported at the Alameda County site (Xerces Society 2020). Ostensibly suitable

Common Name	Scientific Name	Federal Status	State Status	Potential for Occurrence	Habitat	Timing/Comments
					roosts on the branches and leaves of trees which receive appropriate sun exposure and thermal buffering.	roosting and foraging habitat for migrants is present within the trees along the southern border and throughout the ruderal grassland. One individual was incidentally observed at CuriOdyssey in 2017 (Rios 2017), approximately 1 mile east of the project site. No milkweed has been observed on the project site, so this species is not expected to breed here. Individuals may occur on the project site as occasional migrants, but this species is not expected to form large roosts or to breed on the site. Critical habitat has not been designated.
Fountain thistle	*Cirsium fontinale var. fontinale*	E	E	A	Chaparral (openings), cismontane woodland, meadows and seeps, and valley and foothill grassland.	No suitable habitat is present on the project site. Additionally, this species was not observed during April 2021 or May 2020 surveys (H. T. Harvey & Associates 2024). Thus, this species is determined to be absent. Critical habitat has not been designated.
Marin dwarf-flax	*Hesperolinon congestum*	T	T	A	Chaparral, valley and foothill grassland.	No suitable habitat is present on the project site. Additionally, this species was not observed during April 2021 or May 2020 surveys (H. T. Harvey & Associates 2024). Thus, this species is determined to be absent. Critical habitat has not been designated.
San Mateo thornmint	*Acanthomintha obovate ssp. duttonii*	E	E	A	Chaparral, valley and foothill grassland.	No suitable habitat is present on the project site. Additionally, this species was not observed during April 2021 or May 2020 surveys (H. T. Harvey & Associates 2024). Thus, this species is determined to be absent. Critical habitat has not been designated.
San Mateo woolly sunflower	*Eriophyllum latilobum*	E	E	A	Cismontane woodland (often serpentinite, roadcuts), coastal scrub, and lower	No suitable habitat is present on the project site. Additionally, this species was not observed during May 2020 surveys (H. T. Harvey & Associates 2024). Thus, this species is determined to be absent. Critical habitat has not been designated.

Common Name	Scientific Name	Federal Status	State Status	Potential for Occurrence	Habitat	Timing/Comments
					montane coniferous forest.	
White-rayed Pentachaeta	*Pentachaeta bellidiflora*	E	E	A	Cismontane woodland, and valley and foothill grassland (often serpentinite).	No suitable habitat is present on the project site. Additionally, this species was not observed during April 2021 or May 2020 surveys (H. T. Harvey & Associates 2024). Thus, this species is determined to be absent. Critical habitat has not been designated.
Green sturgeon -southern DPS	*Acipenser medirostris*	T	CSSC	Po	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	Green sturgeon occur in the San Francisco Bay between the spring and fall (Kelly et al. 2007). Spawning of this southern DPS occurs predominately in the upper Sacramento River (Adams et al. 2007). Green sturgeon have rarely been captured in South San Francisco Bay (Interagency Ecological Program for the San Francisco Estuary 2022); however, this species may occasionally forage within the aquatic portions of the project site, albeit infrequently and in low numbers given the shallow nature of aquatic habitats within the study area. All tidally influenced areas of the Bay, up to the elevation of mean higher high water and including the action area, are within designated critical habitat.
Steelhead – CCC DPS	*Oncorhynchus mykiss irideus*	T	None	U*	Coastal streams and drainages including San Francisco Bay, and conditions that allow migration between spawning and marine habitats.	CCC steelhead occur in the San Francisco Bay and are known to spawn in the San Mateo Creek watershed (Spence et al. 2008, Becker and Reining 2008), and adults and yearling juveniles may be present as occasional foragers in adjacent open waters of the San Francisco Bay and Sanchez Creek. This species may occasionally forage within the aquatic portions of the project site, especially during migration between marine foraging areas and freshwater spawning areas, albeit infrequently and in low numbers given the shallow nature of aquatic habitats within the action area.

Common Name	Scientific Name	Federal Status	State Status	Potential for Occurrence	Habitat	Timing/Comments
						All tidally influenced areas of the Bay, up to the elevation of mean higher high water and including the action area, are within designated critical habitat.
Longfin smelt – SFBD DPS	*Spirinchus thaleichthys*	E	T	Po	Spawns in fresh waters in the upper end of the San Francisco Bay and the southern portion of the South San Francisco Bay; may occur year-round in the South Bay.	SFBD longfin smelt occur in the San Francisco Bay, and adults and juveniles may be present as occasional foragers in the open bay waters and Sanchez Creek, adjacent to the project site. However, these open waters do not provide suitable spawning or early (brackish) rearing habitat for this species, and it is likely that longfin smelt only occur in small numbers. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris. Critical habitat has not been designated.
Sunflower sea star	*Pycnopodia helianthoides*	P	None	A	Rocky substrates	Prefers rocky substrates that occur outside of the bay mouth; presence has not been documented inside San Francisco Bay. No observations in Marin, San Francisco, or San Mateo Counties since the onset of sea star wasting syndrome in 2013/2014. Thus, this species was determined to be absent. Critical habitat has not been designated.

Federal Status: Listing status under the Federal Endangered Species Act: E (endangered); T (threatened); C (candidate); P (proposed).

State Status: Listing status under the California Endangered Species Act: E (endangered); T (threatened); C (candidate); and California Department of Fish and Wildlife (CDFW) Species of Special Concern (CSSC). CDFW Watch List (CDFW_WL) and CDFW Fully Protected (CDFW_P).

Potential for Occurrence in the project area: A (Absent), U (Unlikely), Po (Possible), Pr (Present). * indicates there is a seasonality component to occurrence.

Other table notes:

[1] CSSC, CDFW_WL, T, E, D species during breeding only

DPS = Distinct population segment; ESU = Evolutionarily Significant Unit; NMFS = National Marine Fisheries Service; USFWS = U.S. Fish and Wildlife Service; CCC = Central California Coast; SFBD = San Francisco Bay-Delta

Source: NMFS (2021a), USFWS (2020a)

3.3.3 Green Sturgeon

Green sturgeon are long-lived anadromous fish and are considered the most marine-oriented of all the sturgeon species in North America (Lindley et al. 2011). Green sturgeon are present along the U.S. West Coast, found in nearshore marine waters, bays and estuaries ranging from Mexico to the Bering Sea, Alaska (NMFS 2009), although their consistently inhabited range is much smaller, primarily concentrating in the coastal waters of California, Washington, Oregon, and Vancouver Island. North American green sturgeon are divided into two DPS: the northern DPS (nDPS) and sDPS. The non-spawning adult and subadult populations coexist in marine and estuarine waters from Mexico through Alaska for most of their lives (NMFS 2009, 2018). The DPSs are differentiated by their spawning locations. The nDPS spawns in the Rogue River in Oregon south to the Klamath River in California (NMFS 2009, 2018) but are not federally listed as threatened or endangered. The sDPS is federally threatened, and they spawn in the Sacramento River (NMFS 2006a, 2009, 2018, 2021b). Critical habitat was designated for sDPS green sturgeon as of 2009, and includes certain bays and estuaries, including all tidally influenced areas of the Bay (NMFS 2009).

3.3.3.1 Timing and Distribution

Green sturgeon use riverine, estuarine, and marine habitats throughout the U.S. West Coast, and spend substantial portions of their lives in marine waters (NMFS 2018). Adults (>130 centimeters total length; Moyle 2002) and subadult green sturgeon can broadly be found moving within nearshore coastal waters from Monterey Bay through Alaska. They make extensive coastal migrations in depths shallower than 80 m (Moser et al. 2016). In summer months specifically, subadult and adult green sturgeon may aggregate and hold in estuaries of non-natal rivers, including the Columbia River estuary, Willapa Bay, and Humboldt Bay (Adams et al. 2007, Lindley et al. 2011). Aggregations in non-spawning estuaries occur during summer and early fall months (primarily May to October; NMFS 2006a) and are part of their larger migratory patterns between spawning rivers, overwintering habitat in marine waters, and summer-holding and feeding habitats (Lindley et al. 2008, 2011). Adults enter their natal rivers to spawn every three to five years, and their migration to freshwater typically begins in late February. In the Bay, green sturgeon occur year-round, although seasonal use of the estuary may be size-class dependent (Miller et al. 2020).

3.3.3.2 Use of the Project Area

Spawning of this sDPS occurs predominantly in the upper Sacramento River, and more recently has been documented in the Feather and Yuba rivers (Adams et al. 2007, Seeholtz et al. 2015, Beccio 2018). Green sturgeon have rarely been captured in South San Francisco Bay. Studies on juvenile and sub-adult green sturgeon have discovered extended use of San Pablo Bay and central San Francisco Bay (Chapman et al. 2019, Miller et al. 2020, Thomas et al. 2022). Catch records in California Department of Fish and Wildlife's (CDFW) Bay Study survey are limited to two sub-adult individuals in the early 1980's, both caught in April, offshore of the Oakland International Airport (Interagency Ecological Program for the San Francisco Estuary 2022). However, green sturgeon may occasionally forage within the aquatic portions of the project site, albeit infrequently and in low numbers given the shallow nature of aquatic habitats within the study area (Chapman et al. 2019, Miller et al. 2020).

Tracking studies suggest that sturgeon detections are associated with either directional movement or non-directional feeding activity and that directional movement of sturgeon is rapid (Kelly et al. 2007). Green sturgeon have been observed in mudflats and along eelgrass margins, depending on distance from a main channel. Sub-adults may frequent shallow habitats when in search of prey (Kelly et al. 2007), while Chapman (2019) found that adults were primarily detected in depths greater than 5 m throughout the year. Green sturgeon may utilize the offshore portions of the action area, but only for short periods during their movements to and from marine and upper bay habitats (Chapman et al. 2019, Interagency Ecological Program for the San Francisco Estuary 2022).

3.3.3.3 Foraging Behavior

The foraging behavior of green sturgeon (and the other ESA-listed fishes) is an important consideration to sufficiently evaluate the effects of the proposed project because it informs whether and how the potential loss of prey items impacts their survival. Compared to the ESA-listed salmonids, there is relatively little information on the foraging behavior of green sturgeon. In the San Francisco Bay Estuary (SFBE), juvenile green sturgeon feed on shrimp, amphipods, isopods, and other benthic species (NMFS 2018). In coastal bays and estuaries, adults and subadults rely on soft substrate (Moser et al. 2016) to feed on benthic invertebrates such as shrimp, mollusks, amphipods, and sometimes small fishes (NMFS 2018, 2021b). Foraging adult and subadult sturgeon in the Bay and non-natal estuaries tend to frequent areas less than 33 ft deep, foraging in the benthos and moving on and off mudflats with tidal fluctuations (Kelly et al. 2007, Moser et al. 2016, 2017).

3.3.4 CCC Steelhead

Steelhead are taxonomically structured on a geographic basis, and several DPSs are recognized by NMFS. The CCC steelhead DPS has potential to occur in the action area. The CCC steelhead DPS includes naturally spawned populations in drainages of San Francisco and San Pablo Bay eastward to but excluding the Sacramento-San Joaquin Delta (NMFS 2006b). The CCC steelhead Ecologically Significant Unit (ESU) was first comprised of both anadromous and non-anadromous fish, and the anadromous form only was initially listed as federally threatened in 1997 (NMFS 1997). After an updated status review of all west coast steelhead ESUs, NMFS redefined the CCC steelhead ESU as an anadromous-only DPS and reaffirmed the listing in 2006 (NMFS 2006b). Designated critical habitat was updated for CCC steelhead in 2005, and includes certain bays and estuaries, including all tidally influenced areas of the Bay (NMFS 2005).

3.3.4.1 Timing and Distribution

Adult steelhead enter the Bay and spawn in its tributaries in the winter and early spring months when there are higher flows and lower water temperatures. Adult female steelhead will prepare a redd (or nest) in a stream area with suitable gravel type composition, water depth, and velocity. The specific timing of spawning varies among streams within a region and depends on the environmental conditions. Spawning usually occurs in gravel substrates in clear, cool, perennial sections of relatively undisturbed streams. In addition, preferred streams typically support dense canopy that provides shade, woody debris, and organic matter, and are usually free of rooted or aquatic vegetation. The water temperature determines the length of the incubation period, and

hatching can occur within three weeks to two months. Fry emerge from the gravel, and rear along the stream margins, moving gradually into pools and riffles with higher velocity as they grow. Young juveniles feed primarily on aquatic invertebrate drift.

After hatching in freshwater, juvenile steelhead typically remain in their natal streams for at least their first summer (Barnhart 1986). Young-of-the-year steelhead tend to use riffles with cover, while older juveniles use deeper water (such as pools) as rearing habitat. However, steelhead may also use estuaries as rearing habitat (Bond et al. 2008). For example, a study of steelhead in Waddell Creek in Santa Cruz County, California, found that some of the steelhead remained in Waddell Creek lagoon or the lower portions of the stream for a whole season before migrating to the sea (Shapovalov and Taft 1954). Juvenile steelhead typically rear in freshwater for one to three years before migrating to the ocean (Moyle 2002). Because of this multi-year rearing period, steelhead generally spawn in tributaries that maintain suitable temperature and other water quality parameters year-round.

Steelhead smolts typically migrate to marine waters after spending about two years in freshwater. Most downstream smolt migration takes place between February and June. Fukushima and Lesh (1998) report that the peak timing of steelhead smolt outmigration in Central California occurs in March, April, and May, while others report most steelhead smolts in California enter the sea in March and April. Studies have shown that salmonids (broadly, not limited to steelhead) that rear in estuaries grow faster compared to fish reared in fully riverine habitats (NMFS 2016a, b).

In California, steelhead generally reside in marine waters for one to two years, with a small fraction spending three to four years, prior to returning to their natal stream to spawn at four or five years old (NMFS 2016a, b). Unlike other Pacific salmonids, steelhead are iteroparous and capable of spawning more than once before they die; adults may survive and return to the ocean after spawning ("kelts"), coming back to spawn for one or more additional seasons (Moyle 2002). However, it is unlikely that steelhead spawn more than twice in a lifetime (NMFS 2005). Spawning occurs from December through April for summer and winter-runs. Peak spawning occurs between January and March (NMFS 2005).

3.3.4.2 Use of Project Area

CCC steelhead are known to rear in coastal river basins and tributaries of the Bay and migrate through the bay itself on their seaward migration as juveniles. CCC steelhead smolts are relatively large (150-200 millimeters [mm]), remain in relatively deep water, and move rapidly through the estuary to the ocean from January through May (Fukushima and Lesh 1998). After reaching the ocean in the spring, juvenile steelhead tend to move offshore quickly rather than use nearshore waters. Adults also migrate through the Bay to reach their tributaries to spawn in winter and early spring. Generally, winter-run CCC steelhead enter estuaries and rivers between September and March, and begin spawning between December and early April, extending into May based on the conditions (Moyle et al. 2008). No spawning or rearing of steelhead in southern Bay tributaries was documented during California's historic drought (2012-2016; Leicester pers. comm. 2016, as cited *in* Cal Trout 2017), highlighting the importance of adequate flow in this population. Records from CDFW's Bay Study reveal

that CCC steelhead have never been caught in surveys of South San Francisco Bay (Interagency Ecological Program for the San Francisco Estuary 2022); thus, they are unlikely to be present in the action area.

3.3.4.3 Foraging Behavior

Steelhead are primarily drift feeders and may forage in open waters of estuarine subtidal and riverine tidal wetland habitats (Leidy 2000). Juvenile steelhead collected in estuaries along the CCC exhibit rapid growth in productive lagoons and at the mouths of streams with high summer flow (Smith 2016), suggesting that these areas are critical nursery areas for juvenile steelhead in spring and summer months. The diet of juvenile steelhead includes emergent aquatic insects, aquatic insect larvae, snails, amphipods, mysids, and small fish (Moyle 2002). Compared with other steelhead DPS, who rely on marine waters for growth (Daly et al. 2014), CCC steelhead may be unusually dependent on estuary habitats for success.

3.3.5 Longfin Smelt

Longfin smelt are anadromous, planktivorous forage fish present in estuarine and coastal waters from SFBE to the Aleutian Islands in Alaska. They are small fish with a predominately two-year life cycle averaging 9-12 centimeters in length, although some live a third year and reach maximum lengths of about 14-15 centimeters (California Department of Fish and Game 2009, USFWS 2022). Adults and juveniles can be found in estuaries, primarily in the middle of the water column or at the bottom during the day, and become more associated with surface waters at night to follow prey (California Department of Fish and Game 2009). Longfin smelt were listed as threatened under the California Endangered Species Act in 2009 (California Department of Fish and Game 2009, Garwood 2017, California Natural Diversity Database 2023). The Bay and Sacramento-San Joaquin Delta (both of which are considered part of the SFBE) is the southernmost spawning location for longfin smelt. It also supports the largest population in California. This population is genetically distinct (USFWS 2012) and was listed as threatened under the Federal ESA on July 30, 2024 (USFWS 2024).

3.3.5.1 Timing and Distribution

Longfin smelt have an anadromous life history, where adults migrate from coastal marine and embayment habitats in the late fall to streams and estuaries to spawn (Lewis et al. 2019, Yanagitsuru et al. 2022). Based on the incubation period of newly hatched larvae captured in surveys, they primarily spawn from January through March (California Department of Fish and Game 2009). In the SFBE, they typically spawn between January and April, but spawning may be as early as November and as late as June (USFWS 2012, Lewis et al. 2019). There is typically a two-year life cycle, while some individuals may spawn as one or three year olds, and most fish die after spawning but a few (mostly females may live another year (USFWS 2012, Lewis 2021). Females lay adhesive eggs on sandy or grassy substrate that hatch after approximately 40 days (California Department of Fish and Game 2009). Larvae can be moved downstream to estuaries by high flows, but predominately spend considerable time in fresh water; it takes almost three months to reach the juvenile stage (USFWS 2012). The spatial distribution of juveniles shows a distinct seaward migration as water temperatures warm in the late spring and early summer (Rosenfield and Baxter 2007).

In the SFBE, longfin smelt larvae hatch between December and May, with peaks in abundance of recently hatched larvae observed in February and March (Baxter 1999). Larval abundance and presence in rearing habitats are strongly correlated with salinity (Grimaldo et al. 2017, Lewis 2021, Brennan et al. 2022, Yanagitsuru et al. 2022). Larval abundance in the SFBE peaks between practical salinity units of 2-6 (roughly equivalent to parts per thousand) (as summarized by Yanagitsuru et al. 2022). Larvae, especially in their early stages, are surface oriented and most abundant in upper layers of the water column. Once the swim bladder reaches inflation, larvae can move vertically in the water column, and older larvae and juveniles inhabit the middle and bottom strata of the water column (page [p.] 191 *in* Baxter 1999). These differences in how longfin smelt use the water column throughout their life history is evident from catch abundances from plankton tows and mid-water and otter trawls.

3.3.5.2 Use of Project Area

In SFBE, longfin smelt were long believed to spawn in upper parts of the estuary (Lewis et al. 2020). Recent analysis of survey data indicates they may use tributaries in the northern and southern reaches of the SFBE, including recently restored tidal marshes adjacent to sloughs, and brackish wetlands for spawning and rearing (Lewis et al. 2019, 2020). Dense aggregations of adult longfin smelt were observed in marshes and sloughs in more southern reaches of the SFBE between October and April of 2011 and 2019; these adults were in late-stage spawning condition. The highest catches of recruits and densities of larvae were often in shallow, recently restored brackish tidal marshes adjacent to sloughs (Lewis et al. 2019, 2020). These findings suggest that previous surveys in SFBE likely did not cover a substantial portion of their population, brackish tidal marsh restoration may benefit all life stages of longfin smelt, and sampling should encompass a broader range of habitats when targeting longfin smelt. In addition, during years of high precipitation and freshwater outflow, when suitable low-salinity habitat is unusually abundant, recruitment success was particularly high, and brackish habitats in northern and southern SFBE consistently served as rearing habitat for larvae and juveniles (p. 6 *in* Lewis et al. 2019, Lewis et al. 2020).

The majority of longfin smelt larvae are affiliated with the estuary's major low-salinity zones and are unlikely to be found within the action area. However, juveniles (>20 mm in length) have been detected at one time or another throughout the estuary and within South San Francisco Bay (USFWS 2024). By their first summer, juvenile longfin smelt inhabit salinities up to and including marine water (Baxter et al. 1999, Rosenfield and Baxter 2007).

By May, most young-of-the-year longfin smelt begin to reach 40 mm fork-length. Across the estuary, juvenile longfin smelt have been collected most frequently from deep water channel habitats (≥23 ft [7 m] depth) as opposed to shallow shoals (<23 ft [7 m] depth; Rosenfield and Baxter 2007), including near the action area. CDFW Bay Study data indicate catches of juvenile and adult longfin smelt follow these same trends at stations closest to the project site, and catches of longfin smelt at these stations also exhibit strong seasonality, with the majority taken in December, January, and February (Interagency Ecological Program for the San Francisco Estuary 2022), outside the in-water work window for the proposed project. Beach seine data from the USFWS Delta Juvenile Fish Monitoring Program suggest that longfin smelt are unlikely to reside in the nearshore shoal

found in the action area. Since the program's inception in 1976, no longfin smelt have been recorded at Treasure Island, Delta Juvenile Fish Monitoring Program's southern-most site, closest to the project site (USFWS et al. 2024).

3.3.5.3 Foraging Behavior

SFBD longfin smelt exhibit high prey-specificity. As larval and juvenile longfin smelt rear and feed in low-salinity habitats, they appear to only focus on two taxa – the copepod *Eurytemora affinis* and mysids (USFWS 2024). Biomass of preferred copepod prey is significantly greater in southern SFBE ponds and sloughs than southern SFBE open bay habitats, suggesting that feeding incidence is higher in brackish estuaries (Barros et al. 2022). Pre-spawning adults have also shown a strong dietary preference for mysids, while relying on copepods and amphipods when mysids are scarce.

Section 4. Status of EFH

The MSA established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan (FMP). Under section 205(b) of MSA, federal agencies are required to consult with the Secretary of Commerce (represented on this issue by NMFS) on any actions that may adversely affect EFH. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). NMFS has further added the following interpretations to clarify this definition:

- "waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate;
- "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities;
- "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and
- "spawning, breeding, feeding, or growth to maturity" covers the full lifecycle of a species (50 CFR 600.10).

The Pacific Fishery Management Council (PFMC) has designated EFH for four FMPs covering groundfish, coastal pelagic species, Pacific coast salmon, and highly migratory species.

Habitat Areas of Particular Concern (HAPC) are described as subsets of EFH, and are identified based on one or more of the following considerations:

- Importance of the ecological function provided by the habitat;
- Extent to which the habitat is sensitive to human-induced environmental degradation;
- Whether and to what extent development activities are, or will be stressing the habitat type; and
- The rarity of the habitat type.

This EFH assessment determines whether the proposed action "may adversely affect" designated EFH for relevant commercial, federally managed fisheries species within the action area, and reviews the potential effects on HAPC. To determine the potential extent of EFH in the action area in accordance with the MSA, all approved West Coast FMPs were reviews, and the species regulated by West Coast FMPs were assessed for potential occurrence. NMFS's EFH mapper was also reviewed when determining the locations of designated EFH and HAPC (NMFS 2021a).

The action area contains EFH as designated under the MSA in the Pacific coast groundfish, coastal pelagic, and Pacific coast salmon FMPs. Estuaries are HAPC in the action area.

4.1 Pacific Coast Groundfish EFH

EFH for Pacific coast groundfish is defined as the aquatic habitat necessary to allow groundfish production to support long-term sustainable fisheries for groundfish and for groundfish contributions to a healthy ecosystem. The California coast provides groundfish habitat from the nearshore mean higher high water or the upstream extent of saltwater intrusion, to deep water areas (less than or equal to 3,500 m) seaward to the boundary of the U.S. Exclusive Economic Zone (EEZ), seamounts in depths greater than 3,500 m as mapped in the EFH assessment, and areas designated as HAPCs (PFMC 2024a). The groundfish FMP groups EFH into seven composite units, each of which represent a major habitat type. One of the seven components is estuarine EFH, defined as waters, substrates, and associated biological communities in bays and estuaries of the U.S. EEZ, from mean higher high water to the outer boundary of the estuary.

The PFMC made more than 300 EFH designations for 92 groundfish species (PFMC 2024a), and Pacific coast groundfish represent a large number of resident species along the U.S. West Coast. The PFMC further defined important habitat by species and life stage. Within the Bay, Pacific coast groundfish EFH covers all open and estuarine waters within South, Central and North San Francisco Bay, San Pablo and Suisun Bays, and the San Joaquin and Sacramento River Deltas, up to the far reaches of the tributaries. Pacific coast groundfish likely to occur in the South-Central Bay (i.e., from the Bay Bridge south to San Mateo Bridge) and potentially the project area (NMFS 2013) include flatfishes (e.g., starry flounder [*Platichthys stellatus*], English sole [*Parophrys vetulus*], sand sole [*Psettichthys melanostictus*]), brown rockfish (*Sebastes auriculatus*), lingcod (*Ophiodon elongatus*), cabezon (*Scorpaenichthys marmoratus*), leopard shark (*Triakis semifasciata*),, spiny dogfish (*Squalus acanthias*), and big skate (*Raja binoculata*). Larvae of several species of groundfish are potentially present as well. Soupfin shark (*Galeorhinus galeus*) has additionally been designated an Ecosystem Component Species (ECS) under the Pacific Coast Groundfish FMP.

4.2 Coastal Pelagic EFH

Coastal pelagic species live in the water column and are found anywhere from the surface to 3,281 ft (1,000 m) deep. The coastal pelagic EFH covers and actively manages six species/species groups: Northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), jack mackerel (*Trachurus symmetricus*), California market squid (*Dorytheuthis opalescens*), and krill (PFMC 2024b). The EFH for these species includes all marine and estuarine waters along the coast of northern California and offshore to the EEZ boundary line. In the Bay, coastal pelagic EFH covers all open and estuarine waters within South, Central and North San Francisco Bay, San Pablo and Suisun Bays, and waters upstream to the lower reaches of the San Joaquin and Sacramento River Deltas. Of the six actively managed species/species groups, the northern anchovy and Pacific sardine are potentially present inside South San Francisco Bay and within the action area.

The EFH for these species includes all marine and estuarine waters along the coast of northern California and offshore to the EEZ boundary line.

4.3 Pacific Coast Salmon EFH

In the estuarine and marine environment, EFH for Pacific coast salmon extends from nearshore and tidal submerged environments in state waters to 370.4 kilometers (km) offshore (PFMC 2024c). Pacific salmonids, including coho and Chinook salmon, as well as their prey species (Northern anchovy, Pacific sardine, and Pacific herring) are potentially present within the action area and covered under this EFH. The action area contains EFH for all life stages of coho and Chinook salmon.

4.4 Highly Migratory Species EFH

Highly migratory species are pelagic fish species such as tunas, marlins, and sharks that occur worldwide and are highly mobile. They can be found in both the EEZ region out to 230 mi (370 km) from shore and the high seas; they do not occur in the Bay nor the action area.

4.5 HAPC

The Bay (and the action area) is an estuary, which is a HAPC managed under the Pacific Coast Groundfish and Pacific Coast Salmon FMPs. Eelgrass beds are also an important habitat type and designated as an EFH HAPC for various fish species within the Pacific Coast Groundfish and Pacific Coast Salmon FMPs (PFMC 2024a, c). Estuaries within the Bay and the action area are protected as an HAPC. Although eelgrass HAPC is designated elsewhere in the Bay, it is not designated in the action area, nor did surveys conducted by Merkel & Associates in 2020 reveal eelgrass at the project site (Merkel & Associates 2021). Additionally, all areas of the Bay that support beds of Olympia oyster are also considered EFH because they improve water quality and increase fish abundance.

4.6 ECS

In 2016, a selection of forage fish species that were unfished and unmanaged were brought into the FMPs as ECS. There are certain ECS shared between all four FMPs. The intention of this action was to define and prohibit directed commercial fishing because the shared ECS are prey of marine mammal, seabird and fish species and because they support the growth development of predators (NMFS 2016c, d). Future development of fisheries for shared ECS is prohibited as a method to proactively protect unmanaged, unfished forage fish crucial to species managed under the FMPs and the larger California Current.

Pacific herring (*Clupea pallasii*) are present in the action area and are an ECS covered under the coastal pelagic FMP. Pacific herring spawn on a variety of natural and artificial substrates including eelgrass, rocks, oyster reefs, pier pilings, and rip rap in intertidal and shallow subtidal habitat. Spawning has not been reported along the shoreline of the project site during ongoing monitoring of this portion of the Bay, but as Pacific herring are

known to spawn within one mile of the site (The Lost Anchovy 2021), the potential for spawning cannot be ruled out.

Section 5. Effects of the Action

The "effects of the action" to be analyzed in this BA are defined as the direct and indirect effects of the action, together with the effects of other activities that are interrelated or interdependent with that action. The following information describes the potential direct and indirect effects of the project on the listed species known to occur, or with the potential to occur, in the action area. The potential marine environmental effects associated with construction for the project result from installation of steel piles for the kitesurfing and kayak/water rescue ramps and bay overlook/access, and creation of the tidal inlet. The nature of direct and indirect impacts may be short-term or long-term:

- **Direct Effects**—Effects from actions that would immediately remove or destroy habitat, harm (injure or kill) species, or adversely modify designated critical habitat. Direct effects include actions that would potentially remove or destroy habitat, or displace or otherwise influence the species, either positively (beneficial effects) or negatively (adverse effects).
- **Indirect Effects**—Those effects that are caused by the proposed action and occur later in time, but are still reasonable certain to occur. Indirect effects may include impacts on food resources, or foraging areas, and impacts from increased long-term human access/activities.
- **Short-Term Effects**—Typically only occur during the work activity, have no long-term disturbance or harm to native vegetation/habitat, and the habitat values return to a pre-disturbance state within one year. Disturbance impacts to animals as a result of activities are considered temporary if the animals' behavior and/or spatial use patterns are expected to return to pre-activity conditions shortly after the disturbance ceases, so that daily behaviors necessary to meet life requisites are maintained.
- **Long-Term Effects**—Effects that last over one-year, and result from the permanent replacement of natural habitat with structures or materials to developed uses, or shade or permanently convert the habitat to a different habitat/use. Long-term effects would also include vegetation or habitat disturbance where, following the disturbance, the vegetation/habitat cannot recover to its pre-disturbance state within one year.

To determine the effects of an action, the listed resources potentially exposed to impacts (listed species and designated critical habitat) need to be identified, then the potential stressors associated with the action and the nature of that exposure (effects) need to be determined. The next step requires an examination of the scientific and commercial data available to determine whether and how those listed resources are likely to respond given their exposure. The final step of the analysis is making a determination of risk that the project effects pose to listed resources.

A "no effect" determination is the appropriate conclusion when the action agency determines that the proposed action will not affect listed species or critical habitat (USFWS and NMFS 1998). A "may affect, not likely to adversely affect" determination is the appropriate conclusion when effects on listed species are expected to be

discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects on the species. Insignificant effects relate to the size of the impact and should never reach the scale where take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) occurs. Discountable effects are those extremely unlikely to occur. Based on best judgement, a person would not: 1) be able to meaningfully measure, detect, or evaluate insignificant effects; or 2) expect discountable effects to occur.

A "may affect, likely to adversely affect" determination is the appropriate conclusion if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial (USFWS and NMFS 1998). In the event that the overall effect of the proposed action is beneficial to the listed species, but also is likely to cause some adverse effects, then the proposed action "is likely to adversely affect" the listed species. If the adverse effect can be detected in any way or if it can be meaningfully articulated in a discussion of the results, then it is not insignificant, it is likely to adversely affect. A "may affect, likely to adversely affect" determination requires formal Section 7 consultation.

The analysis of project-related effects on designated critical habitat is based on the definition of "destruction or adverse modification," which means "a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features (PBF) essential to the conservation of a species or that preclude or significantly delay development of such features" (USFWS and NMFS 2016). Determinations on destruction or adverse modification are determined by looking at critical habitat as a whole, not just on the areas where the action takes place or has direct impacts.

For the purposes of this BA, impacts to critical habitat would be "likely to adversely affect" if they would result in the following short- and long-term effects: 1) disturbance of any life history stage of a species such that it causes a disruption of breeding, feeding, or sheltering in the short-term; 2) take of any individuals of any life history stage in the short-term; 3) decreased quality of any PBF of critical habitat for any life history stage of a listed species in the short-term; 4) decreased quality and quantity of any PBF of critical habitat for listed species over a large proportion of the available habitat in the long-term; or 5) continuing or worsening conditions that are currently causing a listed species to decline in the long-term.

A summary of the marine effects (using the definitions above) associated with the project is explained in Section 5.1. A more detailed explanation of the effects on given taxa, and whether the mechanism may require mitigation, is provided in Section 6.0. Analysis of effects on critical habitat and EFH are also provided in Sections 6.0 and 7.0.

5.1 Stressors

Direct and indirect effects are expected to result from construction activities required for completion of the Bay Rise Park. These may include increased underwater noise and sediment suspension from pile driving. Impacts on habitat loss from pile placing are not expected, as habitat will be created as a result of tidal marsh restoration and living shoreline enhancements (see Section 2.2.1).

5.1.1 Underwater Noise

Construction for the Bay Rise Park involves placement of piles at the kitesurfing ramp, bay overlook/access, and water rescue/kayak ramp. Short-term, direct effects of elevated underwater noise can be expected from pile driving (e.g., from vibrating and impact hammers) and has the potential to result in the injury or mortality of juvenile or adult fish and birds that may be close to the work area.

In general, impacts from noise depend on i) sound frequency relative to the hearing frequency range of the animal and ii) sound source intensity, energy, and duration received by an animal and type. The type of sound sources determines the appropriate acoustic thresholds for animals. Impulsive sound sources produce sound that is typically transient, brief, broadband, and consist of high peak sound pressure with rapid rise and decay times (NMFS 2023). Impulsive sounds such as impact pile driving can occur in repetition, or as a single event. In contrast, non-impulsive sounds can be continuous or intermittent, produce sounds that are broadband, narrowband or tonal, and may be brief or prolonged. These sources do not have the high peak sounds pressure with rapid rise times that are typical of impulsive sounds. Non-impulsive sound sources may result from vibratory pile driving. Sound may also be continuous (i.e., emit sound with a sound pressure level that remains above ambient sound) or intermittent (i.e., interrupted levels of low or no sound or burst of sound separated by silent periods; NMFS 2023).

Underwater sound also has a particle motion component (Nedelec et al. 2016). Marine mammal hearing is based on detection of sound pressure, whereas fish and invertebrates sense sound using particle motion (other than those fish species with swim bladders that may also be sensitive to sound pressure). Particle motion provides information about their environment (e.g., detection of an approaching predator, the presence of a potential mate), but is also used for communication or navigation.

Exposure to sound can constitute a large area based on the frequency, duration, and magnitude of sound produced and the fact that sound travels far underwater. Acoustic impacts from project construction will depend on noise generated by equipment used, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise sensitive areas. Noise impacts from construction primarily result when construction activities occur in the vicinity of marine animals, in areas next to sensitive habitats, or when construction lasts for extended periods of time.

Underwater sound may result in a range of effects on marine species, from no discernible effect to acute, lethal effects. The effect of noise may have significant impacts (taxa and life-stage dependent). Impacts to fish are

primarily related to effects of sound pressure level on species with swim bladders (Hawkins et al. 2020). Tissue damage from underwater sound may occur when sound passes through muscle into a gas void (e.g., swim bladder), since gas is more compressible. When exposed to sound pressure, gas in the swim bladder may expand more than the surrounding tissue and may contract during periods of overpressure. This expansion and contraction may result in swim bladder tissue damage and even a ruptured swim bladder (p. 3-4 in Molnar et al. 2020). These physical injuries have short or long-term effects, depending on whether the individual fish can recover. Salmon have ducted swim bladders connected to the esophagus via a thin tube, thus allowing them to expel air from their swim bladder and out of the mouth (p. 3-3 in Molnar et al. 2020). Their swim bladders are more distant from the ear and are more sensitive to particle motion, which may protect them from acute sound events (Hawkins et al. 2020).

The Fisheries Hydroacoustic Working Group (FHWG) has developed agreed-upon injury threshold criteria for listed fish species (FHWG 2008). The FHWG identified sound pressure levels of 206 dB-peak (peak dBs) at 10 m as being injurious to fish. Accumulated SEL at 10 m of 187 dB for fishes that are greater than 2 grams (g), and 183 dB for fishes below that weight, are considered to cause temporary shifts in hearing, resulting in temporarily decreased fitness (i.e., reduced foraging success, reduced ability to detect and avoid predators; FHWG 2008). It is highly unlikely that listed CCC steelhead or green sturgeon weighing less than 2 g will be present in the action area during construction, but juvenile longfin smelt may be present.

It must be noted that recent research summarized in Popper et al. (2014) suggests that cumulative SEL thresholds for injury may be well above 200 dB. However, until there is broad agreement on the use of higher thresholds, those in FHWG (2008) should be used. It is very important to recognize that these criteria were developed for impact pile driving only. They should not be used to assess sounds from vibratory pile driving because the injury thresholds for impact driving are likely to be much lower than the injury thresholds for non-impulsive, continuous sounds produced by vibratory drivers. Until injury thresholds are developed for vibratory pile driving, this BA will rely on the comparison of noise information developed for a number of projects that included both impact and vibration hammers.

Impact pile driving is the most commonly used pile driving method. Impact pile drivers are piston-type drivers that use various means to list a piston (ignition, hydraulics, or steam) to a desired height and drop the piston (via gravity) against the head of the piling in order to drive it into the substrate. In general, an impact hammer driving 24-in steel pipe pilings can be expected to generate peak dB of 182-208 dB at a distance of 10 m from the piling, and cumulative SELs that have been documented to range from 159-173 dB at a distance of 10 m from the piling. However, site conditions in the action area may result in noise levels that are different from those reported by Molnar et al. (2020). Table 4 shows monitoring results for a number of pile driving projects conducted in the western U.S.

Vibratory pile driving, in contrast to impact hammer driving, uses oscillatory hammers that vibrate the piling, causing the sediment surrounding the piling to liquefy and allow penetration. The vibratory hammer produces sound energy that is spread out over time and is generally 10 to 20 dB lower than impact pile driving (Molnar

et al. 2020). Peak sound pressure levels for vibratory hammers can exceed 180 dB; however, the sound from these hammers rises relatively slowly. Although peak sound levels can be substantially less than those produced by impact hammers, the total energy imparted can be comparable to impact driving because the vibratory hammer operates continuously and requires more time to install the piling (Molnar et al. 2020). Peak and cumulative SEL noise levels are not likely to exceed injury threshold levels if a vibratory hammer is used to place the pilings (Table 4). Steel sheet piles to be placed along the shoreline will be installed via vibratory driving only.

The most common impact minimization measure used to minimize noise effects on fish from impact pile driving is the installation and operation of a bubble curtain around the piling. The air within the bubble curtain "absorbs" some of the noise generated from pile driving, which reduces the potential impact area. It can be expected that up to 15 dB attenuation can be achieved using a bubble curtain during a slack tide (Molnar et al. 2020). A rapidly incoming or outgoing tide reduces bubble curtain efficacy, since bubbles get carried away from the piling (Molnar et al. 2020). Therefore, this project will use a "stacked" series of bubble extruder rings to surround the piling with bubbles. In addition, to improve the effectiveness of the bubble curtain, the contractor will attempt to finish driving a piling with an impact hammer in the period that extends from an hour before to an hour after slack tide, which would avoid rapid tidal velocities. The contractor will be made aware that tidal action will make the bubble curtain less effective, which could result in exceeding noise thresholds and shutting down impact pile driving.

During impact pile driving, cushion blocks can be placed between the top of the piling and the hammer. The cushions are typically 1 to 3 in thick and made with wood, nylon, or a polymer material. The cushions are used to absorb and dissipate heat and can protect the top of the piling from damage. The Washington State Department of Transportation conducted a study to evaluate the effectiveness of each of the material types in reducing underwater sound generation during the driving of 12-in diameter steel pipe pilings (Washington State Department of Transportation 2006, as cited *in* Caltrans 2009). The study results indicated that a wood piling cushion reduced sound levels from 11 to 26 dB. Polymer and nylon piling cushions reduced sound levels from 7 to 8 dB and 4 to 5 dB, respectively.

As stated in Section 2.4, vibratory pile driving will be used to the greatest extent possible during the construction of in-water ramps and the bay overlook/access. However, there is the potential that during vibratory pile driving resistant subsurface sediment layers could be encountered, which would result in the piling refusing to go deeper. Pre-construction geotechnical surveys revealed dense clays underneath softer fill material and bay mud (Langan Engineering and Environmental Services, Inc. 2022), making this scenario likely. The contractor would then be required to utilize an impact hammer to finish setting the piling. Sound levels generated by impact hammer pile driving have the potential to reach the FHWG (2008) threshold levels and injure fish species in the action area.

Table 4. Various Project-Measure Maximum Sound Pressure Levels at 10 m from Piling, Unattenuated and Attenuated with Bubble Curtain

Project Location	Piling Type (Pipe)	Hammer Type	Water Depth (or Land)	No Bubble Curtain		With Bubble Curtain	
				Unattenuated Peak SPL (dB re 1 µPa)	Unattenuated SEL_{cum} (dB re 1 $\mu Pa^2/s$)	Attenuated Peak SPL (dB re 1 µPa)	Attenuated SEL_{cum} (dB re 1 $\mu Pa^2/s$)
Redding, California	24-in	Impact	<1m	182	159	ND	ND
Seattle, Washington	24-in	Impact	3-7 m	195	164	ND	ND
Salcha, Alaska	24-in	Impact	<1 m	208	173	ND	ND
Sacramento, California	24-in	Impact	0.25-3 m	201	168	173[1]	147[1]
Geyserville, California	24-in	Impact	Land-based	197[2]	173[2]	ND	ND
Martinez, California	20-in	Impact	11-12 m	203	171	178	145
Sacramento, California	24-in	Vibratory	3 m	181	153	ND	ND

Notes: dB = decibels; ND = no data; SEL = sound exposure level; SPL = sound pressure levels; in = inch; m = meter; SPL units are dB re 1 µPa; SEL units are dB re 1 $\mu Pa^2/s$; The duration for each reported SEL_{cum} is assumed to be the duration of pile driving (differs for each project).

[1]Calculated at 18 m distance; [2]Calculated at 15 m distance

Source: Molnar et al. (2020)

An analysis was conducted of potential noise impacts hammer pile driving on listed fish species in the action area. The analysis for the in-water and land-based 24-in piles were based on unattenuated sound data provided by Molnar et al. (2020). The 24-in piles were then run through the NMFS (2022) pile driving noise calculation model to determine the distance from the piling where the onset of injury might occur. In-water piles were assumed to have exhibit a sound attenuation rate of 4.5 dB per doubling of distance (F factor = 15). Following the guidance of Caltrans (2020), analysis for land-based piles used an attenuation rate of 6.6 dB per doubling of distance (F factor = 22) after geotechnical surveys investigated soil type (primarily stiff sandy clays) at the project site (Langan Engineering and Environmental Services, Inc. 2022).

A second model run was conducted with the same peak and SEL dB data, but adjusted with an attenuation level of 5 dB for in-water piles to account for sound attenuation gained through use of a bubble curtain (-5 dB; Molnar et al. 2020). Although placement of a nylon cushion block between the hammer and piling is planned, no specific sound level reduction credit was applied, following guidance by Molnar et al. (2020). Based on previous geotechnical site data, it was assumed that it would take 740 hammer strikes to finish setting a single pile. As can be seen from Table 5, attenuation of sound levels using a bubble curtain result in a significant decrease in the area where a fish may be subject to injury from pile driving sound levels. According to the model, assuming one pile driven per day, the 183 dB threshold for fish <2 g would be met at 38.0 m with attenuation for in-water piles, and 106.1 m for land-based piles.

Under a worst-case scenario, if a significant amount of impact pile driving is necessary due to early refusal and tidal patterns restrict the work window for in-water pile driving, it is estimated that 10 piles per day will be driven. Table 6 and Figure 5 illustrate the estimated distance to injury thresholds based on the NMFS (2022) pile driving noise calculator with a total of 7,400 strikes per day for both in-water and land-based piles. This worst-case scenario could result in the 183 dB threshold for fish <2 g being met at 73.6 m for the in-water piles with attenuation and 166.6 m for the land-based piles.

Table 5. Modeled Distance to Injury for Unattenuated and Attenuated Impact Pile Driving Using 740 Strikes with an Impact Hammer (One Pile Per Day)

					Distance (m) to Onset of Physical Injury		
						Cumulative SEL dB	
Piling Type	Attenuated with Bubble Curtain (Y/N)	Strike Peak (dB) at 10 m	Strike SEL (dB) at 10 m	Cumulative SEL (dB) at 10 m	Peak (206 dB)	Fish ≥ 2 g (187 dB)	Fish < 2 g (183 dB)
24-in pipe – in-water	N	201	168	197	4.6	44.3	81.8
24-in pipe – in-water	Y	201	168	192	2.2	20.6	38.0
24-in pipe – land-based	N	197[1]	173[1]	202[1]	5.8	69.8	106.1

Note: Actual measured sounds levels are expected to vary by an unknown degree from those estimated in the National Marine Fisheries Service calculator. dB = decibels; SEL = sound exposure level; m = meters; g =grams.

[1]Calculated at 15 m distance

Table 6. Modeled Distance to Injury for Unattenuated and Attenuated Impact Pile Driving Using 7,400 Strikes with an Impact Hammer (10 Piles Per Day)

					Distance (m) to Onset of Physical Injury		
						Cumulative SEL dB	
Piling Type	Attenuated with Bubble Curtain (Y/N)	Strike Peak (dB) at 10 m	Strike SEL (dB) at 10 m	Cumulative SEL (dB) at 10 m	Peak (206 dB)	Fish ≥ 2 g (187 dB)	Fish < 2 g (183 dB)
24-in pipe – in-water	N	201	168	207	4.6	158.5	158.5
24-in pipe – in-water	Y	201	168	202	2.2	73.6	73.6
24-in pipe – land-based	N	197[1]	173[1]	212[1]	5.8	166.6	166.6

Note: Actual measured sounds levels are expected to vary by an unknown degree from those estimated in the National Marine Fisheries Service calculator. dB = decibels; SEL = sound exposure level; m = meters; g =grams.

[1]Calculated at 15 m distance

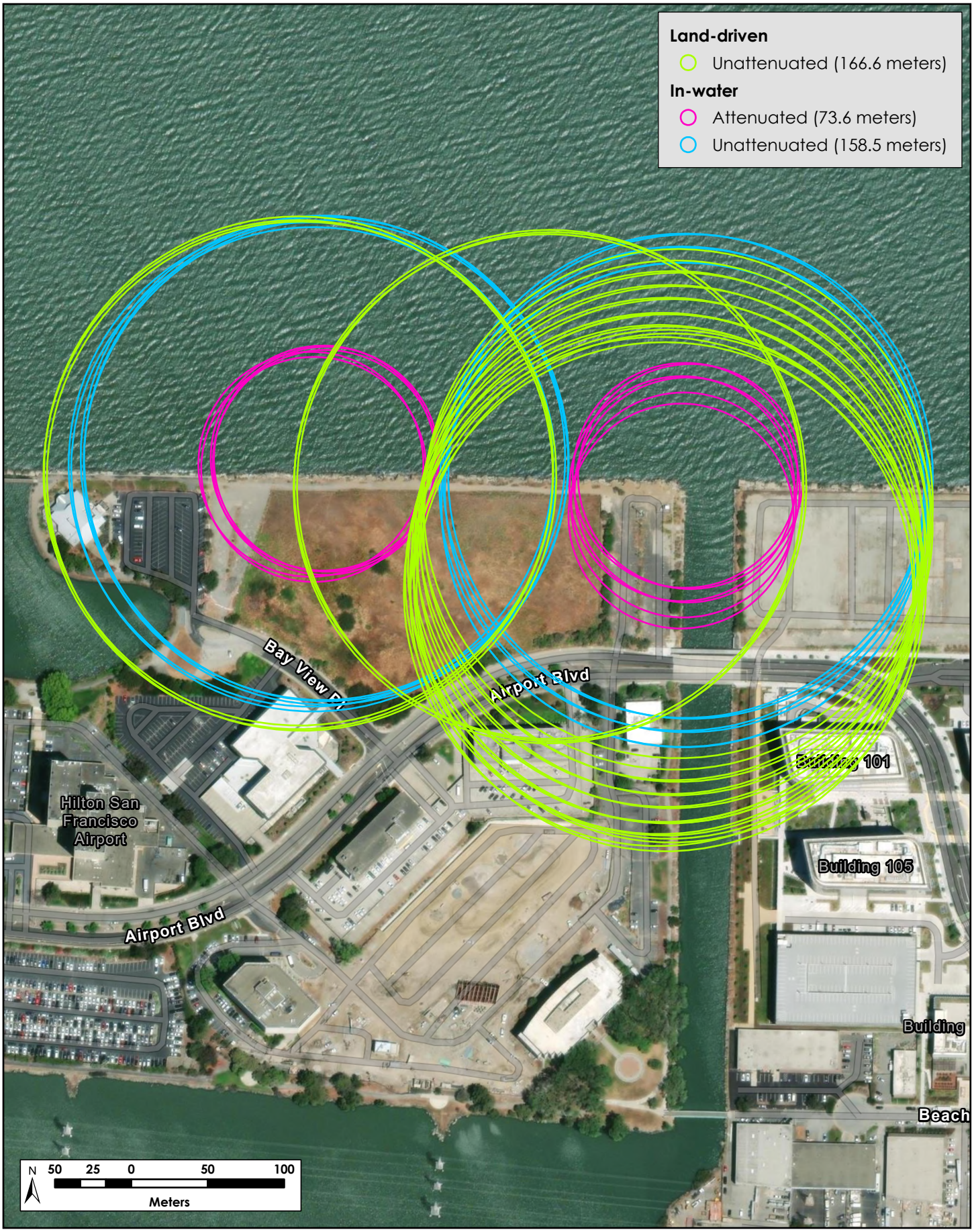

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Figure 5. Injury Zones for Fish Weighing <2 g, Assuming 7,400 Strikes Per Day

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5.1.2 Suspended Sediment and Water Quality

Elevated suspended sediment concentrations (SSCs) in the Bay are a relatively frequent occurrence. SSC levels can naturally increase due to wave action on shallow mudflats and storm runoff being delivered from local tributaries. It is common for SSC in South San Francisco Bay to range from 20 to 60 mg/L or more during the year, with spikes in turbidity usually between late winter and spring with the onset of the wet season (San Francisco Estuary Institute 2023). However, higher peaks of turbidity in the nearshore sloughs, ranging from 200 to 500 nephelometric turbidity units, have been generated during precipitation-related events (San Francisco Estuary Institute 2023).

Installation of piles and shoreline repair will result in increased turbidity and the production of suspended sediment. Excessive SSCs could have a deleterious effect on listed fish species; increased turbidity and suspension of fine sediment reduces dissolved oxygen levels, decreases visibility for foraging, and impairs oxygen exchange by clogging gills. The highest concentrations of suspended sediment will be generated by pile driving and northeastern shoreline repairs, since these activities will take place entirely in the water.

Sediment suspended during pile driving, depending on sediment type, can be dispersed by currents and the resulting turbid plumes may last for hours to days. Effects of elevated SSC on fish is a function of duration and concentration (Newcombe and Jensen 1996). Generally, the higher the concentration, the less time it takes for an effect to be felt by the receptor species. It is estimated that installation of the six 24-in in-water kayak/water rescue ramp piles and five 24-in kitesurfing ramp piles will take a maximum of two 8-hour working days, with 10 piles driven per day, in a worst-case scenario. There will be tidal flushing of the action area within each pile driving day. Therefore, it can be assumed that elevated pile driving-related SSC will occur on eleven separate occasions and last two days total—a very short duration. In addition, temporary turbidity curtains will be installed at low tide around the worksite to minimize sediment transport and exclude fish from the work area.

5.1.3 Habitat Impacts

Work in tidal aquatic impacts would include construction of the kitesurfing ramp, bay overlook/access, tidal inlet, water rescue/kayak ramp, and the northeastern shoreline repairs. The project would place fill and thereby impact approximately 0.32 acres of aquatic habitat below the HTL: concrete fill for water access ramps and rocky intertidal fill/living shoreline enhancement for erosion protection (Figures 6 and 7). These shoreline treatments would result in up to 0.08 acres of permanent impacts to existing aquatic habitat below the HTL via installation of concrete water access ramps that would be frequently utilized by people for water access. The installation of the kitesurfing and water rescue/kayak ramps would impact the nearshore habitat long-term by creating permanent shading during high tides.

In addition, up to 0.24 acres of aquatic habitat below the HTL would be temporarily impacted via removal of concrete debris and replacement with imported hard substrate (e.g., rip rap) which would include living shoreline habitat enhancement design elements below the HTL. The rocky intertidal fill/living shoreline enhancement areas would be designed to replace anthropogenic concrete debris with hard substrate that will

facilitate rapid colonization by native hard substrate macroalgae and invertebrates below MHW and marsh vegetation above MHW. Colonization of invasive species is not expected, as shoreline enhancement will be facilitated by the reuse of some of the existing hard substrate that currently supports native macroalgae and invertebrate species.

The project would also result in 0.60 acres of temporary impacts during construction on aquatic habitat within a turbidity curtain area placed around the in-water work areas. This would result in temporary fish exclusion and potential removal of concrete debris from the Bay floor for construction access in aquatic habitats.

5.2 Responses to Stressors

5.2.1 Underwater Noise

In-water and land-based pile driving could result in noise that disturbs listed bird species in the action area. The significance of acoustic disturbance will depend on many factors such as the magnitude and duration of the sound, proximity of birds and their habitat to sound sources, the level (and nature) of background ambient sound, and the ability of birds to habituate to new noise. The primary impact would be on bird behavior. Underwater sounds could disturb foraging behavior or disturb prey that diving birds forage on, or result in auditory and non-auditory injury (Science Applications International Corporation 2011). This may be an indirect effect, but an impact that occurs concurrently with project activities. There is not a clear threshold of underwater sound level that will result in behavioral effects for most bird species and the threshold for sounds from various activities may vary among species; no information is available for the California least tern. As a reference, for marbled murrelets, guidelines for a threshold for underwater sound (from activities such as pile driving) that results in behavioral effects such as flushing and avoidance is 150 dB root-mean-square pressure (USFWS 2014), and for auditory injury is 202 dB sound exposure level (SEL; Science Applications International Corporation 2011).

Construction of Bay Rise Park will occur between June 1 and November 30, when adult and juvenile steelhead are not likely to be in the area. Additionally, CCC steelhead have never been observed in South San Francisco Bay (Interagency Ecological Program for the San Francisco Estuary 2022). Green sturgeon can be found year-round in San Francisco and San Pablo Bays, as well as upstream in the Delta. Previous studies primarily have focused on their use of migratory pathways between spawning grounds, Central San Francisco Bay, and the ocean, and limited use of South San Francisco Bay has been assumed. Miller et al. (2020) have documented juvenile and adult green sturgeon presence in South San Francisco Bay, albeit in low numbers and over 14.8 mi (23 km) north, near the Bay Bridge. Juvenile and adult green sturgeon may nonetheless be present near the action area during construction activities; no larval green sturgeon, weighing <2 g, are expected. Longfin smelt use the San Francisco estuary year-round, and juvenile longfin smelt may be present in the action area during the in-water construction window. However, studies have shown that juvenile longfin smelt are more likely to use deep water channels in South San Francisco Bay, and are uncommon on shoals shallower than 7 m (Interagency Ecological Program for the San Francisco Estuary 2022). Although longfin smelt have not been

observed in beach seine catches at Treasure Island, nearshore catch data is not available for South San Francisco Bay (USFWS et al. 2024). If present, their densities in the area are likely to be very low.

Noise reduction mitigation (i.e., cushion blocks and bubble curtains) will be implemented if an impact hammer is used during any in-water pile driving work. In addition, hydroacoustic monitoring will occur any time that an impact hammer is used. Impact hammer operations will be shut down if the cumulative SEL reaches 186.5 dB at 10 m from the piling, which is below the sound threshold for fish that weigh ≥2 g, and likely below auditory injury thresholds for California least terns. Installation of coffer dams/sheet piles prior to pile driving activities will further exclude fish from the impact area during in-water work. Vibratory hammer noise levels generated by the installation of steel sheet piles are not anticipated to result in injury to fish or birds, but the activity could still result in individuals moving out of the area. Movement away from, or out of, the work area does not rise to the level that there is a likelihood of injury due to disruption of normal behavioral patterns. Any individual salmonids, green sturgeon, longfin smelt, or birds can resume normal behavioral patterns once out of the annoying range of sound generation. **Therefore, noise generated during pile driving activities may affect, but is unlikely to adversely affect listed fish, bird, and invertebrate species**.

5.2.2 Suspended Sediment and Water Quality

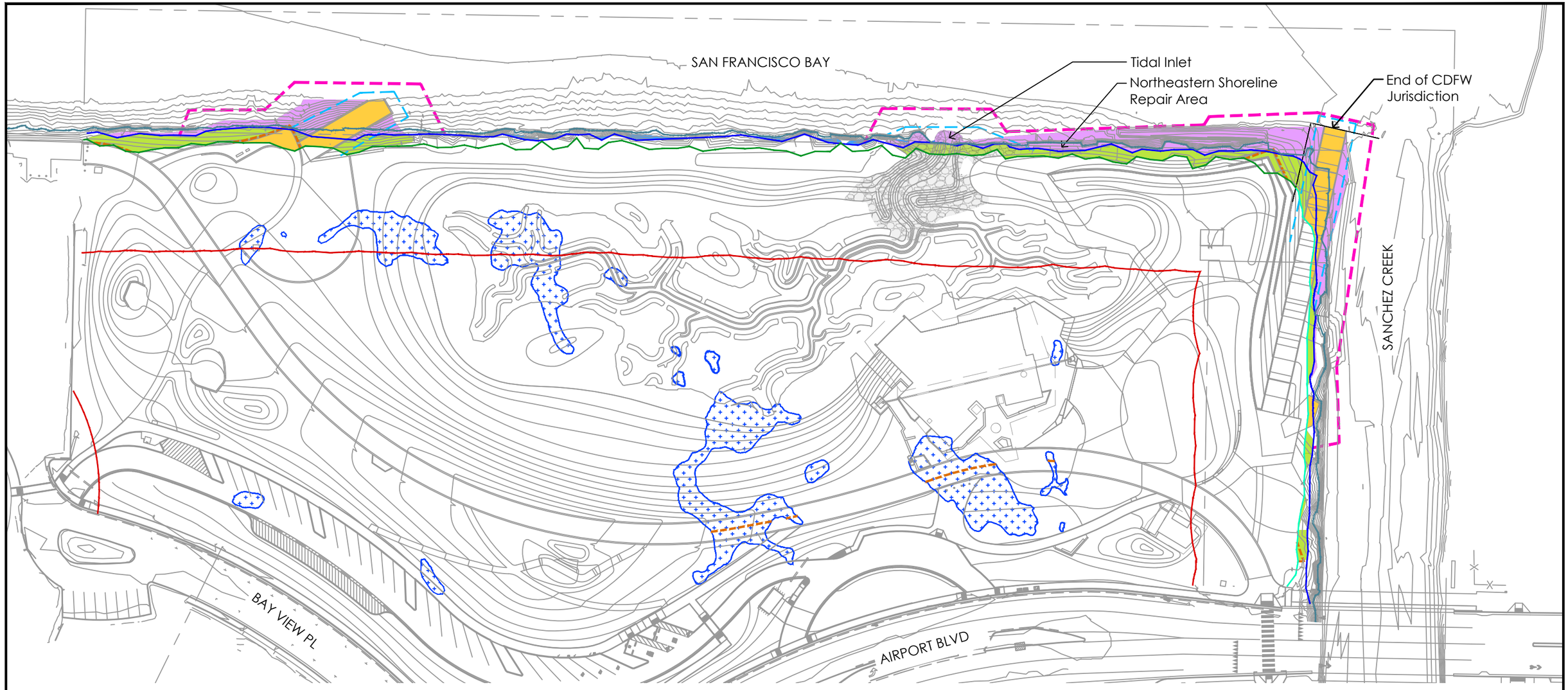
There are no available data on how much suspended sediment may be generated by driving pilings and repairing the northeastern shoreline. However, the first responses of salmonids and other fish to elevated levels of suspended sediment are alarm, abandonment of cover, and avoidance (Newcombe and Jensen 1996). These anticipated short-term, indirect effects of pile driving and shoreline repairs on water quality are manageable by employing work windows. The establishment of the work window (June 1 to November 30) and the low likelihood of the occurrence of salmonids during this time makes it highly unlikely that there will be any exposure of these species to elevated suspended sediment levels. A turbidity curtain installed at low tide around the work area will further exclude fish from the work area and reduce exposure to high SSC levels. In addition, the noise and vibration from pile driving and shoreline repairs is expected to result in fish leaving the area of disturbance. **Therefore, suspended sediment generated by piling installation and shoreline repairs may affect, but is not likely to adversely affect listed fish species**.

Water quality effects from this pile driving and removal are short-term. Water quality effects can also be direct: water quality can be degraded by unintentional spills or contaminants from the sediment, or vessels and other project components, and contaminants can result in death, particularly to vulnerable life stages (e.g., larvae, eggs).

5.2.3 Habitat Effects

The California least tern may occasionally occur on the project site as nonbreeding foragers; although project activities may disturb prey that diving birds forage on, in the Bay there are wide expanses of suitable foraging habitat and these disturbances are likely insignificant. The project would benefit habitat in the long-term for CCC steelhead, green sturgeon, and longfin smelt (i.e., food resources and water quality) through creation of a

new tidal marsh channels and installation of living shoreline elements into rock slope protection at the tidal inlet, kitesurfing ramp, and water rescue/kayak access ramp within portions of the new hard structures. The rocky intertidal fill/living shoreline enhancement areas would be designed to replace anthropogenic concrete debris with hard substrate that will facilitate rapid colonization by native hard substrate macroalgae and invertebrates. The project would not result in a net loss of habitat, however, temporary impacts on aquatic habitat could occur through fish exclusion. Long-term impacts may also occur through permanent shading underneath the kitesurfing and kayak/water rescue ramps. Low light levels caused by overwater structures affects the capabilities of photosynthesizers, which are an essential part of nearshore habitat and the estuarine foodwebs that support many species of marine and estuarine fishes. However, the relatively small footprint of the ramps will not shade a large enough area to significantly reduce the production of prey items in the estuary, and individuals will still be able to find food. Additionally, the shadows cast by structures may increase predation on managed species by creating a light/dark interface that allows ambush predators to remain hidden. A total of 0.08 acres would be permanently impacted by concrete fill at the ramps. However, this project is expected to provide a net benefit to the habitat of salmonids, sturgeon, and longfin smelt, as a total of 2.00 acres of tidal marsh, rocky intertidal, and subtidal/mudflat habitat will be restored, created, and enhanced. **Therefore, aquatic habitat impacts may affect, but are not likely to adversely affect listed fish or bird species**.



LEGEND

- Existing High Tide Line (Limit of USACE and RWQCB Jurisdction)
- Existing Top of Bank (Limit of CDFW Jurisdiction)
- Existing Top of Bank (Outside CDFW Jurisdiction)
- Existing MHW (BCDC Bay Jurisdiction Line)
- Existing BCDC 100-ft Shoreline Band

TEMPORARY IMPACTS TO WATERS OF THE U.S. / STATE (ACRES)

Symbol	Temporary Impact Type	RWQCB / USACE	CDFW
	Rocky Intertidal Fill / Living Shoreline Enhancement Below HTL	0.24	0.04
	Graded and Reconstructed Developed / Landscaped Habitat Above HTL	-	0.03
	Elevated Turbidity within Turbidity Curtain (Includes Rocky Intertidal Fill)	0.60	0.20
	Cofferdam or Sheet Pile Wall	0.16	0.06

PERMANENT IMPACTS TO WATERS OF THE U.S. / STATE (ACRES)

Symbol	Permanent Impact Type	RWQCB / USACE	CDFW
	Concrete Fill	0.06	0.05
	Removal of Seasonal Wetlands	0.40	-
	Shoreline Reinforcement - Rip Rap	0.02	-
	Shoreline Reinforcement - Sheet Piles	0.003	0.001

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Figure 6: Jurisdictional Habitat Impact Map
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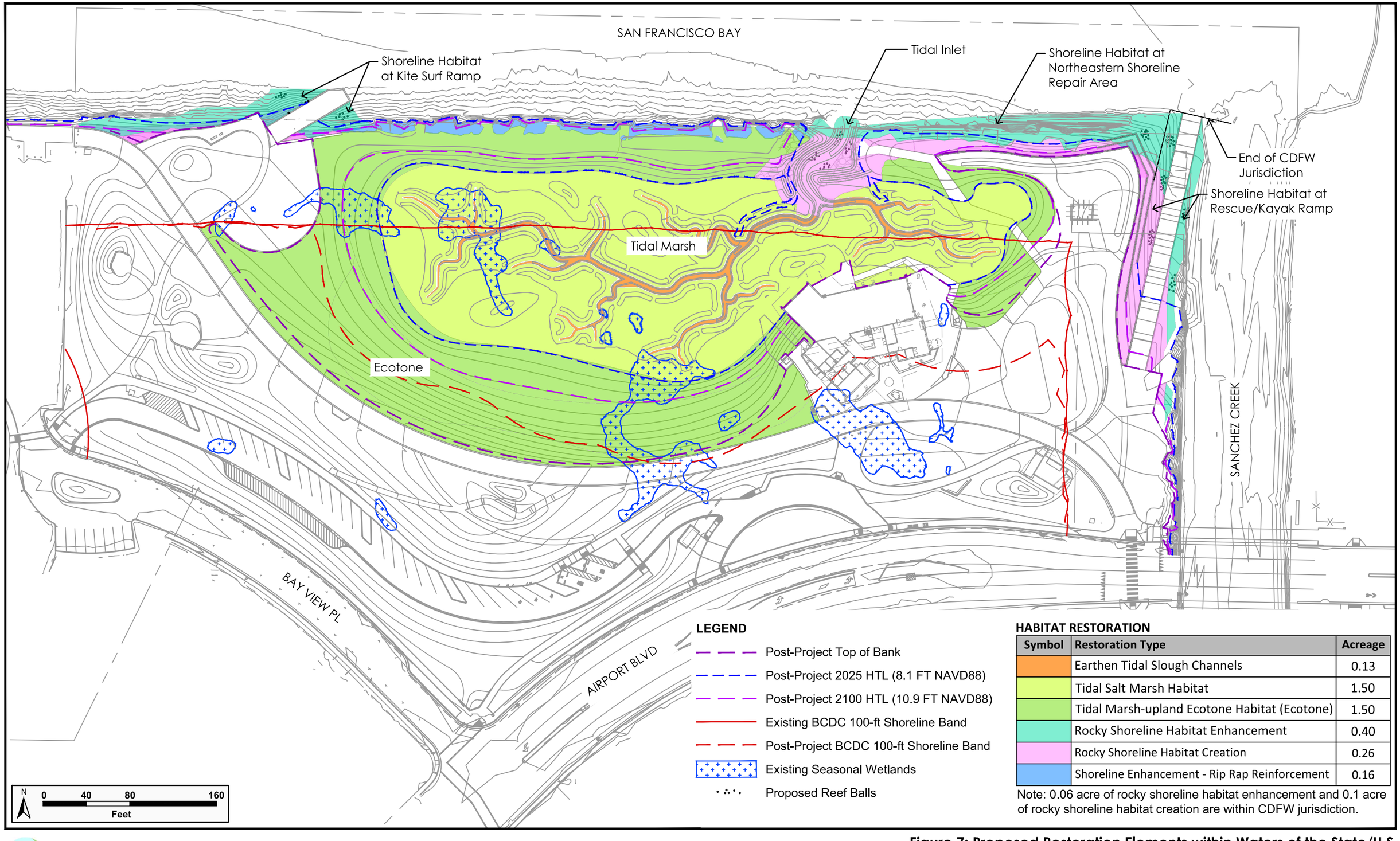

HABITAT RESTORATION

Symbol	Restoration Type	Acreage
	Earthen Tidal Slough Channels	0.13
	Tidal Salt Marsh Habitat	1.50
	Tidal Marsh-upland Ecotone Habitat (Ecotone)	1.50
	Rocky Shoreline Habitat Enhancement	0.40
	Rocky Shoreline Habitat Creation	0.26
	Shoreline Enhancement - Rip Rap Reinforcement	0.16

Note: 0.06 acre of rocky shoreline habitat enhancement and 0.1 acre of rocky shoreline habitat creation are within CDFW jurisdiction.

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Figure 7: Proposed Restoration Elements within Waters of the State/U.S.

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Section 6. Effects of the Action

The effect of the project on the ESA-listed species' critical habitat is based on the constituent elements required to support one or more life history stage(s). Constituent elements are "those physical or biological features that are essential to the conservation of a given species" (NMFS 2005). For estuarine areas, the conservation function of critical habitat must support the foraging, growth and maturity of juveniles and adults, including forage-related aquatic invertebrates and fishes. These features (among the other constituent elements) are essential to conservation value. Without them juveniles cannot reach the ocean in a timely manner and use the variety of habitat that allow them to avoid predators, compete successfully, and complete the behavioral and physiological changes needed for life in the ocean.

6.1 Birds

6.1.1 California Least Tern

California least terns are not known or expected to nest on or adjacent to the project site, and this species does not currently nest in San Mateo County. No suitable nesting habitat is present on the site, and the closest known breeding colony occurs over 13 mi north at Alameda Point. The California least tern may occasionally occur on the project site as nonbreeding foragers. The activity could result in individual birds moving out of the area, however, in the Bay where there are wide expanses of suitable foraging habitat, this movement would not rise to the level that there is a likelihood of injury due to disruption of normal behavioral patterns. Individuals are likely to migrate south from California nesting sites mid-way through the work window. **Therefore, the impacts of the proposed action may affect, but are not likely to adversely affect the listed California least tern**.

6.2 Invertebrates

6.2.1 Monarch Butterfly

This species has only been documented in very low numbers in San Mateo County, and suitable habitat is abundant in the Bay, as adults forage on a wide variety of flowers for nectar. Monarch butterflies are expected to occur on the site only as occasional visitors during fall and spring migration, only during the latter portion of the work window. As their larval host plant, milkweed, is absent, no breeding is expected to occur. Project construction and operation are not expected to result in injury or mortality of this species or the loss of any important foraging habitat for migrant individuals. **Therefore, the impacts of the proposed action may affect, but are not likely to adversely affect the listed monarch butterfly**.

6.3 Fish

A number of listed fish species have the potential to be in the action area and would potentially experience impacts during proposed project activities. These species include CCC steelhead, green sturgeon (sDPS), and longfin smelt (SFBD DPS). All salmonid species have a moderate to high likelihood to be present in the action area during the fall, winter, and spring seasons due to its proximity to deeper water habitat in Sn Francisco Bay. However, there is a low potential for salmonids to be present in the action area during implementation of the proposed action, because the June 1 to November 30 work window was established to allow operations to occur during the time period when salmonids would be more likely to be in the ocean rather than in the bay.

Potential impacts on these species could include injury or mortality of individuals due to installation of pilings. In addition, short-term degradation of water quality could result from construction activities. Degraded water quality may result from increased turbidity from disturbance of sediment or from accidental spills or leakage from machinery during near or in-water construction activities. This may result in localized disturbance of juveniles and adults, potentially resulting in stress, disruption of essential behaviors, or physiological impairment.

6.3.1 CCC Steelhead

Steel pipe piles will be driven into the bay substrate as part of the proposed action. The contractor will employ vibratory pile driving to install the pilings, but will use an impact hammer if the pilings meet refusal prior to achieving the tip elevation. Pile driving may adversely affect any steelhead salmon that may be in the action area. However, there is a low potential for steelhead salmon smolts or adults to be present within the action area during implementation of the proposed action, because they have never been observed in South San Francisco Bay and the June 1 to November 30 work window was established to allow operations to occur during the time period when juvenile and adult steelhead salmon would likely be either upstream or in the ocean, and not the bay.

As stated above in Section 5.1.1, the peak and accumulated SEL are not likely to exceed injury threshold levels if a vibratory hammer is used to place steel sheet and pipe piles. An impact hammer will be used to set any individual piling that refuses to achieve designed tip elevation. In the case that an impact hammer is used, a bubble curtain will be used to reduce noise levels to below the FHWG (2008) injury threshold levels. Although pile driving noise levels will potentially exceed threshold levels under a worst-case scenario, resulting in injury to fish, CCC steelhead salmon are not expected to be present in the action area during the proposed work window. The activity could nonetheless result in individual fish moving out of the area. However, this movement away from the pile driving area would not constitute harassment, which is a form of take. The reason for this is that the movement out of the area, especially in the Bay where there are wide expanses of suitable habitat, does not rise to the level that there is a likelihood of injury due to disruption of normal behavioral patterns. Therefore, the noise generated during construction is not likely to result in adverse effects on adult steelhead salmon that may be moving through the work area on their way to staging outside of their spawning streams. Impacts on steelhead smolts are not expected because these fish would likely already be residing in the

ocean at that time. **Noise generated by pile driving may affect, but is unlikely to adversely affect CCC steelhead salmon**.

It is expected that any steelhead salmon within the action area would avoid the area around pile driving activities due to the level of general disturbance caused by the construction activities and pile driving noise. The very short duration of pile driving activities and the installation of turbidity curtains would further reduce the potential for any suspended sediment-related effects on steelhead salmon. The in-water operations period (June 1 to November 30) was established to avoid the periods when steelhead salmon are more likely to be present. **Therefore, suspended sediment generated by driving piles and repairing the shoreline may affect, but is not likely to adversely affect listed CCC steelhead salmon**.

Although living shoreline treatments would result in up to 0.08 acres of permanent impacts to existing aquatic habitat below the HTL via installation of concrete water access ramps, and up to 0.24 acres of aquatic habitat below the HTL would be temporarily impacted via removal of concrete debris and replacement with imported hard substrate (e.g., rip rap), the rocky intertidal fill/living shoreline enhancement areas would be designed to replace anthropogenic concrete debris with hard substrate that will facilitate rapid colonization by hard substrate macroalgae and invertebrates below MHW. Temporary habitat impacts are offset by the restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat, providing valuable food resources and improving water quality long-term. A temporary turbidity curtain would result in temporary fish exclusion, but the in-water operations period (June 1 to November 30) was established to avoid the periods when steelhead salmon are more likely to be present. Long-term, the project is expected to benefit the primary constituent elements of habitat for steelhead such as food resources and water quality. **Therefore, aquatic habitat impacts generated by driving piles and repairing the shoreline may affect, but is not likely to adversely affect listed CCC steelhead salmon**.

6.3.1.1 Critical Habitat

The action area is located with designated critical habitat for CCC steelhead salmon. The effects of the proposed action's activities on designated steelhead critical habitat are limited to effects on the PBFs of estuarine areas, including: 1) areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; 2) natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and 3) juvenile and adult forage, supporting growth and maturation (NMFS 2005). The essential features that may be affected by the proposed action's pile driving and shoreline repairs include water quality, natural vegetated cover, and prey resources.

The proposed action includes activities that could degrade the essential features of water quality. Degraded water quality could result from increased turbidity from disturbance of sediment during pile driving or shoreline repairs, or hydrocarbon (e.g., gasoline, diesel, lube oil, hydraulic fluid, etc.) spills from equipment. Implementation of the following measures, which are included in the proposed action, will minimize the risk of impacts on individuals, if present nearby. These measures include: 1) institution of an operational work

window that limits in-water operations to the late spring through mid fall when listed species are unlikely to be present, 2) implementation of a spill response plan and placement of spill kits on site, 3) ensuring that all heavy equipment that works within the action area will be free of fluid leaks, and 4) immediate clean-up of any hydraulic leaks or spills. Temporary impacts to water quality through increased turbidity during construction and potential mobilization of chemicals or contaminants from equipment are expected to be minimal given the localized and short-term nature of the project. The impact on the total amount of habitat space for CCC steelhead salmon will be very small, if any, and insignificant; a much larger area of the surrounding bay will remain undisturbed. Any impacts will further be minimized through mitigation measures described in Section 2.4. **Therefore, the suspended sediment, and aquatic habitat impacts generated by the proposed action may affect, but are not likely to adversely affect or result in the adverse modification of the water quality PBF for CCC steelhead salmon**.

The proposed action will result in the loss of food resources that would exist within the new 11 pilings' footprint. However, this loss is considered temporary due to the creation of living shoreline constituents and the eventual establishment of food resources in those locations. The restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat will contribute to the valuable food resources in adjacent mudflats. Any temporary loss of benthic prey and redistribution within South San Francisco Bay is not likely to impact their population long-term. **Therefore, the proposed action may affect, but is not likely to adversely affect or result in the adverse modification of the food resources PBF of designated critical habitat for CCC steelhead salmon**.

6.3.2 Green Sturgeon (sDPS)

Adult sDPS green sturgeon inhabit estuaries and coastal areas along the West Coast during the summer and fall months and spawning individuals begin their migration into fresh water in late February (Moyle et al. 1995, Moser and Lindley 2007, Miller et al. 2020). Larval sDPS green sturgeon rear in their natal streams within the Central Valley, and juveniles and sub-adults may move throughout the Delta, San Pablo Bay, or to the ocean, but neither regularly inhabit South San Francisco Bay (Klimley et al. 2015, Interagency Ecological Program for the San Francisco Estuary 2022).

The effects of the proposed action on green sturgeon are generally the same as those described for CCC steelhead in Section 6.3.1. However, although not well-documented, green sturgeon may be present in South San Francisco Bay year-round, and potentially present in the action area during the June 1 – November 30 work window (Miller et al. 2020). Applicable BMPs will be implemented to minimize adverse acoustic effects, including the use of a "soft start" to deter any fish away from the piles being driven. Any movement away from the pile driving area would not constitute harassment, as this movement would not rise to the level that there is a likelihood of injury caused by disruption of normal behavioral patterns, due to wide expanses of suitable habitat. Given the short duration of pile driving activities, acoustic impacts to green sturgeon are expected to be insignificant. **Therefore, the noise generated by the proposed action may affect, but is not likely to adversely affect sDPS green sturgeon**.

The very short duration of pile driving activities and the installation of turbidity curtains would reduce the potential for any suspended sediment-related effects on green sturgeon. In addition, the noise and vibration from pile driving and shoreline repairs is expected to result in fish leaving the area of disturbance. Temporary habitat loss would be offset by the restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat, which will contribute to the valuable food resources in adjacent mudflats. **The suspended sediment and aquatic habitat impacts generated by the proposed action may affect, but is unlikely to adversely affect sDPS green sturgeon**.

6.3.2.1 Critical Habitat

The action area is located with designated critical habitat for sDPS green sturgeon. The effects of the proposed action's activities on designated green sturgeon critical habitat are limited to effects on the PBFs of estuarine areas, including: 1) juvenile and adult prey, including aquatic invertebrates and fishes, supporting growth and maturation; 2) sufficient water flow for successful upstream migration to spawning grounds; 3) water quality, including temperature and salinity, necessary for normal behavior, growth and viability of all life stages; 4) migratory pathways necessary for safe and timely passage of fish within and between habitats; 5) diversity of water depth necessary for shelter, foraging and migration; and 6) sediment quality necessary for normal behavior, growth and viability of all life stages (NMFS 2009). The essential features that may be affected by the proposed action's pile driving and shoreline repairs include prey resources, water quality, and sediment quality. The proposed action will result in the loss of food resources that would exist within the new 11 pilings' footprint. However, this loss is considered temporary due to the creation of living shoreline constituents and the eventual establishment of food resources in those locations. The restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat will contribute to the valuable food resources in adjacent mudflats. Any temporary loss of benthic prey and redistribution within South San Francisco Bay is not likely to impact their population long-term. **Therefore, the proposed action may affect, but is not likely to adversely affect or result in the adverse modification of the food resources PBF of designated critical habitat for sDPS green sturgeon**.

The proposed action includes activities that could degrade the essential features of water and sediment quality. Degraded water quality could result from increased turbidity from disturbance of sediment during pile driving or shoreline repairs, or hydrocarbon (e.g., gasoline, diesel, lube oil, hydraulic fluid, etc.) spills from equipment. Implementation of the following measures, which are included in the proposed action, will minimize the risk of impacts on individuals, if present nearby. These measures include: 1) implementation of a spill response plan and placement of spill kits on site, 2) ensuring that all heavy equipment that works within the action area will be free of fluid leaks, and 3) immediate clean-up of any hydraulic leaks or spills.

Temporary impacts to water and sediment quality through increased turbidity during construction and potential mobilization of chemicals or contaminants from equipment are expected to be minimal given the localized and short-term nature of the project. A turbidity curtain installed at low tide around the work area will further exclude fish from the work area and reduce exposure to high SSC levels. In addition, the noise and vibration from pile driving and shoreline repairs is expected to result in fish leaving the area of disturbance. The impact

on the total amount of habitat space for green sturgeon will be very small, if any, and insignificant; a much larger area of the surrounding bay will remain undisturbed. Any impacts will further be minimized through mitigation measures described in Section 2.4. **Therefore, the suspended sediment, and aquatic habitat impacts generated by the proposed action are not likely to adversely affect or result in the adverse modification of the water and sediment quality PBFs for sDPS green sturgeon**.

6.3.3 Longfin Smelt (SFBD DPS)

Pile driving may adversely affect any longfin smelt that may be in the action area. However, there is a low potential for longfin smelt larvae to be present within the action area due to low-salinity habitat requirements and project timing. Juvenile and adult longfin smelt are also unlikely to be present during implementation of the proposed action, because the June 1 to November 30 work window also allows operations to occur during the time period when juvenile and adult longfin smelt would likely be in the ocean and not the bay.

Although pile driving noise levels will potentially exceed threshold levels under a worst-case scenario, resulting in injury to fish, longfin smelt are not expected to be present in the action area in high densities during the proposed work window. The activity could nonetheless result in individual fish moving out of the area. However, this movement away from the pile driving area would not constitute harassment, which is a form of take. The reason for this is that the movement out of the area, especially in the Bay where there are wide expanses of suitable habitat, does not rise to the level that there is a likelihood of injury due to disruption of normal behavioral patterns. Densities are likely significantly lower in the shallow shoal habitat within the action area, compared to the deeper channels offshore. Given the use of noise mitigation measures and monitoring, and the short duration of pile driving activities, acoustic impacts to longfin smelt are expected to be insignificant. **Therefore, noise generated by pile driving may affect, but is not likely to adversely affect SFBD DPS longfin smelt**.

It is expected that any juvenile and adult longfin smelt within the action area would avoid the area around pile driving activities due to the level of general disturbance caused by the construction activities and pile driving noise. The very short duration of pile driving activities and the installation of turbidity curtains would further reduce the potential for any suspended sediment-related effects on longfin smelt. There is additionally no suitable spawning habitat near the action area, thus sedimentation is not expected to affect egg adhesion. The established in-water operations period (June 1 to November 30) will avoid the periods when juvenile and adult longfin smelt are more likely to be present. **Therefore, suspended sediment generated by driving piles and repairing the shoreline may affect, but is not likely to adversely affect listed SFBD DPS longfin smelt**.

Although living shoreline treatments would result in up to 0.08 acres of permanent impacts to existing aquatic habitat below the HTL via installation of concrete water access ramps, and up to 0.24 acres of aquatic habitat below the HTL would be temporarily impacted via removal of concrete debris and replacement with imported hard substrate (e.g., rip rap), the rocky intertidal fill/living shoreline enhancement areas would be designed to replace anthropogenic concrete debris with hard substrate that will facilitate rapid colonization by hard substrate macroalgae and invertebrates below MHW. Temporary habitat impacts are offset by the restoration, creation,

and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat, providing valuable food resources and improving water quality long-term. A temporary turbidity curtain would result in temporary fish exclusion, but the in-water operations period (June 1 to November 30) will avoid the periods when juvenile and adult longfin smelt are more likely to be present. **Therefore, aquatic habitat impacts generated by driving piles and repairing the shoreline may affect, but is not likely to adversely affect listed SFBD DPS longfin smelt**.

Critical Habitat—Longfin smelt in the SFBD DPS was listed as a threatened species under the ESA on July 30, 2024 (USFWS 2024). Currently no critical habitat for the species has been designated.

6.4 Cumulative Effects

Cumulative effects are defined by ESA regulations as "those effects of future State or private activities, not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future federal actions that are unrelated to the proposed action will require separate consultation pursuant to Section 7 of the ESA. For example, any projects necessitating Clean Water Act permits from the U.S. Army Corps of Engineers will have a federal nexus under Section 7, and thus most projects potentially impacting fish or EFH will undergo Section 7 consultation. If the proposed action has been determined to result in no effect on, or is not likely to adversely affect a species, then future projects would not contribute to any cumulative effects and are thus not discussed in this section.

There are no other projects near the action area that meet the cumulative effects criteria defined above.

The proposed project may affect but is not likely to adversely affect ESA-listed species, designated critical habitat, and EFH. These effects are offset through tidal marsh creation, and BMPs to avoid and minimize impacts. As a result, the project will adequately mitigate its contribution to cumulative adverse effects on the species covered in this BA/EFH assessment.

Section 7. EFH Assessment

This section reviews the potential impacts of the project on EFH. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). For this EFH effects analysis, the ways shoreline repairs and upgrades would impact the waters and substrate necessary for the full lifecycle of a species are considered. The information in this section includes content that can support EFH consultation, where formal impact determinations and assessments will be made. The action area contains EFH as designated under the Pacific Coast Groundfish, Coastal Pelagic, and Pacific Coast Salmon FMPs. The potential impacts of construction and habitat change on EFH may result from construction itself.

7.1 Pacific Coast Salmon

EFH for Pacific salmon in the action area includes nearshore and tidal submerged environments within state territorial waters that are necessary for the feeding or growth to maturity for juvenile coho salmon and Chinook salmon. The potential effects of the proposed action on Pacific Coast Salmon EFH would be similar to those affecting the PBF of designated critical habitat, including prey availability and water quality.

The proposed action includes activities that could result in the minor and temporary loss of juvenile forage and degrade water quality within the action area due to pile driving and generation of suspended sediment. Any loss of prey from the project construction is unlikely to represent a significant loss of food resources because juvenile salmon are more dependent on coastal waters for energetic gains that are essential to their survival (Daly et al. 2009, MacFarlane 2010). Long-term, the project is expected to benefit food resources and water quality in the vicinity and thus provide benefit to the habitat as a whole. Temporary habitat impacts are offset by the restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat, providing valuable food resources and improving water quality long-term. A number of BMPs and mitigation measures will be implemented to avoid or minimize short-term impacts on EFH, as described in Section 2.4. These include conducting pile driving when salmon are not likely in the action area, the use of turbidity curtains during construction, and implementation of a spill prevention and clean-up plan. Nonetheless, project activities could temporarily impact water quality and food resources. **Therefore, the proposed action may adversely affect Pacific Coast Salmon EFH in the short term**.

7.2 Pacific Coast Groundfish

EFH for groundfish in the action area includes nearshore and tidal submerged environments within state territorial waters that are necessary for their spawning, feeding, or growth to maturity. The potential effects of the proposed action on Pacific Coast Groundfish EFH would be similar to those described for Pacific Coast Salmon EFH.

The proposed action includes activities that could result in the minor and temporary loss of juvenile forage and degrade water quality within the action area due to pile driving and generation of suspended sediment. Long-term, the project is expected to benefit food resources and water quality in the vicinity and thus provide benefit to the habitat as a whole. Temporary habitat impacts are offset by the restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat, providing valuable food resources and improving water quality long-term. A number of BMPs and mitigation measures will be implemented to avoid or minimize impacts on EFH, as described in Section 2.4 and for Pacific coast salmon in Section 7.1; nonetheless, project activities could temporarily impact water quality and food resources. **Therefore, the proposed action may adversely affect Pacific Coast Groundfish EFH in the short term**.

7.3 Coastal Pelagic Species

EFH for the species/species groups managed under the coastal pelagic FMP that are potentially present in the action area, which include northern anchovies and Pacific sardine, could be expected to be affected by the proposed project. That said, any impacts on coastal pelagic species EFH would not necessarily have a measurable effect because these species do not necessarily rely on South San Francisco Bay as primary habitat for spawning, breeding, feeding, or growth to maturity. Species/species groups managed under coastal pelagic FMP are more reliant on coastal waters outside of estuaries. Construction activities have potential to result in increased turbidity and result in a short-term loss of habitat, although recolonization long-term is likely and expected. A number of BMPs and mitigation measures will be implemented to avoid or minimize short-term impacts on EFH, as described in Section 2.4. These include the use of turbidity curtains during construction, and implementation of a spill prevention and clean-up plan. It is possible that coastal pelagic EFH may experience benefits from living shoreline repairs, which could improve habitat quality and prey availability at the site long-term. **Therefore, the proposed may adversely affect Coastal Pelagic Species EFH in the short term**.

Pacific herring are classified as an ECS in the coastal pelagic FMP. Construction activities are unlikely to affect Pacific herring as they spawn in the bay typically December through February, well after the project work has occurred. Although they may deposit their eggs on the rip rap shoreline, long-term impact to Pacific herring spawning is not expected, as tidal marsh creation and shoreline repairs will ultimately restore this potential spawning habitat. **The proposed action will therefore result in no net loss of Pacific herring spawning grounds and will not impact Pacific herring spawning**.

7.4 HAPC

Estuaries (including the Bay) are considered an HAPC (PFMC 2024a, c). This designation for estuaries is based on the importance of highly productive shallow waters within estuaries to salmon, groundfish, coastal pelagic species, and their prey. Construction may result in short-term impacts on water quality from increased turbidity, but long-term impacts may not be significant due to tidal flushing. The potentially significant short-term impacts from the proposed project on the estuary will be minimized through BMPs and appropriate

minimization measures, which are described in Section 2.4. Long-term, the project is expected to benefit food resources and water quality in the vicinity and thus provide benefit to the habitat as a whole.

Section 8. Determination

Based on the above analysis, implementation of the proposed project **may affect, and is not likely to adversely affect** listed bird, plant, invertebrate, or fish species in the action area. The project **may affect, but is not likely to adversely affect designated critical habitat.** While potentially adverse effects exist, including increased underwater noise, sediment suspension, and aquatic habitat impacts, such impacts are short-term and insignificant. There are also beneficial effects of the proposed project that are incorporated through restoration efforts. These beneficial long-term effects include improving habitat and water quality, through the restoration, creation, and enhancement of 2.00 acres of subtidal/mudflat, tidal salt marsh, and rocky intertidal habitat. Any potential long-term effects of the project on critical habitat are also beneficial. In addition, a number of BMPs and mitigation measures will be implemented to avoid or minimize short-term impacts on EFH. These include the use of turbidity curtains during construction, and implementation of a spill prevention and clean-up plan. Despite these long-term benefits, the proposed project **may adversely affect EFH in the short term**.

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