

3.3 Biological Resources

This section describes the biological resources that have the potential to be impacted by the proposed Larkspur Ferry Service Expansion and Parking Project (Project), as documented in the Natural Environment Study (NES) (Appendix C). It also provides an overview of federal, state, and local regulations that impact the management of biological resources and an analysis of how the biological resources will be impacted by the proposed Project's Build Alternatives. Chapter 5 discusses impacts related to the No-Project Alternative.

3.3.1 Existing Conditions

3.3.1.1 Regulatory Setting

The Golden Gate Bridge, Highway and Transportation District (District), as the owner of the Larkspur Ferry Terminal, is the California Environmental Quality Act (CEQA) Lead Agency for the Project and has prepared this Draft Environmental Impact Report (DEIR) to evaluate potential impacts and identify required mitigation to avoid or reduce potentially significant impacts. The federal, state, and regional and local regulations applicable to the Project are provided in this section.

Federal

Endangered Species Act

The federal Endangered Species Act (FESA) and subsequent amendments provide regulations for the conservation of endangered and threatened species and the ecosystems on which they depend (16 United States Code [U.S.C.] §1531-1544). The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over plants, wildlife, and resident fish, and the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous and marine fish and marine mammals. Both USFWS and NMFS oversee the implementation of the FESA.

Section 7 mandates all federal agencies to consult with USFWS and/or NMFS if they determine a proposed action or project may affect a listed species or its habitat. Section 9 prohibits take of any fish or wildlife species listed as endangered or threatened, including the destruction of habitat that prevents the species' recovery. Section 10(a)(1)(B) allows nonfederal entities to obtain permits for incidental taking of threatened or endangered species through consultation with USFWS and/or NMFS (16 U.S.C. §1539).

Critical habitat is required to support the recovery of species listed as threatened or endangered under the FESA. It can be designated by USFWS or NMFS. Critical habitat for species under USFWS jurisdiction is defined as the specific areas within the geographic area occupied by the species, at the time it was listed, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protections (16 U.S.C. §1532). It may also contain specific areas outside the geographical area occupied by the species during the time it is listed essential for the conservation of the species. Critical habitat for species managed by NMFS is defined as specific areas within the geographical area occupied by the species at the time of listing that contain physical or biological features essential to their conservation and that may require specific management considerations or protections and specific areas outside the geographical area occupied by a species if the agency determines it is essential for conservation.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with NMFS on all actions that may adversely affect Essential Fish Habitat (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]). EFH waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish. For Pacific coast species, EFH is described under four fishery management plans covering groundfish, coastal pelagic species, highly migratory species, and Pacific coast salmon. Habitat areas of particular concern are a subset of EFH (for example, estuaries).

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) (16 U.S.C. 31 Sections 1361–1362, 1371–1389, 1401–1407, 1411–1418, 1421–1421h, and 1423–1423h) established a national policy to prevent marine mammal species and population stocks from declining beyond the point where they ceased to be significant functioning elements of the ecosystems of which they are a part. With certain exceptions, it prohibits take (defined under statute to include harassment) of marine mammals in the nation’s waters and the high seas. Congress amended the MMPA, under the incidental take program, and the FESA in 1986 to authorize incidental takings of depleted, endangered, or threatened marine mammals, provided the taking (defined under statute as actions that are or may be lethal, injurious, or harassing) was small in number and had a negligible impact on marine mammal populations.

Under MMPA Section 101(a)(5)(D), an Incidental Hazard Assessment can be granted by NMFS if it finds that incidental take will have a negligible impact on the species or stock or will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses (where applicable). NMFS defines negligible impact as “an impact resulting from the specified activity that cannot be reasonably expected to, and will not be reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival” (50 Code of Federal Regulations [CFR] § 18.27). Incidental Harassment Authorizations include permissible methods of taking and requirements for mitigation and monitoring to confirm that takings result in the lowest practicable adverse impacts on affected marine mammal species or stocks.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations. These treaties are devised to protect migratory birds and any of their parts, eggs, and nests from activities including hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collection, special purposes (such as rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. Regulations governing migratory bird permits can be found in 50 CFR 13, General Permit Procedures; and 50 CFR 21, Migratory Bird Permits. Applicable measures will be implemented to avoid take of species covered under the MBTA.

Clean Water Act

The Clean Water Act (CWA) serves as the primary federal law protecting the quality of the nation’s surface waters, including lakes, rivers, and coastal wetlands. The CWA operates on the principle that all discharges into the nation’s waters are unlawful unless specifically authorized by a permit; permit review is the CWA’s primary regulatory tool. Aquatic resources (that is, wetlands, ponds, streams, and territorial seas) are

regulated by the U.S. Army Corps of Engineers per the CWA and/or a Regional Water Quality Control Board (RWQCB) per the CWA and/or the state's Porter-Cologne Water Quality Control Act. The following sections provide additional details on specific sections of the CWA.

Permits for Fill Placement in Waters and Wetlands (Section 404/401)

Applicants must obtain a Section 404 permit from U.S. Army Corps of Engineers for all discharges of dredged or fill material into waters of the U.S., including adjacent wetlands, before proceeding with a proposed activity. Pursuant to CWA Section 401, an applicant for a Section 404 permit to conduct any activity that may result in discharge into waters of the U.S. must provide a certification from the RWQCB that such discharge will comply with state water quality standards.

An aquatic resource delineation was performed for the proposed Project in July 2021. Wetlands and waters were found within the Biological Study Area (BSA); however, all Project work will occur on existing hardscape. No impacts to wetlands or waters are anticipated to result from the proposed Project; therefore, no permits under CWA Sections 404 or 401 are required.

Permits for Stormwater Discharge (Section 402)

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, which is administered by the U.S. Environmental Protection Agency. In the Project area, the San Francisco Bay RWQCB is authorized by the U.S. Environmental Protection Agency to oversee the NPDES program. NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge stormwater and prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), which includes the best management practices that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources.

The proposed Project would disturb more than 1 acre of land and would therefore be required to prepare a SWPPP and implement best management practices to control sediment and minimize erosion in accordance with the California General Construction Permit (refer to Section 3.9, Hydrology and Water Quality).

Executive Order 11990: Protection of Wetlands

Executive Order 11990, signed May 24, 1977, requires federal agencies to prepare wetland assessments for proposed actions in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands.

Executive Order 13112: Prevention and Control of Invasive Species

Executive Order 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. This executive order established the National Invasive Species Council, which consists of federal agencies and departments, and a supporting Invasive Species Advisory Committee, which consists of state, local, and private entities. In 2016, the National Invasive Species Council released an updated national invasive species management plan that recommends objectives and measures to implement the executive order and prevent the introduction and spread of invasive species (National Invasive Species Council 2016). The executive order requires consideration of invasive species in National Environmental Policy Act analyses,

including their identification and distribution, their potential effects, and measures to prevent or eradicate them.

State

California Endangered Species Act

The California Endangered Species Act (CESA) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Under CESA, California Department of Fish and Wildlife (CDFW) has responsibility for maintaining a list of endangered and threatened species. State-listed species are fully protected under the mandates of CESA. Take of protected species, incidental to otherwise lawful management activities, may be authorized under *California Fish and Game Code* Section 206.591. Authorization from CDFW is in the form of an Incidental Take Permit. No Incidental Take Permits are expected for the proposed Project.

Porter-Cologne Water Quality Control Act

The California Water Code addresses the full range of water issues in the state and includes Division 7, known as the Porter-Cologne Water Quality Control Act (California Water Code Sections 13000–16104). Section 13260 requires “any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the State to file a report of discharge (an application for waste discharge requirements)” with the appropriate RWQCB. Under this act, each of the nine RWQCBs must prepare and periodically update Water Quality Control Basin Plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. Projects that affect waters of the State must meet the waste discharge requirements of the RWQCB.

Section 13050 of the Porter-Cologne Water Quality Control Act authorizes the California State Water Resources Control Board and the relevant RWQCB to regulate biological pollutants. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA. In 2019, the California State Water Resources Control Board adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, which revised and clarified the regulation of state wetlands and procedures for permitting impacts on wetlands. The procedures took effect on May 28, 2020.

No impacts on wetlands or waters are anticipated to result from the proposed Project; therefore, an application for waste discharge requirements is not required.

California Fish and Game Code Section 1600: Streambed Alteration Agreements

CDFW regulates activities that would interfere with the natural flow—or substantially alter the channel, bed, or bank—of a lake, river, or stream. These activities are regulated under California Fish and Game Code Sections 1600–1616 and require a streambed alteration agreement if they would substantially adversely affect an existing fish or wildlife resource. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. CDFW may require avoidance or minimization of vegetation removal, use of standard erosion-control measures, limitations on the use of heavy equipment, limitations on work periods to avoid impacts on fish and wildlife, and restoration of degraded sites or compensation for permanent habitat losses, among other conditions.

Aquatic resources are not present in the Project footprint; therefore, a streambed alteration agreement would not be required.

McAteer-Petris Act

The McAteer-Petris Act is the state law that created the Bay Area Coastal Development Commission (BCDC) and assigned responsibility to the BCDC to limit fill in the Bay, promote public access to the Bay, prepare for rising sea levels, conduct planning, and issue permits. A permit is required for projects in San Francisco Bay and projects within the first 100 feet inland from the shoreline band.

Major construction work associated with the construction of the parking garage on the Main Lot would be located outside of the shoreline band. Anticipated work within the shoreline band would be limited primarily to restriping the remaining surface lot to accommodate the new circulation and remaining surface parking within the lot, landscape improvements, and drainage tie-ins as applicable. Project components within the shoreline band would be coordinated with the BCDC, and as applicable, an amendment to the District's BCDC permit would be obtained.

Local

Golden Gate Ferry's Whale Aware Procedures

Ferries operated by the District currently follow procedures developed with the Marine Mammal Center and the U.S. Coast Guard to minimize collision risk with whales and other marine mammals (District 2026b). These procedures include the following:

- **Monitoring:** The District monitors whale reports for recent sightings and adjusts ferry routes to steer clear of whales.
- **Observers:** Vessel staff look out for signs of all marine mammals on each trip. The captain reduces speed if a whale is spotted and changes course if needed. The captain also makes an announcement to passengers, offering them an opportunity to see and admire whales from a distance and raise awareness.
- **Reporting:** Staff report whale sightings with precise timing and location to local authorities.

The proposed Project will continue adhering to these practices.

City of Larkspur Tree Ordinance

The City of Larkspur code, Chapter 12.16, Trees, requires approval for removing, pruning beyond the best practices guidelines, or materially changing any mature or "heritage" trees within the City of Larkspur. When construction occurs within the drip line of a heritage tree, actions may be required to protect the tree.

City of Larkspur 2040 General Plan

The following environmental goals for biological resources from *The City of Larkspur 2040 General Plan* (City of Larkspur 2024) are applicable to the proposed Project:

- **Goal ENV-1. Native Habitat Protection.** Protected native habitats, particularly those providing habitat for state and federally listed special-status species.
- **Goal ENV-2. Water Resources Protection.** Protected water and riparian resources.
- **Goal ENV-3. Open Space.** Designated open space areas that are preserved and enhanced.
- **Goal ENV-4. Open Space.** Sufficient open space to meet the health and safety needs of Larkspur residents.

- **Goal ENV-5. Public Access.** Reasonable visual and physical public access to natural resources without adversely impacting natural habitats.
- **Goal ENV-6. Resource Consumption.** Reduced use of natural resources.

Marin Countywide Plan

The following policies for biological resources from the *Marin Countywide Plan* (Marin County Community Development Agency 2023) are applicable to the proposed Project.

BIO-1.1. Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors. Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.

BIO-1.5. Promote Use of Native Plant Species. Encourage use of a variety of native or compatible non-native, non-invasive plant species indigenous to the site vicinity as part of Project landscaping to improve wildlife habitat values.

BIO-1.6. Control Spread of Invasive Exotic Plants. Prohibit use of invasive species in required landscaping as part of the discretionary review of proposed development. Work with landowners, landscapers, the Marin County Open Space District, nurseries, and the multi-agency Weed Management Area to remove and prevent the spread of highly invasive and noxious weeds. Invasive plants are those plants listed in the State's Noxious Weed List, the California Invasive Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California," and other priority species identified by the agricultural commissioner and California Department of Agriculture. Species of particular concern include the following: barbed goatgrass (*Aegilops triuncialis*), giant reed (*Arundo donax*), Italian thistle (*Carduus pycnocephalus*), distaff thistle (*Carthamus lanatus*), purple starthistle (*Centaurea calcitrapa*), yellow starthistle (*Centaurea solstitialis*), pampas grass (*Cortaderia selloana*), Scotch broom (*Cytisus scoparius*), Cape ivy (*Delairea odorata*), oblong spurge (*Euphorbia oblongata*), fennel (*Foeniculum vulgare*), French broom (*Genista monspessulana*), salt-water cord grass (*Spartina alternifolia*), Spanish broom (*Spartium junceum*), medusahead (*Taeniatherum caput-medusae*), gorse (*Ulex europaeus*), and periwinkle (*Vinca major*), among others.

BIO-1.9. Control Spread of Non-Native Invasive Animal Species. Work with landowners, the Marin County Open Space District, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, NMFS, the National Invasive Species Council, Point Reyes National Seashore, and other agencies and organizations to control and prevent the spread of non-native, invasive animal species.

BIO-2.1. Include Resource Preservation in Environmental Review. Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors. Require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving "no net loss" of sensitive habitat acreage, values, and function.

BIO-2.2. Limit Development Impacts. Restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, baylands and coastal habitat, and riparian habitats, as necessary, to ensure the continued health and survival of these species and sensitive areas. Development projects should preferably be modified to avoid impacts on sensitive resources or to adequately mitigate impacts by providing onsite or (as a lowest priority) offsite replacement at a higher ratio.

BIO-2.4. Protect Wildlife Nursery Areas and Movement Corridors. Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas, such as woodlands, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts

BIO-2.5. Restrict Disturbance in Sensitive Habitat During Nesting Season. Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Pre-construction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.

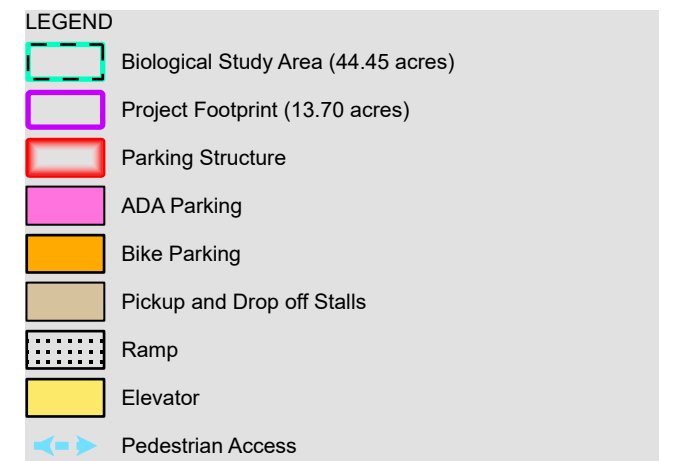
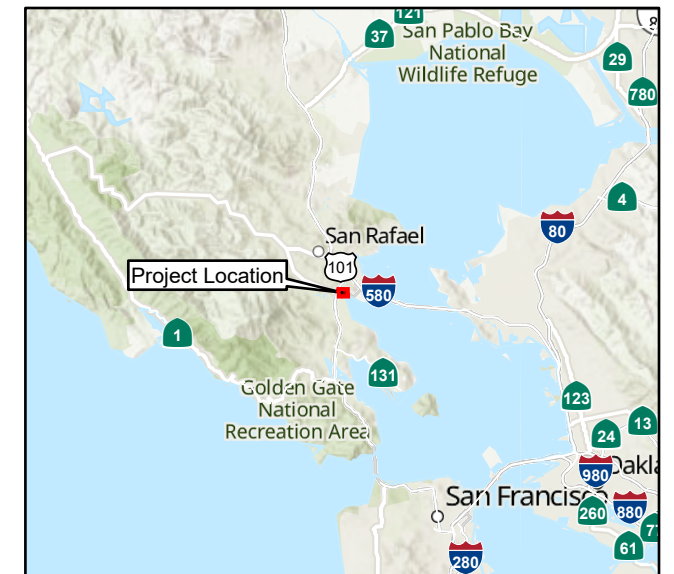
BIO-2.6. Identify Opportunities for Safe Wildlife Movement. Ensure that existing stream channels and riparian corridors continue to provide for wildlife movement at roadway crossings, preferably through the use of bridges, or through over-sized culverts, while maintaining or restoring a natural channel bottom. Consider the need for wildlife movement in designing and expanding major roadways and other barriers in the county. Of particular concern is the possible widening of United States Highway 101 north of Novato to the county line, where maintenance of movement opportunities for terrestrial wildlife between the undeveloped habitat on Mount Burdell and the marshlands along the Petaluma River is critical.

BIO-2.a. Require Site Assessments. Require site assessment by a qualified professional for development applications that may adversely affect sensitive biological or wetland resources, including jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, and important wildlife nursery areas and movement corridors. The assessment should determine the presence or absence of any sensitive resources that could be affected by development, evaluate the potential impacts, and identify measures for protecting the resource and surrounding habitat. Require the assessment to be conducted by a qualified professional paid for by the applicant. Unless waived, the qualified professional should be hired directly by Marin County.

3.3.2 Environmental Setting

This section describes the existing biological conditions to be considered in the impact analysis. The following terms are used to describe the Project:

- **Project Footprint:** The Project footprint consists of the areas of the Project's permanent and temporary direct impacts, including construction access, staging, and laydown areas (Figure 3.3-1).



Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community
 Google Maps Sat: Google Maps
 World Hillshade: Esri, CGIAR, USGS

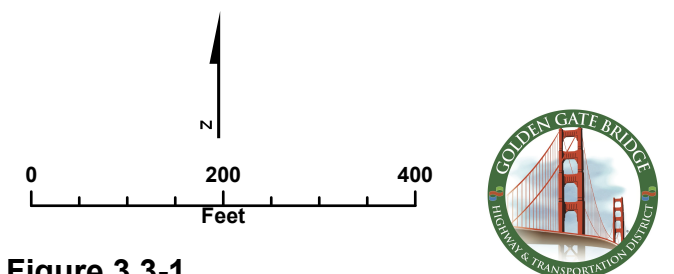


Figure 3.3-1
Biological Study Area and Project Footprint
 Larkspur Ferry Service and Parking Expansion
 Golden Gate Bridge Highway and Transportation District
 Marin County, California

- **Biological Study Area (BSA):** Encompasses the biological study area within the Project footprint and a 350-foot-wide buffer, as shown on Figure 3.3-1. The BSA consists of a 44.45-acre area that encompasses the proposed parking structure footprints, bike parking, pedestrian improvements, the North Lot, adjacent marshes including Triangle Marsh (a small saltmarsh marsh immediately adjacent to the ferry terminal), landscaped areas, oak woodlands, and portions of Corte Madera Creek and San Francisco Bay.
- **Ferry Route:** The corridor from the Larkspur to Downtown San Francisco Terminals. The ferry route was considered to address operational impacts of the Project on marine mammals.

3.3.2.1 Desktop Review

A literature review was completed to identify the potential presence of sensitive resources, special-status species, and critical habitats within the BSA and along the ferry route. The desktop review included the following:

- A species list from the USFWS Sacramento Office was generated on March 6, 2026. It approximately covers the Project footprint and BSA (USFWS 2026).
- The California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California database was searched on March 6, 2026, for the U.S. Geological Survey (USGS) 7.5-minute San Rafael map and the surrounding eight quadrangles (CNPS n.d.).
- A CDFW California Natural Diversity Database (CNDDDB) was queried for all occurrence records within 2 miles on March 6, 2026 (CDFW 2026).
- An official NMFS List was generated on March 6, 2026, for the USGS 7.5-minute San Rafael map (NMFS 2026).
- The NMFS California Species List Tool was queried for the USGS 7.5-minute San Rafael, San Quentin, and San Francisco North maps (NMFS 2026).
- iNaturalist was reviewed for marine mammal occurrences.
- The National Wetlands Inventory database (USFWS 2026) was reviewed to identify the presence of waters and wetlands and to identify potential habitat for special-status aquatic species.
- The Natural Resources Conservation Service Web Soil Survey (and maps were created [NRCS 2026]) was reviewed for the wetlands analysis and identifying potential habitat for special-status plant species.
- The California State Clearinghouse CEQAnet database was reviewed for projects in the City of Larkspur between March 2026 and March 2027 to guide the cumulative impact analysis.

3.3.2.2 Field Surveys and Technical Studies

The field surveys and technical studies conducted to identify existing conditions include the following:

- **Natural Environmental Study (NES):** Provides technical information to determine the extent to which the Project may impact plants, animals, and natural communities (Appendix C).
- **Aquatic Resource Delineation:** A delineation was conducted for a 43.69-acre study area, which encompasses the Project footprint, including potential work locations, staging areas, and access routes. The Aquatic Resource Delineation Report is presented as Appendix B in the NES.
- **Habitat Assessment and Plant Inventory:** A habitat assessment and plant inventory was conducted on July 2, 2021, and March 18, 2026. All plant species encountered during site visits were identified to the extent necessary to determine whether they met the criteria as a federally or state-listed rare,

threatened, or endangered species under FESA, CESA, CNPS, or CEQA. The observed plant list is presented as Appendix C in the NES.

- **Ferry Wake Wash and Shoreline Erosion Analysis:** The effects of the existing ferry wakes on shoreline erosion were analyzed using numerical simulations validated by field measurements recorded from July 8 to 14, 2021 (Jacobs 2022) and again between March 19 and June 11, 2025 (Jacobs 2026). The area of interest consisted of the Corte Madera Channel, the mudflat and tidal marsh (Corte Madera Ecological Reserve) to the southwest, the shoreline to the northeast of the Corte Madera Channel, docking facilities at the Greenbrae Boardwalk Community, and the Paradise Cay Yacht Harbor. This report is presented as Appendix D in the NES.

3.3.2.3 Existing Conditions and Biological Resources

This section provides an overview of the field surveys, technical studies, and the desktop review.

Environmental Setting

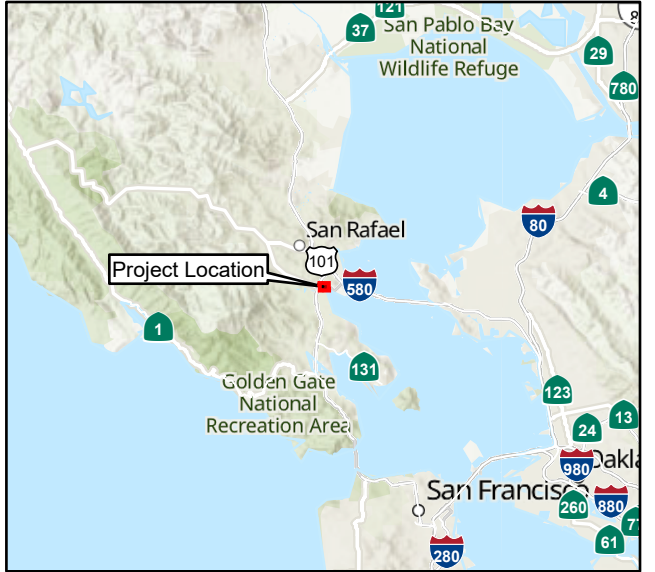
The proposed Project is on the eastern flank of Marin County along the northern San Francisco Bay, bordered by a mix of transportation, commercial, and open-space. The largely urban area has cool, wet winters and warm, dry summers, with oak woodland, mixed evergreen forest, chaparral, and coastal scrub on upland slopes, transitioning to tidal marsh, riparian corridors, and bay shoreline habitats at lower elevations. The elevations in the BSA range from approximately -15 feet in the channel to 45 feet above sea level on Wood Island. The mouth of Corte Madera Creek and the Corte Madera Channel are along the western and southern boundaries.

Land Cover and Vegetation Types

Outside of the developed parking lots and roadways with patches of landscaped vegetation, the natural areas of the BSA consist of patches of coast live oak (*Quercus agrifolia*), rock and sparsely vegetated tidal zones, ruderal vegetation, the estuarine waters of the San Francisco Bay, and marshland consisting of *Sarcocornia pacifica* and *Distichlis spicata* (Figure 3.3-2).

Ruderal and developed/landscaped cover types are not considered sensitive natural communities and are not protected by regulatory agencies. The tidal zones, marshland, and estuarine waters of the Bay are waters of the U.S. and State that would be subject to federal and state regulations that protect aquatic resources. There are two marshes near the proposed Project. These include the following:

- Triangle Marsh—A small saltmarsh immediately adjacent to the ferry terminal, located in the southern portion of the BSA
- Corte Madera Marsh—Across from Corte Madera Creek; the mouth of Corte Madera Creek and Corte Madera Channel are along the western and southern boundaries of the BSA



LEGEND

- Biological Study Area
- Project Footprint
- Parking Structure
- BCDC Bay Jurisdiction
- BCDC Shoreline Band
- Aquatic Resources
 - Waters/Tidelands
 - Wetlands/Marshlands

Notes:
BCDC's Bay Jurisdiction in marshlands (i.e., wetlands) includes the marshlands between Mean High Tide and five feet above Mean Sea Level. Mean Sea Level at the project site is 3.3 feet, NAVD88 (AECOM 2016, BCDC n.d.). The land-side limits of BCDC's Bay Jurisdiction in marshlands are mapped at the 8-foot NAVD88 contour, which is approximately five feet above Mean Sea Level. All areas below Mean Sea Level are also included in BCDC's Bay Jurisdiction.
BCDC's Bay Jurisdiction in tidelands (i.e., areas without marshlands) includes the land lying between Mean High Tide and Mean Low Tide. Mean High Tide is equivalent to the Mean High Water tidal datum. Mean High Water at the project site is 5.51 feet, NAVD88 (AECOM 2016, BCDC n.d.). The land-side limits of BCDC's Bay Jurisdiction in tidelands are mapped at the 6-foot NAVD88 contour, which is an approximation of Mean High Tide. Areas below Mean Low Tide (i.e., submerged lands) are also included in BCDC's Bay Jurisdiction.
BCDC's Shoreline Band is offset 100 feet from the land-side limits of Bay Jurisdiction.

References:
BCDC. no date. SF Bay Tidal Datums Web Application. Accessed on January 12, 2026 at: <https://data-bcdc.opendata.arcgis.com/apps/BCDC:sf-bay-tidal-datums-web-application/explore>

AECOM. 2016. San Francisco Bay Tidal Datums and Extreme Tides Study. Final Report. February.

Local Tidal Data	
Datum	Elevation (feet, NAVD88)
Mean Higher High Water (MHHW)	6.07
Mean High Water (MHW)	5.51
Mean Sea level (MSL)	3.32
Mean Low Water (MLW)	1.13
Mean Lower Low Water (MLLW)	0.12

Source: Tidal data is for Point ID 61 cited in San Francisco Bay Tidal Datums and Extreme Tides Study Final Report (AECOM 2016, BCDC n.d.).

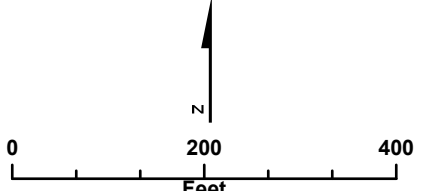


Figure 3.3-2
Aquatic Resources
Larkspur Ferry Service and Parking Expansion
Golden Gate Bridge Highway and Transportation District
Marin County, California

Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community
Google Maps Sat: Google Maps
World Hillshade: Esri, CGIAR, USGS

Sensitive Natural Communities

Natural communities are evaluated by CDFW's Vegetation Classification and Mapping Program using NatureServe's Heritage Methodology of ranking their rarity and threats (VegCAMP 2026).

Within the BSA, the marsh, which is characterized as a *Sarcocornia pacifica* - *Distichlis spicata* alliance, is a California sensitive natural community. The *Ferry Wake Wash and Shoreline Erosion Analysis* (Jacobs 2022; Jacobs 2025; provided in Appendix D of the NES, which is Appendix C of this DEIR) evaluated baseline (existing) conditions associated with ferry operations. The analysis concluded the existing ferry wakes do not have an impact on marsh habitat, including Corte Madera Marsh, and wind waves reaching the marsh are generally higher, last longer, and would otherwise have a greater impact than the existing ferry wakes or increase background levels of turbidity in mudflat waters. Additionally, based on modeling completed for the future Liwa-class vessels, when compared to the existing fleet, wake height would be smaller and wake energy at both 10 and 30 knots arrival and departure speeds would have up to 18% and 30% less energy, respectively. In addition, as discussed in detail in Section 3.9, Hydrology and Water Quality, the new Liwa-class vessel design has a shallower 20-degree jet angle, and the distance the jets must travel to reach the bottom is increased, thus reducing the disturbance per departure resulting in a decrease in the turbidity compared with the legacy fleet. The impact of ferry departure maneuvering on upstream sedimentation and turbidity in the lower reach of the Corte Madera Creek and in the Corte Madera Bay is negligible, and Liwa-class vessels will disturb the bottom and the water column less, even with incrementally increasing the daily departures from 21 (current) up to 38 in 2050 and beyond.

- The existing wake-generated shear stress is not conducive to bottom sediment erosion and would not increase background levels of turbidity in mudflat waters. Consequently, benthic organisms would not be impacted.

This analysis is available in Appendix D of the NES and Section 3.9, Hydrology and Water Quality.

Special-Status Species

Special-status species are plants and animals that are legally protected under the FESA, CESA, or other regulations and are species that are considered sufficiently rare by the scientific community to qualify for such listing. For the purposes of this DEIR, special-status species fall into the following categories:

- Species listed or proposed for listing as threatened or endangered under the Endangered Species Act (ESA) (50 CFR, Parts 17.11 [listed animals] and 17.12 [listed plants], and various notices in the Federal Register [proposed species])
- Species that are candidates for possible future listing as threatened or endangered under the ESA (84 Federal Register 54732 October 10, 2019)
- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations Section 670.5)
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380)
- Animals listed as California species of special concern on CDFW's *Special Animals List* (CNDDDB 2026)
- Animals that are fully protected in California under the California Fish and Game Code (Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians])
- Species protected by the MMPA (16 U.S.C. 31 Sections 1361–1362, 1371–1389, 1401–1407, 1411–1418, 1421–1421h, and 1423–1423h)

- Bats identified as medium or high priority on the Western Bat Working Group regional priority species matrix (<http://wbwg.org/matrices/>)
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.)
- Plants considered by CDFW and the CNPS to be “rare, threatened, or endangered in California” (Rare Plant Ranks 1B and 2) (CNPS 2020)
- Marine mammals covered by the MMPA

Special-Status Plants

A special-status plant species was determined to have potential to occur in the BSA if (1) it historically occurred within or adjacent to the BSA, as documented in the CNDDDB (CDFW 2026b) or Biogeographic Information and Observation System (CDFW 2026a); (2) its known or expected geographic range is within the vicinity of the Project location; or (3) its known or expected habitat is present within or near the BSA. As discussed in detail in the NES (Appendix C), the following species were determined to have a moderate or greater potential to occur in the BSA:

- Humboldt Bay owl's clover (*Castilleja ambigua* var. *humboldtiensis*) – California Rare Plant Rank (CRPR) 1B.2 (rare, threatened, or endangered in California and elsewhere – moderately threatened in California)
- North coast semaphore grass (*Pleuropogon hooverianus*) – CRPR 1B.1 (rare, threatened, or endangered in California and elsewhere – seriously threatened in California)
- Point Reyes salty bird's beak (*Chloropyron maritimum* ssp. *Palustre*) – CRPR 1B.2
- Soft bird's beak (*Cordylanthus mollis* ssp. *mollis*) – CRPR 1B.1

Additional information on these plants is available in Table 3-2 and Section 4.3, Special-Status Plants in the NES, which is Appendix C of this DEIR. A complete list of special-status species for the region is also presented as Appendix A of the NES.

There is no critical habitat for plants in the BSA. During the habitat assessment and plant inventory, one rare (1B.2) plant, Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *Palustris*) was observed within Triangle Marsh during the 2021 survey. Therefore, the marsh was determined to be occupied habitat for this species. However, no federally or state-listed plant species or any other species of special concern were identified during the 2026 survey.

Special-Status Wildlife

Special-status wildlife species were evaluated for their potential to occur within the BSA (and along the ferry route, for marine reptiles and mammals) based on (1) habitat suitability and (2) the current species' range. As discussed in detail in the NES, the following special-status birds and mammals were determined to have a moderate or greater potential to occur in the BSA:

- California Ridgway's rail (*Rallus longirostris obsoletus*) – Federally and state endangered, fully protected (FP)
- California black rail (*Laterallus jamaicensis coturniculus*) – State threatened, FP
- Salt marsh harvest mouse (*Reithrodontomys raviventris*) – Federally and state endangered, FP

Note, the salt marsh harvest mouse were determined to have a low potential to occur, in part because the habitat quality is low quality. However, given their listing status and that presence in the BSA cannot be ruled out, salt marsh harvest mouse are included in the analysis.

The following special-status marine mammals were determined to have a moderate or greater potential to occur in the BSA or along the ferry route:

- California sea lion (*Zalophus californianus*) – Protected under the MMPA
- Common bottlenose dolphin (*Tursiops truncatus*) – Protected under the MMPA
- Gray whale (*Eschrichtius robustus*) – Federally delisted and protected under the MMPA
- Harbor porpoise (*Phocoena phocoena*) – Protected under the MMPA
- Humpback whale (Central America Distinct Population Segment [DPS]; *Megaptera novaengliae*) – Federally endangered and protected under the MMPA
- Humpback whale (Mexico DPS) – Federally threatened and protected under the MMPA
- Pacific harbor seal (*Phoca vitulina richardii*) – Protected under the MMPA

The following special-status fish were determined to have a moderate or greater potential to occur in the BSA or along the ferry route:

- Steelhead (*Oncorhynchus mykiss*; Central Valley DPS) – Federally threatened; ESA-critical habitat overlaps with the BSA
- Steelhead (Central California Coast DPS) – Federally threatened; ESA-critical habitat overlaps with the BSA
- North American green sturgeon (*Acipenser medirostris*; Southern DPS) – Federally threatened and a California Species of Special Concern; ESA-critical habitat overlaps with the BSA
- White sturgeon (*Acipenser transmontanus*) – State candidate species

Additional information on the species listed above is available in Tables 3-4 and 3-5 and Section 4 of the NES, which is Appendix C of this DEIR.

EFH designated by the Pacific Fishery Management Council is also present within the BSA and ferry route, including habitats supporting groundfish, coastal pelagic species, and finfish.

Migratory Birds

Non-special-status migratory birds could nest in trees, shrubs, and ground vegetation in the BSA. The breeding season for most birds is generally from February 15 to September 15. The occupied nests and eggs of migratory birds are protected by federal and state laws, including the MBTA (50 CFR 10.13) and California Fish and Game Code Sections 3503 and 3503.5. USFWS is responsible for overseeing compliance with the MBTA, and CDFW is responsible for overseeing compliance with the California Fish and Game Code and making recommendations on nesting bird protection. Migratory birds that are likely to nest in the vicinity of the Project are those that are common and highly adapted to human disturbance, such as killdeer (*Charadrius vociferus*).

Invasive Plant Species

Invasive plant species are species designated as federal noxious weeds by the U.S. Department of Agriculture, species listed by the California Department of Food and Agriculture, and invasive plants

identified by the California Invasive Plant Council. Invasive plants displace native species, change ecosystem processes, alter plant community structure, and reduce wildlife habitat quality. Invasive plant species occur in ruderal vegetation and marsh land cover types in the Project's BSA. The infestation of the Project footprint by these species is generally limited because construction activities will occur in developed portions of the BSA.

3.3.3 General Avoidance and Minimization Measures

The following avoidance and minimization measures (AMM) are commonly used at construction sites and will be implemented to reduce impacts on biological resources.

AMM-BIO-1. Pre-Construction Surveys

A qualified biologist will perform clearance surveys before construction.

AMM-BIO-2 Migratory Bird Protection

To protect migratory birds and their nests, the following will be implemented:

- During the February 15 to September 15 nesting season, no more than 3 days before construction or any vegetation clearing, the Project area will be surveyed for migratory birds and their nests. If any active nest is found, appropriate buffers will be applied.
- No work will occur within 50 feet of nesting passerine birds or 300 feet of non-listed nesting raptors.
- Any nesting migratory birds or nongame birds near the Project footprint will be regularly monitored for signs of disturbance; work will be avoided in these areas until all birds have fledged.

AMM-BIO-3: Conduct Environmental Awareness Training for Construction Employees

All construction personnel will attend an environmental education program delivered by an agency-approved biologist before working on the Project site. The program will include an explanation of how to best avoid the incidental take of listed species known from the region with potential to occur in the BSA. This field meeting will include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life-stage requirements within the context of Project maps that show areas where AMMs will be implemented. The program will include an explanation of applicable federal and state laws protecting listed species, and the importance of compliance with various resource agency conditions.

AMM-BIO-4. Dust Control

Dust control measures will be implemented. These measures will consist of regular truck watering of construction access areas and disturbed soil areas, including using organic soil stabilizers, if required, to minimize airborne dust and soil particles generated from graded areas. Regular truck watering will be a requirement of the construction contract. In addition, for disturbed soil areas, the use of an organic tackifier will be included in the construction contract to control dust emissions blowing off the right-of-way or out of the construction area during construction. Watering guidelines will be established to avoid excessive runoff that may flow into contiguous areas. Material stockpiles will be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion. Dust control will be addressed during the environmental education session as well.

AMM-BIO-5. Trash Removal

All food-related trash items, such as wrappers, cans, bottles, and food scraps, will be disposed of in closed containers and removed at least once daily from the Project footprint.

AMM-BIO-6. Fueling Practices

Dedicated fueling and refueling practices will be designated as part of the approved SWPPP. Dedicated fueling areas will be protected from stormwater run-on and will be located at least 50 feet from downslope drainage facilities and water courses. Fueling must be performed on level-grade areas. Onsite fueling will only be used when and where it is impractical to send vehicles and equipment offsite for fueling. When fueling must occur onsite, the contractor will designate an area to be used, subject to the approval of the resident engineer. Drip pans or absorbent pads will be used during onsite vehicle and equipment fueling.

AMM-BIO-7. Storage of Waste

All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of habitat and a minimum of 150 feet from any aquatic habitat, culvert, or drainage feature.

AMM-BIO-8. Disposal of Temporary Construction Materials

All surplus material resulting from construction activities must be properly disposed of offsite. Material will either be reused and fully contained within the Project limits or properly disposed of offsite.

AMM-BIO-9. Noise Abatement

To reduce the potential for noise effects resulting from Project construction activities, the following measures will be implemented during all phases of construction activities:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. All equipment must be equipped with sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- Prohibit unnecessary idling (that is, greater than 5 minutes in duration) of internal combustion engines within 50 feet of residences.
- Locate all stationary noise-generating construction equipment, such as air compressors, portable power generators, or self-powered lighting systems, as far as practical from noise-sensitive receptors.
- Use "quiet" air compressors and other "quiet" equipment where such technology exists.

AMM-BIO-10. Noise Blanket

During construction, the contractor will install a noise blanket or other comparable noise reduction measures along the construction work limits nearest to the marsh area.

AMM-BIO-11. Construction Lighting

Construction lighting will be directed down toward the immediate vicinity of the active work area and will avoid light trespassing into the adjacent natural areas through directional lighting, shielding, or other measures as needed.

3.3.4 Environmental Impacts

3.3.4.1 Methodology

The impact analysis evaluated the potential effects on special-status species and other biological resources that could result from Project implementation (including construction and operations). Potential effects on biological resources at the Project were based on the likelihood that construction or operation of the proposed Project would directly or indirectly affect these resources. The following assumptions were made:

- Potential construction-related effects include noise and ground disturbance caused by grading, pile installation, and other construction activities.
- Other than small areas of landscaping, no vegetation would be removed. The developed nature of the proposed Project surroundings currently limits wildlife habitation and wildlife movement through the project footprint and surrounding areas.

Additional assumptions regarding the wake analysis and ferry operations were also made. As described in Section 3.3.2.3, Existing Conditions and Biological Resources of this DEIR, the existing ferry wakes do not have an impact on marsh habitat, erode mudflats, or increase background levels of turbidity in mudflat waters (Jacobs 2022, 2025). It is anticipated that changes in fleet composition and an increase in trips would not substantially modify these conditions to the extent that significant impacts would occur. In fact, modeling of the Liwa-class fleet demonstrate they generate lower wake energy and wave height than the current fleet because of advanced hull design (Jacobs 2026) and would result in less turbidity even when incrementally increasing the daily departures from 21 (current) up to 38 in 2050 and beyond. It should be noted that future operations would include only Liwa-class vessels, and the following impact analysis assumes the future operations would be an improvement over the existing fleet.

3.3.4.2 Thresholds of Significance

The following CEQA Guidelines Appendix G thresholds identify significance criteria to be considered for determining whether a project could have significant impacts related to biological resources.

Would the proposed Project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

3.3.4.3 Impacts

Alternative 1 and Alternative 2 require the same construction activities within the same footprint. Project biological resource impacts are substantively the same for both Alternative 1 and Alternative 2. Within this section, impacts for Alternative 1 and Alternative 2 are discussed together as the Build Alternatives.

Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Section 3.3.2.3 identifies special-status species with moderate or greater potential to occur in the BSA and where applicable, along the ferry route. The impacts of the proposed Project on these species are evaluated as follows.

Construction

Build Alternatives

Special-Status Plants

No federally or state-listed plant species or any other species of special concern were identified within the BSA during the 2026 habitat assessment and plant inventory. One rare (1B.2) plant, Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *Palustris*), was observed within Triangle Marsh during the 2021 survey of the BSA. The preferred habitat for Point Reyes bird's beak is coastal salt marshes. Because construction activities would occur on existing hardscape, there will be no habitat modifications to coastal salt marsh (or other vegetative communities). Therefore, there will be **no impact** on special-status plant species.

California Ridgway's and Black Rail

The California Ridgway's rail and California black rail are typically found in the intertidal zone and sloughs of brackish marshes dominated by pickleweed, Pacific cordgrass (*Spartina foliosa*), gumplant (*Grindelia* sp.), saltgrass, jaumea (*Jaumea carnosa*), and adjacent upland refugia.

There are known populations and suitable nesting salt marsh habitat in the Corte Madera Marsh approximately 1,000 feet south of the Project across Corte Madera Creek (Corte Madera Marsh lies outside of the BSA, across from Corte Madera Creek, whose mouth and channel are on the west and south borders the BSA, as shown on Figure 3.3-1). Given the lack of suitable dense vegetation, it is unlikely that California Ridgway's rail or California black rail would be nesting within the BSA. There may be individuals foraging within Triangle Marsh, having dispersed from the nearby Corte Madera Marsh across Corte Madera Creek. Additional background information on their habitat associations is described in Section 4.4.1, California Ridgway's Rail and California Black Rail, in the NES, which is Appendix C of this DEIR.

USFWS considers California Ridgway's rail and California black rail to be sensitive to disturbance and seeks to minimize human intrusion into occupied marshes, particularly during the breeding season. There will be no direct impacts on rail habitat; however, their normal behavior may be disrupted if exposed to noise levels that exceed 80 to 85 decibels (dB) (USFWS 2013), and several pieces of construction equipment have a measured maximum noise level greater than 80 dB. Therefore, mitigation measure MM-BIO-1 will

be implemented to avoid disturbing any potential nesting rails. California Ridgway's rail and California black rail nests may not be detected during standard pre-construction bird surveys; therefore, the surveys prescribed by MM-BIO-1 will follow the latest agency-recommended protocols for detecting these specific species, and the biologist will be experienced with surveying for rails. Because of the sensitive nature of these species, which are listed per the ESA, noisy construction within 700 feet of an active nest could result in nest abandonment, or "take" as it is defined by the federal and state ESA. Therefore, although the vegetation in Triangle Marsh is not as high quality for rails as that in Corte Madera Marsh, MM-BIO-CNST-1 is prescribed in an abundance of caution to avoid take of listed species.

- **MM-BIO-CNST-1:** Conduct a California Ridgway's rail and California black rail pre-construction survey within 700 feet of pile installation activities, annually. If either of these species is detected within 700 feet of pile installation activities, the project will coordinate with regulatory agencies.

With the implementation of MM-BIO-CNST-1, impacts on California Ridgway's rail or California black rail would be *less than significant with mitigation*.

Salt Marsh Harvest Mouse

Detailed information on the salt marsh harvest mouse, including its habitat and records of occurrence, is available in Section 4.4.2, Salt Marsh Harvest Mouse within the NES, which is Appendix C of this DEIR. In summary, the available habitat for the salt marsh harvest mouse in the BSA is low quality, but presence cannot be ruled out.

Their habitat would not be directly impacted by the proposed Project. The potential impacts would be from construction noise producing elevated sound levels in adjacent salt marsh habitat. The hearing range of mice is reported to be between 1,000 to 91,000 hertz at 60 dB (Heffner and Heffner 2007; Rasmussen et al. 2009). The majority of sound energy from impact pile driving is low energy at frequencies below 500 hertz (McKenzie Maxon 2000; DOSITS 2015). Thus, much of the sound generated from pile driving or drilling would likely be inaudible to mice. As a result, noise generated by Project construction, including pile driving, would have *less than significant impacts* on the salt marsh harvest mouse. No mitigation required. The noise abatement measures (AMM-BIO-7 and AMM-BIO-8) will further reduce potential effects on the mouse.

Special-Status Marine Mammals

The primary potential impact on marine mammals during construction would be from pile installation; a detailed description on how noise could impact marine mammals is provided in Section 4.5.8, Construction, within the NES provided in Appendix C. However, no meaningful transmission of underwater sound to adjacent waters is expected to occur during construction.

California sea lions and harbor seals were determined to have a high potential to occur along the ferry route (that is, central San Francisco Bay at a distance from the ferry terminals) as foragers and in transit and within the BSA. Because there is no meaningful transmission of underwater sound to adjacent waters and there are no haul-out areas where these species would be exposed to airborne noise, construction for the proposed Project would have *no impact* on California sea lions or harbor seals.

Common bottlenose dolphins, gray and humpback whales, and harbor porpoises were determined to have a moderate potential to occur as foragers or in transit in central portions of the ferry route (that is, central San Francisco Bay at a distance from the ferry terminals); however, habitat for these species in the BSA and near the Larkspur and San Francisco Ferry Terminals is marginal or absent, and they are not expected to occur. Therefore, construction for the proposed Project would have *no impact* on dolphins, whales, or porpoises.

Special-Status Fish

As described previously, several special-status fishes have moderate or greater potential to occur in the BSA. Fish may be subject to direct and indirect impacts from construction (for example, noise from pile driving can deter them from entering previously occupied habitats). For the proposed Project, H-piles or auger cast piles are expected to be impact-driven or drilled on land within the existing ferry terminal parking area, approximately 100 feet or more from the nearest waters. Based on the pile types and the distance from the Bay, pile driving or drilling associated with this Project is not expected to result in meaningful transmission of underwater sound to adjacent waters. Therefore, there would be ***no impact*** on special-status fish from construction.

Operations

Build Alternatives

Operational impacts from the proposed Project on special-status marine mammals are described herein. Operational impacts on other special-status wildlife are not assessed because they are already accustomed to the existing ferry operations, and in certain cases (depending on ferry arrival/departure speed), the proposed Project would be an improvement over the existing fleet. Operational impacts on special-status plants are also not addressed because no special-status plant habitat overlaps with the ferry route.

Currently, the Larkspur ferry has up to 42 ferry revenue trips per weekday, which aligns with the approved service levels. There are also up to four special event crossings to serve Oracle Park or Chase Center events, and up to six deadhead trips that include runs returning to Larkspur in the morning and heading to San Francisco in the afternoon to support peak revenue services. The operating ferries have drafts of up to 6 feet, 6 inches and transit at a maximum service speed of 36 knots (District 2026a). Ferry service would increase incrementally based on demand from 42 revenue trips up to a maximum of 76 revenue trips per day in 2050 and beyond. The vessels in the replacement fleet (Liwa-class vessels) have a draft of 4 feet 3 inches (District 2024) and transit at the same service speed as the existing ferries.

The incremental increase in ferry operations expected through 2050 could impact marine mammals directly because of increased collision risk (vessel-strike) or indirectly through behavioral disturbance. A detailed description of these impacts and how they compare to existing conditions is available in Section 4.5.9, Operational Impacts within the NES, which is Appendix C of this DEIR. A summary is provided as follows:

Collision Risk: Project impacts from collision exist along the ferry route and depend on multiple factors. Of the species potentially present, harbor porpoises, common bottlenose dolphins, and pinnipeds are generally at lower risk because they are more agile and capable of maneuvering away from the vessel and spend less time at the surface. In contrast, cetaceans (gray and humpback whales) are bigger, slower, and less agile and spend longer periods of time at or near the surface. They are also more likely to be observed foraging in central San Francisco Bay, which makes them less likely to detect and avoid an approaching vessel.

The Larkspur–San Francisco ferry route is a high-use, mixed traffic environment and ferry route goes through one of the most heavily trafficked portions of central San Francisco Bay. Marine mammals are already exposed to continuous vessel traffic, including high-speed ferries. The increase in traffic from the increased ferry service is minimal compared to existing conditions, and the operations would not substantially increase collision risk to a level that threatens population statuses. Additionally, the protocols the ferries follow to avoid and minimize impacts on marine mammals, detailed in the *Golden*

Gate Ferry's Whale Aware Procedures subsection under Section 3.3.1.3, would continue to be followed. These procedures sufficiently reduce collision risk such that the resulting collision-risk impacts on marine mammals would be ***less than significant***. No mitigation required.

Behavioral Impacts: Increased ferry operations also lead to indirect, behavioral disturbances associated with increased wake activity: Ferry wakes may resuspend sediment in shallow areas and impact species ability to locate prey. Because Liwa-class vessels would generate wake energy and wave heights less than those in the existing fleet because of advanced hull design and ferry operators would continue to follow established marine mammal-related protocols, potential behavioral impacts on foraging marine mammals would be ***less than significant***. No mitigation required.

Additionally, vessel noise can lead to temporary, near-immediate avoidance of an area. Given the baseline soundscape in San Francisco Bay and *Golden Gate Ferry's Whale Aware Procedures* under Section 3.3.1.3 that would be followed, behavioral impacts from vessel noise on marine mammals would be ***less than significant***. No mitigation required.

Mitigation Measures

MM-BIO-CNST-1: Conduct a California Ridgway's rail and California black rail pre-construction survey within 700 feet of pile installation activities, annually.

If either of these species is detected within 700 feet of pile installation activities, the Project will coordinate with regulatory agencies.

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Construction and Operation

Build Alternatives

Designated critical habitat for a selection of federally listed fish species overlaps with the BSA and along the ferry route. There is also EFH and estuaries, habitat areas of particular concern under the Magnuson-Stevens Fishery Conservation and Management Act, that overlap with the BSA and the ferry route. These habitats support important life history functions, such as migration, foraging, rearing, and breeding. The proposed Project does not include in-water construction or activities that would alter aquatic habitat; there is ***no impact*** on critical habitat, EFH, and estuarine habitats. Additionally, proposed Project operations are not expected to impact marsh habitat, erode mudflats, or increase background levels of turbidity in mudflat waters; proposed Project operations would be an improvement over existing conditions (based off preliminary models for the Liwa-class fleet). Therefore, indirect operational impacts on critical habitat, EFH, and estuarine habitats are ***less than significant***. No mitigation required.

Marshes are also sensitive natural community, and Triangle Marsh is immediately adjacent to the ferry terminal in the southern portion of the BSA. Given that ferry operations for the proposed Project are expected to be an improvement over existing operations, the impacts on marshes would be ***less than significant***. No mitigation required.

Mitigation Measures

No mitigation required.

Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means

Construction

Build Alternatives

The proposed Project would not directly remove or fill any state or federally protected wetland, including the estuarine waters and marsh habitat identified during the desktop study, or other water. Anticipated work within the BCD's shoreline band would be limited primarily to restriping the remaining surface lot to accommodate the new circulation and remaining surface parking within the lot, landscape improvements and drainage tie-ins, as applicable. Therefore, the Build Alternatives will have **no impact** on state or federally protected wetlands.

Mitigation Measures

No mitigation required.

Operation

Build Alternatives

As previously described, existing ferry wakes do not have an impact on marsh habitat (including Corte Madera Marsh), erode mudflats, or increase background levels of turbidity in mudflat waters (Appendix D within the NES and Section 3.9, Hydrology and Water Quality). Future operational conditions would not substantially modify these conditions. The Build Alternatives will have **no impact** on state or federally protected wetlands.

Mitigation Measures

No mitigation required.

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Construction and Operations

Build Alternatives

The proposed Project would have no impact on the movement of migratory fish within the BSA or along the ferry route for reasons described previously in the analysis for the first significance threshold within this section.

Native wildlife nursery sites in the BSA consist of landscape trees, shrubs, and ground vegetation that may provide nesting habitat for migratory birds. Construction would result in the removal or trimming of landscape trees. Pre-construction surveys during the nesting season of migratory birds would avoid the injury or mortality of nesting birds during vegetation removal. Because the proposed Project is in an area with high human disturbance, construction noise and visual disturbance during the nesting season are not anticipated to affect birds nesting in vegetation near the Project. However, protective buffers would be implemented around active bird nests if the biologist determines it is needed to avoid disturbance.

Removal or destruction of nests would not occur, and construction disturbance during the breeding season that could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment would also be avoided and impacts would be less than significant. No mitigation required. Implementation of AMM-BIO-1 and AMM-BIO-2 will avoid impacts on nesting migratory birds, and impacts would be ***less than significant***. No mitigation required.

Gray and humpback whales were determined to have moderate potential to occur along the ferry route in transit as they migrate from their breeding to wintering grounds. Additional information related to these species migratory patterns are available in Section 4.5.3, Gray Whale, and Section 4.5.6, Humpback Whale, within the NES, which is Appendix C of this DEIR. For reasons described in question under the first threshold of significance, the proposed Project would have ***less than significant*** impacts on the movement of gray and humpback whales. No mitigation required.

Mitigation Measures

No mitigation required.

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

Construction and Operation

Build Alternatives

Construction and operation of the proposed Project would not conflict with any local policies or ordinances protecting biological resources, and there would be ***no impact***.

Mitigation Measures

No mitigation required.

Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan

Construction and Operation

Build Alternatives

Marin County does not have a habitat conservation plan or natural community conservation plan, and there are no regionwide habitat conservation plans or natural community conservation plans that encompass the Project footprint. Therefore, there would be ***no impact*** from the construction or operation of the proposed Project.

Mitigation Measures

No mitigation required.