

5.4 Biological Resources

BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. 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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

5.4.1 Setting

Section 5.4.1 describes the existing biological resources, including plants and wildlife, habitats, and special-status species, in the vicinity of the Proposed Project. Section 5.4.2 addresses potential impacts to biological resources and, where necessary, specifies mitigation measures to reduce potential impacts to less-than-significant levels.

The Proposed Project would be located on the eastern edge of San Francisco and in the San Francisco Bay. The route of the proposed transmission line would be partially submarine and would pass through the waterfront, shoreline, and open-water areas of Central San Francisco Bay from Piers 28 and 30/32, south of the San Francisco–Oakland Bay Bridge, to 23rd Street. The Central Bay is typically colder and more saline than other regions of the San Francisco Bay. For the purposes of this analysis, the “Proposed Project area, the “project area,” or the “project route” refers to the footprint that would be directly affected by the project and the immediate vicinity of the project footprint.

This analysis of biological resources for the Proposed Project is based on:

- Review of the Proponent’s Environmental Assessment (PG&E, 2012), including results from field reconnaissance surveys conducted by Garcia and Associates (GANDA) on May 21, 2012, and by CH2M Hill biologists on June 22, 2012;
- Review of California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game) California Natural Diversity Database (CNDDDB) for 5 miles surrounding the project route (CNDDDB, 2011);

- Review of California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants for 5 miles surrounding the project route (CNPS, 2011);
- Review of U.S. Fish and Wildlife Service (USFWS) critical habitat portal (USFWS, 2011); and
- Review of environmental impact reports (EIRs) and permits for similar projects located near the project area: Trans Bay Cable EIR (City of Pittsburg, 2006a and 2006b) and the America’s Cup EIR (SF Planning Department, 2011).

Habitat

Terrestrial Habitat. Onshore portions of the project footprint would be in city streets or disturbed areas of the waterfront. Biological resources in these areas are limited to street trees and some disturbed ruderal habitat. The proposed northern cable landing location would be between Piers 28 and 30/32; the surrounding area is entirely paved. At this northern location, HDD would pass under the seawall, terminating at the cul-de-sac on Spear Street. There are over 110 trees planted along the sidewalks that line the northern project route on The Embarcadero, Spear Street, and Folsom Street near the Embarcadero Substation. Approximately one third of these are large, mature trees that may provide nesting habitat for many species of urban birds and possibly also roosting habitat for bats. The trees along the northern portion of the project route include palm trees (*Arecaceae sp.*), sycamores (*Platanus sp.*), bottlebrush (*Callistemon sp.*), sweetgum (*Liquidambar styraciflua* ‘Rotundiloba’) and a variety of other ornamental street tree species. Table 5.4-1 shows a breakdown of trees along this portion of the project route.

Table 5.4-1. Street Trees along Northern Project Route

Location	Total Trees	Very Large/ Mature Trees
The Embarcadero	3	3
Spear St (Embarcadero to Harrison St)	25	13
Spear St (Harrison St to Folsom St)	50	11
Folsom St (Spear St to Main St)	16	7
Folsom St (Main St to Beale St)	9	2
Folsom St (Beale St to Zeno Pl)	6	6
Folsom St (Fremont St to First St)	3	3
Totals	112	45

Depending on the precise location of the underground line (determined during final design), some of these trees may need to be removed or trimmed. One entire row of 18 sweetgum trees (2 to 3 inches in diameter and 10 to 15 feet tall) on Spear Street between Folsom Street and Harrison Street could potentially be trimmed or removed during construction (PG&E, 2013). These trees are part of a linear park that was created in 2009 (Buffalo Rising, 2009); these trees are not as large and mature as other trees in the project area and are not likely to support nesting birds.

At the proposed southern cable landing location, horizontal directional drilling would pass under the shoreline, and pipe for the HDPE conduit would be dragged from the street to float on the water across the shoreline, which is covered in riprap. Vegetation in this area is largely limited to ornamental shrubs and trees around Potrero Switchyard. There is no tree trimming or removal planned in this portion of the project area. There are no wetlands along the project route. The nearest known wetland is near Pier 96, about 0.5 miles south of Potrero Switchyard (San Francisco Planning Department, 2011). The two proposed cable landing locations and the surrounding areas are highly urbanized and largely paved.

Marine Habitat. The submarine portions of the project route would pass through natural and artificial intertidal, subtidal, and open-water habitats. Marine habitats and associated marine communities in the project area include natural (rock) and artificial (concrete, rock riprap, wood, and concrete pilings) hard intertidal areas near shore; soft substrate subtidal habitat; and open water (NMFS, 2007a; CCC, 2010). The bay depth in the project area is about 10 feet along the east-west portion near the former Potrero

Power Plant. The depth ranges from approximately 30 feet deep along the southern portion to ~~70~~⁸⁰ feet deep along the northern portion of the proposed submarine route (see also Section 5.9, Hydrology and Water Quality). Ambient underwater noise levels in the project area are heavily influenced by the anthropogenic activity in the bay, such as marine vessels or construction that occurs in the water (see Noise, Section 5.12 for an explanation of the marine acoustic setting).

- **Intertidal Habitat.** Intertidal habitat is habitat between the low and high tide lines. The project would include drilling through sediment beneath the bay shoreline and adjacent intertidal habitat, 40 to 50 feet below the water surface. Intertidal habitat located along the project route consists of riprap and soft-bottom mud at the southern cable landing and pavement, ports, wharfs, and soft-bottom mud at the northern cable landing. There are no natural rocky areas, sandy beaches, or wetlands on the shore along the proposed route.
- **Subtidal Habitat.** Subtidal habitat consists of the submerged area below the low tide mark. Within the San Francisco Bay, these habitats include mud, shell, sand, rocks, artificial structures, shellfish beds, eelgrass beds, algal beds, and the water column above the bay bottom (CCC, 2010). Subtidal habitat along the proposed route consists of soft-bottom mud and sandy habitats and the water column above them. There are no eelgrass (*Zostera marina*) beds, shell, or rock are along the route, nor are there any planned eelgrass or shell bed restoration projects in the area (Subtidal Habitat Goals Project [SHGP], CCC, 2012). The project route passes through subtidal open-water and bottom-sediment habitat (PG&E, 2012). Figure 5.4-1 shows subtidal habitat in the Proposed Project area.

Special-Status Plants and Animals

For the purposes of this analysis, special-status species are species that are:

- Listed as Endangered, Threatened, Candidate or Proposed by U.S. Fish and Wildlife Service (USFWS);
- Protected under the federal Marine Mammal Protection Act (MMPA);
- Regulated Fishery under Sections 8550-8559 of California Fish and Game Code;
- Listed as Endangered, Threatened, Rare, or Candidate by California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game);
- Fully Protected under California Fish and Game Code;
- California Species of Special Concern;
- California Rare Plant Rank (CRPR)¹ 1A, 1B, 2, 3, or 4 by CDFW/California Native Plant Society;
- State regulated fishery (under California Code of Regulations Title 14. Natural Resources); or
- Otherwise meets the definition of rare, threatened, or endangered as described in the CEQA Guidelines, Section 15380.

CNDDDB records identify 49 special-status terrestrial species within 5 miles of the Proposed Project footprint. These species are shown in Appendix B. Based on reconnaissance surveys and literature review, the project area does not have suitable habitat for any of these species (PG&E, 2012). The full species list from the Proponent's Environmental Assessment is shown in Appendix B.

There are at least 16 federally managed fish species (Magnuson-Stevens Act, see Applicable Regulations) that may be present in the project area (SF Planning Department, 2011). These managed fish species are shown in Table 5.4-2. Other commercial and recreational marine species, such as Dungeness crab (*Cancer magister*) and surfperches (*Embiotocidae*), are also present in the project area.

¹ CDFW has changed references to CNPS List to California Rare Plant Rank (CRPR) to clarify that CDFW plays an active and authoritative role in the ranking process. See September 2010 CNDDDB newsletter: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB_News_Sep_2010.pdf.

Table 5.4-2. Managed Fish Species (Magnuson-Stevens Act) in the Project Area

<ul style="list-style-type: none"> ▪ Northern anchovy (<i>Engraulis mordax</i>)² ▪ Pacific sardine (<i>Sardinops sagax</i>) ▪ English sole (<i>Parophrys vetulus</i>) ▪ Sand sole (<i>Psettichthys melanostictus</i>) ▪ Curlfin sole (<i>Pleuronichthys decurrens</i>) ▪ Pacific sanddab (<i>Citharichthys sordidus</i>) ▪ Starry flounder (<i>Platichthys stellatus</i>) ▪ Lingcod (<i>Ophiodon elongatus</i>) 	<ul style="list-style-type: none"> ▪ Brown rockfish (<i>Sebastes auriculatus</i>) ▪ Pacific whiting (<i>Merluccius productus</i>) ▪ Kelp greenling (<i>Hexagrammos decagrammus</i>) ▪ Leopard shark (<i>Triakis semifasciata</i>) ▪ Spiny dogfish shark (<i>Squalus acanthias</i>) ▪ Soupfin shark (<i>Galeorhinus galeus</i>) ▪ Bocaccio rockfish (<i>Sebastes paucispinis</i>) ▪ Cabezon (<i>Scorpaenichthys marmoratus</i>)
--	--

There are no special-status marine invertebrates in the San Francisco Bay; however, there are 11 special-status marine species (fish and mammals) with high, ~~or~~ moderate, or low potential to be present in the project area:

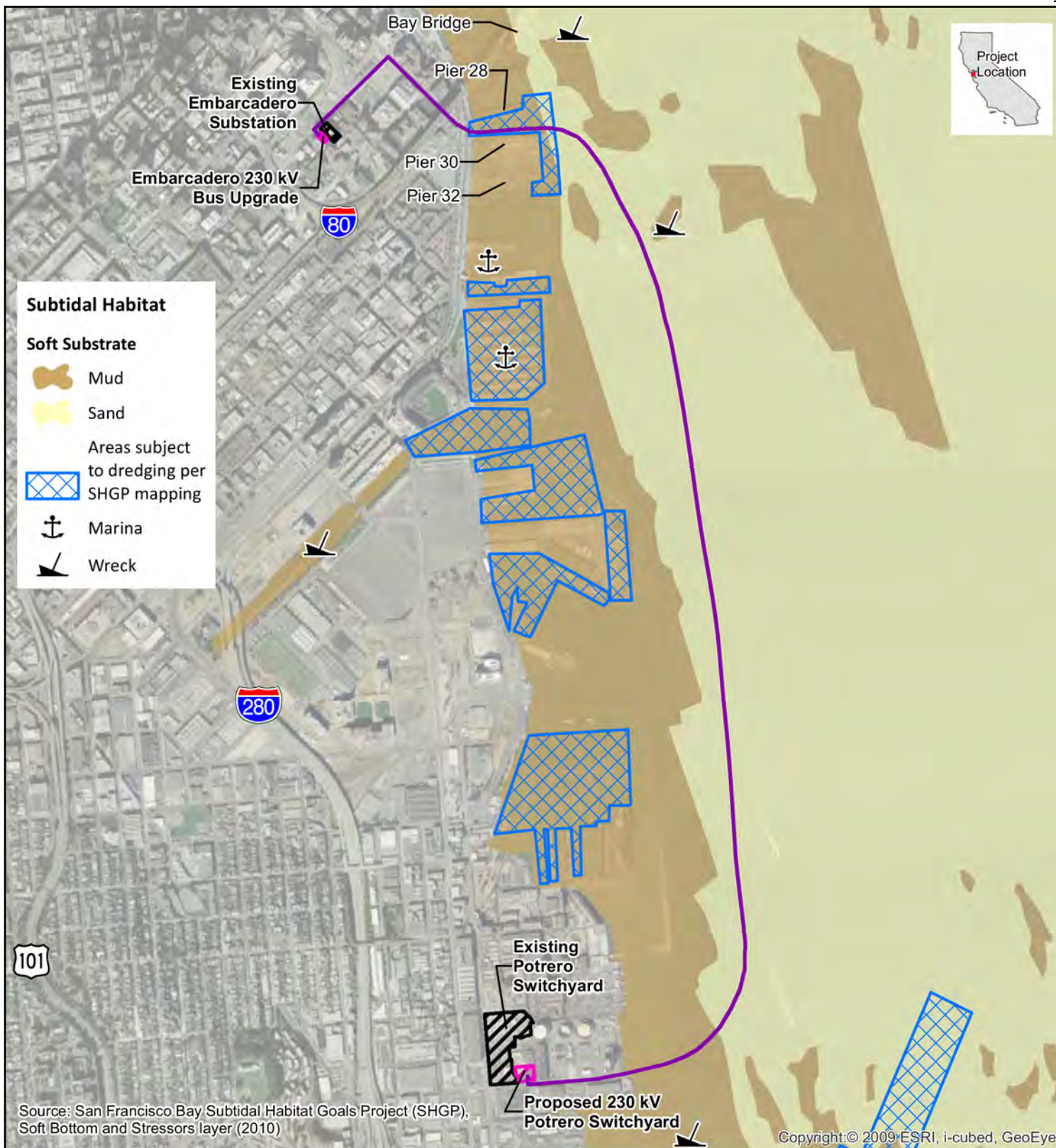
- Green sturgeon (*Acipenser medirostris*, Federally Threatened/State Species of Special Concern)
- Central California Coast coho salmon (*Oncorhynchus kisutch*, Federally Endangered/State Endangered)
- Chinook salmon (*Oncorhynchus tshawytscha*, Winter-Run Federally Endangered/Spring-Run Federally Threatened)
- California central coast steelhead (*Oncorhynchus mykiss irideus*, Federally Threatened)
- Longfin smelt (*Spirinchus thaleichthys*, State Threatened/Federal Candidate for Listing)
- Pacific herring (*Clupea pallasii*, State Regulated Fishery)
- Great white shark (*Carcharodon carcharias*, Candidate for State Listing)
- Pacific harbor seal (*Phoca vitulina richardsi*, Federal Marine Mammal Protection Act [MMPA])
- California sea lion (*Zalophus californianus*, MMPA)
- Harbor porpoise (*Phocoena phocoena*, MMPA)
- Gray whale (*Eschrichtius robustus*, MMPA)

The San Francisco Bay is federally designated as critical habitat for the southern Distinct Population Segment (DPS) of North American green sturgeon and for the DPS of Central California Coast steelhead.

North American Green Sturgeon (Federally Threatened, State Species of Special Concern). Green sturgeon is an anadromous³ fish found in bays and estuaries along the western coast of the United States (Moyle et al., 1995). The southern DPS consists of the coastal and Central Valley populations of the Eel River, with the only known spawning population occurring in the Sacramento River. The precise abundance of green sturgeon in the San Francisco Bay and its tributaries is unknown (NMFS, 2005). Adult green sturgeon migrate from the ocean into the San Francisco Bay in late February heading for the Sacramento River. Adults spawn in cool sections of the Sacramento River from March through July, with peak spawning activity in April and June (Heublein et al., 2009). Green sturgeon use both freshwater and saltwater habitat. They spawn in deep pools or holes in large, turbulent, freshwater rivers (Moyle et al., 1995). Juvenile and subadult green sturgeon use the San Francisco Bay as rearing and migration habitat, and the entire marine portion of the project route is within designated critical habitat for foraging and rearing. However, there is no known spawning habitat for North American green sturgeon within San Francisco Bay, and the project is outside its the major migratory corridor. Green sturgeon's known benthic prey resources are much more plentiful on the broad subtidal areas farther south and also upstream in San Pablo Bay and up into the Delta (Kolhorst, 2001).



² Northern anchovy (*Engraulis mordax*) is the dominant fish species in the Central Bay (accounting for up to 94 percent of fish the water column). Pacific herring (*Clupea pallasii*) and jacksmelt (*Atherinopsis californiensis*) are the second and third most common fish. (SF Planning Department, 2011)

³ An anadromous fish, born in fresh water, spends most of its life in the sea and returns to fresh water to spawn (NOAA, 2011). <http://www.nefsc.noaa.gov/faq/fishfaq1a.html>



Source: San Francisco Bay Subtidal Habitat Goals Project (SHGP),
Soft Bottom and Stressors layer (2010)

Copyright: © 2009 ESRI, i-cubed, GeoEye

 Proposed Transmission Line
 Substation/Switchyard



0 1,000 2,000
Feet

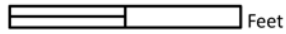


Figure 5.4-1
Subtidal Habitat



Source: PG&E, 2012.

This page intentionally blank.

Central California Coast Coho Salmon (Federally Endangered, State Endangered). The National Marine Fisheries Service (NMFS) has listed several Coho salmon populations as threatened or endangered Evolutionarily Significant Units (ESUs), based on the river systems where they spawn. The Central California ESU includes all naturally spawned populations from Punta Gorda in northern California south to the San Lorenzo River in central California, as well as populations spawning in tributaries to San Francisco Bay, excluding the Sacramento–San Joaquin River system. Juvenile Coho may be present in the San Francisco Bay in the fall, winter, and spring (San Francisco Planning Department, 2011). There is suitable foraging habitat for Coho along the proposed submarine route; however, no known or potential spawning streams exist in the vicinity of the Proposed Project (Leidy et al., 2005).

Chinook Salmon (Winter-Run Federally Endangered; Spring-Run Federally Threatened). Adult Chinook salmon migrate from the ocean through the San Francisco Bay to spawn upstream in the Sacramento and San Joaquin River basins. Spawning occurs as four distinct runs: winter-, spring-, fall-, and late fall-run ESUs. The winter-run ESU is listed as endangered, and the spring-run is listed as threatened. There are no known or potential spawning streams in the vicinity of the Proposed Project (CNDDDB, 2012). Critical habitat for the spring-run Chinook is located north of the Bay Bridge. Adults are found in San Francisco Bay during the migratory period in the spring, and there may be juveniles in the bay in the fall, winter, and spring. There may be low numbers of spring-run Chinook in the Central Bay and in the vicinity of the Proposed Project (San Francisco Planning Department, 2011). For Central Valley fall-run and late-fall run Chinook salmon, the primary migration corridor to the ocean is through the northern reaches of Central San Francisco Bay (San Francisco Planning Department, 2011). The project area is outside the migratory corridor for these runs.

Central California Coast Steelhead Trout (Federally Threatened). The Central California Coast steelhead trout DPS distribution spans the California coast from the Russian River south to Aptos Creek in Santa Cruz County. Generally, coastal California steelhead live in fresh water for two years, then spend one or two years in the ocean before returning to their natal stream to spawn. Peak spawning in California occurs from December to April (McEwan, 2001). Steelhead fry⁴ generally rear in edgewater habitats. Currently, stream-maturing steelhead (summer steelhead) are found only in north coast drainages (that is, the Eel, Klamath, and Trinity River systems) and ocean-maturing steelhead (winter steelhead) are present both in north coast drainages and in the Central Valley and central and south coast drainages (McEwan, 2001). The entire San Francisco Bay, including the proposed submarine cable route, is designated as critical habitat for Central California Coast steelhead ~~along the~~. Central California Coast steelhead trout are rare in most tributaries to the San Francisco Bay (San Francisco Planning Department, 2011). Suitable foraging habitat exists along the proposed submarine route, but there are no known or potential spawning streams in the vicinity of the Proposed Project.

Longfin Smelt (State Threatened and Candidate for Federal Listing). Longfin smelt are found in California's bay, estuary, and nearshore coastal environments from San Francisco Bay north to Lake Earl, near the Oregon border. USFWS considers the San Francisco Bay-Delta population distinct from other populations along the west coast (USFWS, 2012). Longfin smelt are anadromous and tolerate a wide range of salinities. They typically have a two-year lifecycle. Longfin smelt spawn in the middle Delta in winter and disperse throughout the San Francisco Bay estuary as they mature. In the early spring and early summer (April-June), they concentrate in San Pablo Bay and move in to San Francisco Bay later in the summer (Moyle, 2002). Longfin smelt are present in the Central Bay, including the waters adjacent to the Port of San Francisco (San Francisco Planning Department, 2011). There is no spawning habitat for

⁴ Fry is the stage in the salmonid life history when the juvenile has absorbed its yolk sac and leaves the nest to swim up into the water column.

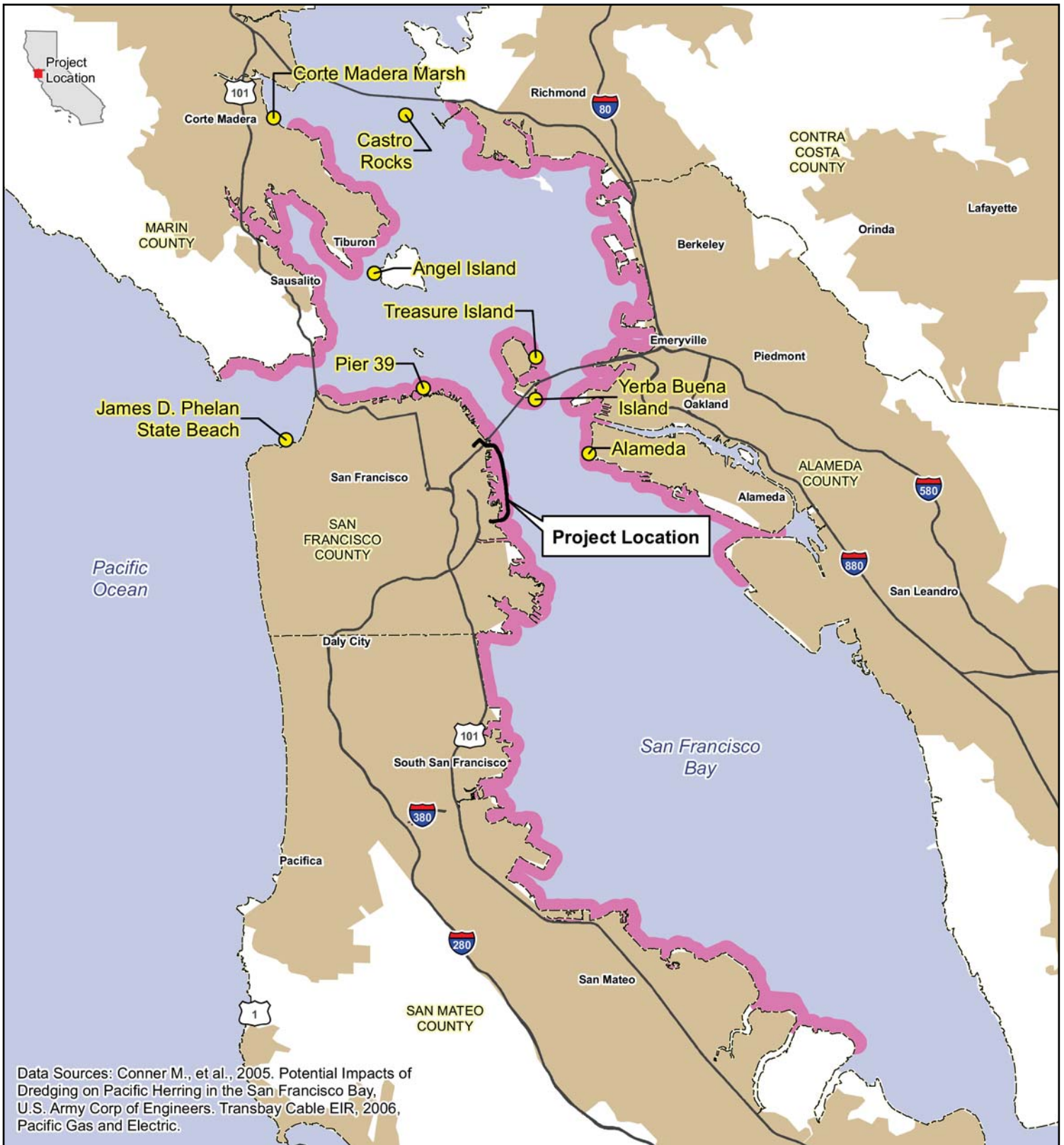
longfin smelt near the project area (USFWS, 2012). However, there is suitable foraging habitat along the proposed submarine route (USFWS, 2012). Longfin smelt are typically found in the middle to lower water column except at night when they move to surface waters. Longfin smelt abundance is tightly correlated with the amount of freshwater outflow from the delta, and in years of low outflow the abundance of longfin smelt is expected to decrease (Stevens and Miller, 1983). In years with higher levels of outflow, longfin smelt generally have a higher distribution throughout the bay and higher overall abundance (Rosenfield and Baxter, 2007). Longfin smelt feed on plankton. Their population in San Francisco Bay is thought to have declined due to water management practices and excess nutrients (reduced fresh water flow and discharge from wastewater treatment plants) and due to introduced non-native species (especially the overbite clam) that also eat plankton (USFWS, 2013).

Pacific Herring. The San Francisco Bay Pacific herring is regulated as a commercial state fishery under Sections 8550-8559 of the California Fish and Game Code (CFG) (Bartling, 2006). It is also a key part of the San Francisco Bay marine ecosystem; it provides an important food source for marine mammals, sea birds, and fish. Pacific herring spawning areas have relatively low salinity, calm and protected waters, and marine vegetation or intertidal areas. The largest spawning groups of Pacific herring in California occur in San Francisco and Tomales Bays. Beginning as early as October and continuing as late as April, schools of adult herring migrate inshore to bays and estuaries to spawn. Schools first appear in the deep-water channels of bays, where they can stay for up to 2 weeks before moving into shallow areas to spawn. The proposed submarine cable route is located in a calm and protected area with reduced salinity. The entire proposed submarine project area is considered spawning habitat for Pacific herring (Bartling, 2006; City of Pittsburg, 2006). Figure 5.4-2 shows the spawning areas for Pacific herring in the San Francisco Bay.






Great White Shark (Candidate for State Listing). The northeastern Pacific population of great white shark is a Candidate for state and federal listing. This species is also protected from commercial or recreational fishing by California Fish and Game Code Section 2806. Great white sharks are found in coastal surface waters around the world, including in the coastal Pacific Ocean. Small numbers of great white sharks have been observed in the San Francisco Bay near the Golden Gate Bridge (Jorgensen et al., 2009). There is some (low) potential for great white shark in the project area, but it is not a mating or pupping area for the species.

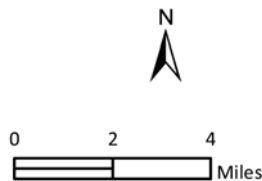
Pacific Harbor Seal (Federal Protection under Marine Mammal Act). The Pacific harbor seal has a wide range along the coast, islands, and bays of California. It is the only marine mammal species that is a permanent resident in the San Francisco Bay (NMFS, 2012a). Figure 5.4-2 shows known Pacific harbor seal haul-out locations near the Proposed Project; the closest haul-out site is located on Yerba Buena Island approximately 2 miles to the northeast. This haul-out site is most frequently used during the winter months (Bohorquez, 2002). Harbor seals typically forage on a variety of fish in the deepest waters of the bay and are expected to move through the project route.

California Sea Lion (Federal Protection under Marine Mammal Protection Act). California sea lions are not listed under the federal ESA, considered depleted under the MMPA, or considered a strategic stock under the MMPA (NMFS, 2007c). California sea lions do not use San Francisco Bay for breeding or pupping (NMFS, 2007c); however, they forage in and pass through the project area. Sea lions often use structures such as boat docks and navigational buoys as haul-out areas. Figure 5.4-2 shows known California sea lion haul-out locations near the Proposed Project area; the closest haul-out site is on Yerba Buena Island (2 miles to the northeast). Sea lion numbers typically fluctuate according to the abundance of herring in the area (San Francisco Planning Department, 2011).



Data Sources: Conner M., et al., 2005. Potential Impacts of Dredging on Pacific Herring in the San Francisco Bay, U.S. Army Corp of Engineers. Transbay Cable EIR, 2006, Pacific Gas and Electric.

-  Proposed Transmission Line
-  Urban Area
-  County Boundary
-  Herring Spawning Location
-  Seal Haulout Site



Source: PG&E, 2012.

Figure 5.4-2
Herring Spawning and Seal Haulout

This page intentionally blank.

Harbor Porpoise (Federal Protection under Marine Mammal Protection Act). Harbor porpoise are commonly observed in bays, estuaries, and harbors less than 650 feet deep (similar to the San Francisco Bay/Delta). The California stock of harbor porpoise is not considered strategic by NMFS (NMFS, 2012a). Harbor porpoises have recently been seen foraging near the Golden Gate Bridge and areas of the Central Bay (American Cetacean Society, 2012). The primary food sources for harbor porpoise are fish and squid. There have been no known sightings of harbor porpoise in the vicinity of the proposed submarine route; the closest known observation is off the south side of Yerba Buena Island 1.8 miles to the north-east (Caltrans, 2006). Harbor porpoises may occur occasionally in the project area.

Gray Whale (Federal Protection under Marine Mammal Protection Act, Eastern North Pacific DPS delisted in 1994 due to population status “recovered”). Gray whales occasionally stray into San Francisco Bay during their normal migrations north and south along the coast. Most reports have been in the Central Bay north of the Bay Bridge and in the North Bay. Grey whales have been reported as far south in the bay as Coyote Point (Oliver et al., 2012). They are not expected to occur regularly in the project area.

Western Red Bat. In addition to the marine species discussed above, western red bat (California Species of Special Concern) have been found in San Francisco. However, the nearest known occurrence to the project area is in Golden Gate Park, approximately 4.5 miles away and separated from the trees along the project route by an densely developed urban area (CNDDDB, 2012). Western red bat is usually found in riparian corridors greater than 160 feet wide dominated by sycamore, valley oak, and cottonwood trees (CDFW, 2004; CDFW, 1988-1990). Therefore, western red bat is unlikely to occur in the project area.

Applicable Regulations

Federal

Federal Endangered Species Act (16 U.S.C. § 1538). The federal Endangered Species Act (ESA) is implemented by U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS, also known as NOAA Fisheries). The federal ESA protects plants and wildlife that are listed as endangered or threatened by USFWS and NMFS. Section 9 of the ESA prohibits the take of listed fish and wildlife, where “take” is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging-up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 United States Code [U.S.C.] 1538).

The U.S. Army Corps of Engineers (USACE), as the federal action agency conducting the dredging permit review, would be subject to demonstrating project compliance with the federal ESA. Under Section 7 of the federal ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or their critical habitat. The USFWS or NMFS determines whether proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy opinion) or destroy or adversely modify critical habitat (adverse modification). Through consultation and the issuance of a Biological Opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the action will not jeopardize the continued existence of the species.

Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§ 1801-1884). The Magnuson-Stevens Act of 1976 (as amended in 1996 and reauthorized in 2006) applies to fisheries resources and fishing activities in federal waters, which extend to 200 miles offshore. The Act is intended to facilitate conservation and management of U.S. fisheries, development of domestic fisheries, and phasing out of

foreign fishing activities. Sections 305(b)(2) to (4) of the Magnuson-Stevens Act outline a process for NMFS to comment on activities proposed by federal action agencies that may adversely impact areas designated as Essential Fish Habitat (EFH). Specifically, federal action agencies are required to consult with NMFS on any action authorized, funded, or undertaken that may adversely impact EFH. This consultation process is typically integrated into environmental review procedures in accordance with the National Environmental Policy Act, ESA, or Fish and Wildlife Coordination Act to provide the greatest level of efficiency. NMFS must provide the federal action agency with EFH consultation recommendations for any action that would adversely affect EFH. These recommendations are advisory in nature. EFH is defined as those waters, aquatic areas, and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The EFH Guidelines (NMFS, 2004) include in their definition of EFH: (1) "Aquatic areas" and their associated physical, chemical, and biological properties are areas that are used by fish and may include aquatic areas historically used by fish, where appropriate; (2) "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; (3) "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and (4) "Spawning, breeding, feeding, or growth to maturity" covers a species' full lifecycle.

Marine Mammal Protection Act (16 U.S.C. § 1371). Under the Marine Mammal Protection Act (MMPA) of 1972 (as amended in 2007), it is unlawful to take or import marine mammals and marine mammal products. The MMPA defines "take" as to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." (16 U.S.C. §1362(13).) The MMPA defines harassment as "any act of pursuit, torment or annoyance which has the potential to either: (i) injure a marine mammal or marine mammal stock in the wild, or (ii) disturb a marine mammal or marine mammal stock by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." Levels of harassment are further defined: "Level A harassment" means harassment which has the potential to injure, and "Level B harassment" means harassment which has the potential to disturb, a marine mammal or marine mammal stock in the wild. (16 U.S.C. §1362(18).) Under Section 101(a)(5)(D) of the Act, an Incidental Harassment Authorization Permit (IHA) may be issued for activities other than commercial fishing that may impact small numbers of marine mammals. An IHA covers activities that extend for periods of no more than one year and that will have a negligible impact on the impacted species. If the potential for serious injury and/or mortalities exists, and there are no measures that could be taken to prevent this form of "take" from occurring, a Letter of Authorization (LOA) must be obtained. NMFS reviews reports for "strategic stocks" of marine mammals annually. A strategic stock is a marine mammal stock: "for which the level of direct human-caused mortality exceeds the potential biological removal level; which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the federal ESA within the foreseeable future; or which is listed as threatened or endangered under the federal ESA, or is designated as depleted under the MMPA."

National Oceanic and Atmospheric Administration (NOAA) Fisheries/National Marine Fisheries Service (NMFS) Marine Mammal Acoustic Guidelines. High levels of received underwater sound pressure levels can cause harassment and injury of marine mammals. Marine mammals are considered particularly susceptible to injury and behavioral impacts from anthropogenic noise. (Section 5.12, Noise, provides more information on underwater noise sources.) NOAA Fisheries/NMFS is currently developing species-specific guidelines that would set thresholds for noise impacts on marine mammals (NMFS, 2013a). Until new guidelines are provided, there are two statutory levels of harassment for marine mammals. NMFS currently provides Interim Sound Threshold Guidance (NMFS, 2013b), which NMFS uses in its MMPA permitting processes. NMFS has applied these thresholds of received sound pressure levels in MMPA permits and ESA Section 7 consultations for marine mammals as conservative indicators of whether

harassment may occur. Level A harassment may cause physical injury, and Level B harassment may cause behavioral disruption.

- The Level A harassment threshold is 180 decibels referenced to 1 micropascal (180 dB re 1 μ Pa) for cetaceans (harbor porpoises and gray whale) and 190 dB for pinnipeds (Pacific harbor seals and California sea lions).
- The Level B harassment threshold is 160 dB for pulsed noise and 120 dB for continuous noise (NMFS, 2013b).

Migratory Bird Treaty Act (16 U.S.C. §§ 703–711). The Migratory Bird Treaty Act (MBTA) of 1918 protects all migratory birds. Birds protected under the MBTA include all native waterfowl, shorebirds, hawks, eagles, owls, doves, and other common birds such as ravens, crows, sparrows, finches, swallows, and others, including their body parts (for example feathers and plumes), active nests, and eggs. A complete list of protected species is found at 50 CFR 10.13. Enforcement of the provisions of the MBTA is the responsibility of USFWS.

Clean Water Act (CWA). The purpose of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Clean Water Act Section 404 and the Rivers and Harbors Act of 1899 Section 10 define waters of the United States and wetlands. The definition of “waters of the United States” includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR § 328.3 7b). Section 404 of the CWA prohibits fill of and dredging of Waters of the U.S. without prior authorization from the USACE.

The U.S. Environmental Protection Agency (USEPA) also has authority over wetlands and has the authority to veto a USACE permit under Section 404(c). All Section 404 CWA permit actions require water quality certification or a waiver pursuant to Section 401 of the CWA. This authority has been delegated by USEPA to the state level in California, and this certification or waiver is issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB) and is discussed further in Section 3.9, Hydrology and Water Quality. The RWQCB has conditionally pre-certified certain actions under Nationwide Permits (NWP) that may be obtained in lieu of an individual permit.

Rivers and Harbors Act (33 U.S.C. § 403) addresses effects to navigable waters and regulates “excavation, fill, or alterations or modifications to the course, location, condition, or capacity of any port, ...harbor, canal, lake, ...or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers.” Under Section 10 of the Rivers and Harbors Act, the USACE has the authority to regulate the navigable capacity of any of the waters of the United States.

Dredged Material Management Office. Dredge is defined as material excavated in waters. The Dredged Material Management Office (DMMO) is a joint program of the USACE, San Francisco Bay Conservation and Development Commission (BCDC), RWQCB, California State Lands Commission, and USEPA. CDFW, USFWS, and NMFS provide advice and expertise. The purpose of the DMMO is to cooperatively review sediment quality sampling plans, analyze the results of sediment quality sampling, and make suitability determinations for material proposed for disposal in San Francisco Bay. This interagency group is intended to increase efficiency and coordination between the member agencies and to foster a comprehensive approach to handling dredged material management issues. The DMMO has established seasonal work windows when dredging and in-water construction are allowed because listed fish species

are unlikely to be present at these times. The USACE typically requires work to be done within these work windows as a condition of the dredging permit.

State

California Endangered Species Act (CESA) (CFGF §§ 2050-2098). Sections 2050-2098 of the California Fish and Game Code (CFGF) prohibit the take of state-listed endangered and threatened species unless specifically authorized by CDFW. The state definition of “take” is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. CDFW administers the California Endangered Species Act (CESA) and authorizes take through permits or memoranda of understanding issued under Section 2081 of CFGF or through a consistency determination issued under Section 2080.1. A consistency determination allows CDFW to authorize a project to proceed if that agency agrees with terms and conditions developed for a federal Biological Opinion and Incidental Take Permit. Section 2090 of CFGF requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

Fully Protected Species (CFGF §§ 3511, 4700, 5050, and 5515). CFGF designates certain animal species as “fully protected” under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). “Take” permits for fully protected species may only be issued for fully protected species that are “covered” species in a Natural Community Conservation Plan (NCCP). Fully protected species in the San Francisco Bay Area include species such as the California clapper rail (*Rallus longirostris obsoletus*), brown pelican (*Pelecanus occidentalis*), and peregrine falcon (*Falco peregrinus*). No fully protected fish species occur in San Francisco Bay.

CFGF Protection for Birds: (CFGF § 3503 et seq.). CFGF Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird. Section 3513 makes it unlawful to take or possess any migratory non-game birds designated under the MBTA, except as provided by rules and regulations adopted under the MBTA.

California Species of Special Concern. “Species of Special Concern” is a designation assigned by the CDFW to species it considers at risk. Species of Special Concern meet one or more of the following criteria: (1) is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role; (2) is federally, but not State, listed as threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed; (3) is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; (4) has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status. “Species of Special Concern” is an administrative designation intended to focus attention on at-risk species during environmental review and conservation planning. Species of Special Concern should be considered during the environmental review process. CEQA (California Public Resources Code §§ 21000-21177) requires state agencies, local governments, and special districts to evaluate and disclose impacts from “projects” in the state. Because Section 15380 of the CEQA Guidelines defines endangered, rare or threatened species to include species which meet criteria consistent with the criteria required for listing under the federal and/or state endangered species acts regardless of whether such species are formally listed, Species of Special Concern are appropriately considered in the analysis of project impacts.

McAteer-Petris Act of 1965 (CGC §§ 66650-66661). The McAteer-Petris Act created the San Francisco Bay Conservation and Development Commission (BCDC), which is a state agency with permit authority over the bay and its shoreline. BCDC regulates filling, dredging, and changes in use in San Francisco Bay and development within 100 feet of the bay. The San Francisco Bay Plan (BCDC, 2011) specifies goals, objectives, and policies for existing and proposed waterfront land use and other areas under the jurisdiction of BCDC. This policy states that bay filling “...should be limited to purposes providing substantial public benefits if these same benefits could not be achieved equally well without filling” and that “filling destroys the habitat of fish and wildlife. Future filling can disrupt the ecological balance in the bay, which has already been damaged by past fills, and can endanger the very existence of some species of birds and fish.”

California Marine Invasive Species Program. The California State Lands Commission’s Marine Invasive Species Program is intended to prevent the release of nonindigenous species from commercial vessels into California waters. The program began in 1999 with the passage of California’s Ballast Water Management for Control of Nonindigenous Species Act. In 2003, the Marine Invasive Species Act (MISA) was passed, reauthorizing and expanding the 1999 Act. Subsequent amendments to MISA and additional legislation has further expanded the scope of the program to include research, management and policy development related to vessel fouling and ballast water treatment technologies.

Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the Proposed Project, the project is not subject to local discretionary regulations. The following analysis of local regulations relating to biological resources is provided for informational purposes and to assist with CEQA review.

City and County of San Francisco General Plan. The City and County of San Francisco operate under a General Plan that was adopted in June 1996 and amended through the Board of Supervisors (San Francisco Planning Department, 2012). The General Plan goals, objectives, and policies pertaining to the comprehensive and long-range management, preservation, and conservation of open-space lands — including wildlife, vegetation, and wetland resources — most relevant to the project are listed below.

- Environmental Protection, Objective 1: Achieve a proper balance among the conservation, utilization, and development of San Francisco’s natural resources.
 - Policy 1.2: Improve the quality of natural resources.
 - Policy 1.3: Restore and replenish the supply of natural resources.
 - Policy 1.4: Assure that all new development meets strict environmental quality standards and recognizes human needs.
- Environmental Protection – Bay, Ocean, and Shorelines, Objective 3: Maintain and improve the quality of the Bay, ocean, and shoreline areas.
 - Policy 3.1: Cooperate with and otherwise support regulatory programs of existing regional, State, and Federal agencies dealing with the Bay, Ocean, and Shorelines.
- Environmental Protection – Flora and Fauna, Objective 8: Ensure the protection of plant and animal life in the city.
 - Policy 8.1: Cooperate with and otherwise support the California Department of Fish and Game and its animal protection programs.
 - Policy 8.2: Protect the habitats of known plant and animal species that require a relatively natural environment.
 - Policy 8.3: Protect rare and endangered species.

San Francisco’s Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code). Street trees are “any tree growing within the public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of the Department [of Public Works]” as defined in Section 802 of the Ordinance. The removal of street trees by persons other than the Department of Public Works is restricted by Section 806b, whereby a permit is required for removal. Significant trees are defined in Section 810A of the Ordinance as trees (1) on property under the jurisdiction of the Department of Public Works or on privately owned-property with any portion of its trunk within 10 feet of the public right-of-way, and (2) that satisfies at least one of the following criteria: (a) a diameter at breast height (DBH) in excess of 12 inches, (b) a height in excess of 20 feet, or (c) a canopy in excess of 15 feet. The removal of significant trees by persons other than the Department of Public Works requires a permit from the Department, according to the process described in Section 806b. Landmark trees are trees that have been nominated as landmark trees by a member of the public, the landowner, the Planning Commission, the Board of Supervisors, or the Historic Preservation Commission, and that have been subsequently recommended as a landmark tree by the Urban Forestry Council (within the Department of the Environment), and then must be designated a landmark tree by ordinance approved by the Board of Supervisors. Trees that have been nominated and are undergoing review are protected according to the same standards as designated landmark trees while going through the review process, according to Section 810 of the Ordinance. There are no designated Landmark trees in the project area.

Applicant Proposed Measures

PG&E proposes to implement measures during the design, construction, and operation of the Proposed Project to ensure it would have minimal environmental impacts, in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the Proposed Project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the Proposed Project as described in this document, including this project description and the APMs (see Table 5.4-3), as well as any mitigation measures identified by this Initial Study and adopted by the CPUC decision.

Table 5.4-3. Applicant Proposed Measures (APMs) Related to Biological Resources

APM Number	Issue Area
	Biological Resources
APM BIO-1	<p>General Measures. Environmental awareness training will be conducted for onsite construction personnel prior to the start of construction activities. The training will explain the APMs and any other measures developed to prevent impacts on special-status species, including nesting birds. The training will also include a description of special-status species and their habitat needs, as well as an explanation of the status of these species and their protection under the ESA, CESA, and other statutes. A brochure will be provided with color photos of sensitive species, as well as a discussion of any permit measures. A copy of the training and brochure will be provided to CPUC at least 30 days prior to the start of construction for project files. This APM also includes the following measures:</p> <ul style="list-style-type: none"> ▪ Biological monitor: A qualified biological monitor will verify implementation and compliance with all applicant proposed measures. The monitor will have the authority to stop work or determine alternative work practices where safe to do so, as appropriate, if construction activities are likely to impact sensitive biological resources. ▪ Litter and trash management: All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers. Trash containers will be removed from the project area at the end of each working day. ▪ Parking: Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas as identified in this document. ▪ Pets and firearms: No pets or firearms will be permitted at the project site.

Table 5.4-3. Applicant Proposed Measures (APMs) Related to Biological Resources

APM BIO-2	<p>Preconstruction Surveys. Preconstruction bird nesting surveys will be conducted in the project area no more than 15 days before work is performed in the nesting season February 1 to August 15. Surveyors will search for all potential nest types (e.g. ground, cavity, shrub/tree, structural, etc.) and determine whether or not the nest is active. A nest will be determined to be active if eggs or young are present in the nest. Upon discovery of active nests, appropriate minimization measures (e.g., buffers or shielding) will be determined and approved by the biologist. PG&E’s biological monitor will determine the use of a buffer or shield and work may proceed based upon: acclimation of the species or individual to disturbance, nest type (cavity, tree, ground, etc.), and level and duration of construction activity.</p> <p>In the unlikely event a listed species is found nesting nearby in this urban environment, CDFW and USFWS will be notified if a nest of a listed species is identified in the area of analysis, and the CPUC will be provided with nest survey results, if requested. When active nests are identified, monitoring for significant disturbance to the birds will be implemented.</p> <p>Nest checks will occur each day construction is occurring, documented in a nest check form to be included in the Worker’s Environmental Awareness Training package. Typically a nest check will have a minimum duration of 30 minutes, but may be longer or shorter, or more frequent than one check per day, as determined by PG&E’s biological monitor based on the type of construction activity (duration, equipment being used, potential for construction-related disturbance) and other factors related to assessment of nest disturbance (weather variations, pair behavior, nest stage, nest type, species, etc.). The biological monitor will record the PG&E construction activity occurring at the time of the nest check and note any work exclusion buffer in effect at the time of the nest check. Non-PG&E activities in the area should also be recorded (e.g. adjacent construction sites, roads, commercial/industrial activities, residential activities, etc.). The biological monitor will record any sign of disturbance to the active nest, including but not limited to parental alarm calls, agitated behavior, distraction displays, nest fleeing and returning, chicks falling out of the nest or chicks or eggs being predated as a result of parental abandonment of the nest. Should the PG&E biological monitor determine project activities are causing or contributing to nest disturbance that might lead to nest failure, the PG&E biological monitor will coordinate with the Construction Manager to limit the duration or location of work, and/or set other limits related to use of project vehicles, helicopters, chainsaws, and/or heavy equipment. Should PG&E’s biological monitor determine that project activities are not resulting in significant disturbance to the birds, construction activity will continue and nest checks while work is occurring will be conducted periodically.</p>
APM BIO-3	<p>Seasonal Work Windows. Where feasible, hydroplow cable installation will be conducted between June 1 <u>March 4</u> and November 30, based on the seasonal work windows for steelhead, Chinook salmon, and Pacific herring (USEPA et al., 1996). If work is planned to occur outside of this work window, PG&E will coordinate any additional measures, such as <u>buffer zones and</u> monitoring for herring spawn, with NMFS, USFWS, and CDFW. <u>PG&E will notify CDFW 30 days in advance of its intent to apply for an extension of the work window.</u></p>
APM BIO-4	<p>Herring Spawning Protection. If work occurs within the Bay in December, January, or February, a qualified observer shall monitor hydroplow and HDD connection activities when in proximity (about 660 to 980 feet, or 200 to 300 meters) to potential Pacific herring spawning sites. Herring spawning sites are generally located in shallow water near the surface, and are visible as a large mass of herring eggs, which are adhesive, and attach most commonly to eelgrass or other algae, and can also attach to piers and other features; no eelgrass beds occur in the work areas. If herring spawning sites are observed within 660 feet (200 meters) of the work site by a qualified monitor stationed on a nearby boat, pier, or beach, all in-water activities such as hydro-plowing shall be stopped within that distance or as otherwise specified by the resource agencies for 2 weeks.</p>
APM BIO-5	<p>Aquatic Habitat Protection. PG&E will acquire the necessary permits to conduct cable installation activities in the San Francisco Bay. PG&E will comply with all conditions and requirements of these permits and certification.</p>
APM BIO-6	<p>Fish Screen. All hydroplow water jet intakes will be covered with a mesh screen to minimize the potential for impingement or entrainment of fish species.</p>

Table 5.4-3. Applicant Proposed Measures (APMs) Related to Biological Resources

APM WQ-1	<p>Development and Implementation of a Stormwater Pollution Prevention Plan (SWPPP). Stormwater discharges associated with project construction activities are regulated under the General Construction Permit. Cases in which construction will disturb more than one acre of soil require submittal of a Notice of Intent, development of a SWPPP (both certified by the Legally Responsible Person (LRP)), periodic monitoring and inspections, retention of monitoring records, reporting of incidences of noncompliance, and submittal of annual compliance reports. PG&E will comply with all General Construction Permit requirements.</p> <p>Following project approval, PG&E will prepare and implement a SWPPP, which will address erosion and sediment control to minimize construction impacts on surface water quality. The SWPPP will be designed specifically for the hydrologic setting of the Proposed Project in proximity to the San Francisco Bay. Implementation of the SWPPP will help stabilize graded areas and reduce erosion and sedimentation. The SWPPP will designate BMPs that will be adhered to during construction activities. Erosion and sediment control BMPs, such as straw wattles, erosion control blankets, and/or silt fences, will be installed in compliance with the SWPPP and the General Construction Permit. Suitable soil stabilization BMPs will be used to protect exposed areas during construction activities, as specified in the SWPPP. During construction activities, BMPs will be in place to address construction materials and wastes. BMPs, where applicable, will be designed by using specific criteria from recognized BMP design guidance manuals. Erosion and sediment-minimizing efforts will include measures such as the following:</p> <ul style="list-style-type: none">▪ Defining ingress and egress within the project site to control track-out▪ Implementing a dust control program during construction▪ Properly containing stockpiled soil <p>Identified erosion and sediment control measures will be installed in an area before construction begins and inspected and improved as needed before any anticipated storm events. Temporary sediment control measures intended to minimize sediment transport from temporarily disturbed areas, such as silt fences or wattles, will remain in place until disturbed areas are stabilized. In areas where soil is to be temporarily stockpiled, soil will be placed in a controlled area and managed with similar erosion-control techniques. Where construction activities occur near a surface water body or drainage channel, the staging of construction materials and equipment and excavation spoil stockpiles will be placed at least 50 feet from the water body and properly contained, such as with berms and/or covers, to minimize risk of sediment transport to the drainage. Any surplus soil will be transported from the site and appropriately disposed of.</p> <p>A copy of the SWPPP will be provided to the CPUC for recordkeeping. The plan will be maintained and updated during construction as required by the SWRCB.</p>
APM WQ-6	<p>Horizontal Directional Drilling (HDD) Monitoring and Management. HDD operations will include best management practices for monitoring for loss of drilling fluids, spill containment and response measures. Monitoring and response measures specific to the site subsurface conditions and construction equipment will be included in a Frac-out Plan. The objectives of this monitoring program are to quickly identify any unplanned release of drilling fluids during drilling; determine the size, extent, and location of the release; and evaluate and implement appropriate containment and cleanup measures after a release has occurred. Routine monitoring will be conducted at regular intervals during all drilling activities. More intensive monitoring will be implemented if drilling fluid circulation to the HDD endpoints is lost or an unplanned release is detected.</p> <p>In general, both the drilling technique and early detection and response shall be used to minimize release of fluids to the environment. Techniques to minimize potential loss of drilling fluids include termination of the pilot hole short of the exit into the bay, monitoring of fluid pressures, and adjustments to the drilling fluid mix (see PEA Section 2.6.4, Submarine Cable Installation.) To minimize any potential impacts to water quality, drilling muds (which are heavier than water) shall consist of naturally occurring materials such as water and bentonite clay, plus inert, non-toxic polymers. Monitoring measures that will be included in the Frac-out Plan include use of dyes in the fluid, use of a fluorometer to determine dye concentrations in the water column, and monitoring by divers or side scan sonar in the event of loss of circulation of the fluid; potential responses to a release include measures such as reductions in drilling pressure, thickening of the fluid mixture, and in the event of an emergency, cessation or substantial reduction of drilling and fluid circulation. On land, measures would include installation of spill control berms and pits. For a release in the water column, divers and side scan sonar will be used to track the extent and location of the release. Appropriate containment and clean-up measures will be employed depending on the amount and location of the release, including disposal of material. Waste drilling fluids will be collected in a manner that is in accordance with all local, state and federal regulations.</p> <p>(Also see APM HM-6 and APM WQ-7.)</p>

Table 5.4-3. Applicant Proposed Measures (APMs) Related to Biological Resources

APM WQ-10	<p>Sediment Monitoring and Response Plan. Estimates of the amounts of material that may be suspended will vary depending on the specific type of equipment to be used. During final design, the expected equipment type will be identified and an evaluation can be made of the amount of sediment expected to be suspended. Along with the sediment quality information being gathered as described in APM WQ-8 and APM HM-7, this information will be used to determine, in coordination with the RWQCB, allowable thresholds of turbidity in the area of operations. A Sediment Monitoring and Response Plan will be developed in coordination with the RWQCB, taking into account equipment and the results of sediment sampling, that will set monitoring distance and methodology, acceptable thresholds of turbidity compared to background, and adaptive operational controls that will be used to reduce sediment suspension. These controls may include, but are not limited to, increasing or decreasing the speed of cable installation operation, increasing or decreasing the operational jet nozzle pressure, adjusting the operational angle of the jet nozzles on the burial blade, and other operational parameters that may reduce sediment suspension.</p>
-----------	---

5.4.2 Environmental Impacts and Mitigation Measures

- a. Would the 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?**

LESS THAN SIGNIFICANT WITH MITIGATION – CONSTRUCTION. There are 11 special-status marine species and one special-status bat that may be present in the project area during construction. There are also at least 16 managed fish species likely to be found in the project area. The Proposed Project would construct 3.5 miles of transmission line: 2.5 miles of offshore submarine cable, 0.4 miles horizontal directional drilling to the bay, and 0.6 miles onshore in paved areas. The submarine cable installation would be 1,500 to 2,500 feet offshore, and cable would be installed 6 to 10 feet under the bay floor. Potential impacts to special-status species are described below. With implementation of the APMs in Table 5.4-3 and proposed additional mitigation identified herein, impacts on these species from project construction would be less than significant.

Note: None of the benthic organisms affected by the Proposed Project have special conservation status. Project activities would take place in soft bottom habitats that do not support eelgrass beds (given special-status under the Clean Water Act) or native oyster beds.

Fish. The submarine project route passes through habitat for at least 16 federally managed fish species (see Table 5.4-2); foraging and spawning habitat for Pacific herring; foraging habitat for several recreational fishery species and at least one species, California halibut (*Paralichthys californicus*) that is targeted in the bay by recreational and commercial fishing and suitable foraging habit for four listed fish: green sturgeon, Central California Coast coho salmon, Chinook salmon, California central coast steelhead, and longfin smelt. The San Francisco Bay is federally designated critical habitat for the southern DPS of North American green sturgeon and for the DPS of Central California Coast steelhead.

Installing submarine cable for the Proposed Project would require the use of a hydroplow towed by a barge, tugboats for positioning, and small boats towing HDPE conduit pipes. Fish could be temporarily affected by underwater noise and vibration. (Section 5.12, Noise, discusses baseline underwater noise levels in the environment, and this section addresses noise impacts on biological resources. The 2008 Fisheries Hydroacoustic Working Group determined that sound pressure levels of 206 dB peak and 187 dB accumulated could injure listed fish. Although no pile driving is planned, high pressure water jets used for underwater cable-laying may generate noise levels up to 185 dB at the source (Talisman, 2005). Because fish are generally sensitive to noise levels above those created by the project activity, and fish

can be expected to quickly move away from underwater construction activities, this level of noise would not significantly impact fish in the project area.

Hydroplowing for cable installation would stir up and “fluidize” seabed material in a path 1 foot wide and 6 to 10 feet deep, over approximately 1 to 2 miles per day.⁵ After cable is installed, most of the trench would close as fluidized sediments settle. Over the course of cable installation, 13,200 square feet of seabed would be disturbed. This process would create short-term increases in turbidity, disturbance of benthic habitats, and temporary localized loss of foraging habitat for some fish (City of Pittsburgh, 2006a and b). The project would temporarily disturb a relatively small area of soft bottom habitat and a relatively small volume of open water habitat. Temporary impacts would affect approximately 13,200 square feet of soft bottom habitat; this represents one millionth of the 400 square mile San Francisco Bay (PG&E, 2013; NMFS, 2007a). Both soft bottom and open water habitats support organisms that are food sources for fish (including benthic invertebrates and plankton). However, these food source organisms are widely available in the San Francisco Bay and would rapidly re-colonize disturbed bottom areas. These food sources are also replenished by twice daily tidal water exchanges. Any effects of the project on food resources for fish would be very minimal and less than significant. In addition to increasing turbidity, fluidizing seabed material during cable installation would mobilize contaminants, including polychlorinated biphenyl (PCBs) and polycyclic aromatic hydrocarbons (PAHs) from known areas of contamination (SFEI, 2009; see Section 5.9 [Hydrology and Water Quality] for more detail). Horizontal directional drilling (HDD) could also result in inadvertent release of drilling fluid from the HDD bore holes or exit pits at the bottom of the bay floor that would affect water quality. Exposure to these contaminants could pose health risks to some foraging fish in the vicinity of construction activities (Brar et al., 2010). APM BIO-5 commits PG&E to acquiring the necessary permits for installing cable in the San Francisco Bay. Acquiring these permits would require consultation with wildlife and water quality agencies and implementation of subsequent avoidance and minimization measures. Measures to protect water quality, including APM WQ-6 (Drilling Monitoring and Management Plan) and APM WQ-10 (Sediment Monitoring and Response Plan), require PG&E to implement best management practices for monitoring and spill containment during HDD and to coordinate with the Regional Water Quality Control Board (RWQCB) in determining thresholds for turbidity and implementing a plan to minimize turbidity by changing cable installation speed, jet pressure, or other equipment parameters. With the implementation of these measures, impacts on fish from impaired water quality would be less than significant.

Up to 5 percent of the underwater cable (650 feet) that cannot be buried due to obstructions on the preferred route may need to be covered by concrete “blankets” or steel half-pipe sections up to 50 feet wide. Benthic habitat and organisms would be affected along sections of the transmission line covered by steel pipes or concrete mats where subsurface burial is not possible. Total area covered by concrete or steel pipe would be up to 32,500 square feet or 0.001 square miles of the 400-square-mile bay floor. This would constitute a permanent, but less-than-significant, loss of the soft-bottom benthic habitat in these areas.

⁵ The hydroplow would be equipped with a burial blade lined with adjustable hydraulic pressure nozzles or jets directed downwards and back to fluidize the underlying sediments. The high pressure water flow from this blade results in a down and back flow of sediments, or mass flow, within the trench, which is typically 2-3 feet wide, fluidizing the sediment column to the desired depth as the equipment progresses along the identified route allowing the cable to settle into the trench under its own weight (taking advantage of density difference between fluidized sediment and cable). Typically during hydraulic jetting operations, between 70 and 75 percent of the sediment remains within the cable trench. (PG&E, 2013)

Non-native invasive species are widespread in San Francisco Bay. Several invasive species have the potential to occur in the sediment of the project area. These include Asian clam (*Corbicula amurensis fluminea*), Chinese mitten crab (*Eriocheir sinensis*), and European green crab (*Carcinus maenas*) (USGS, 2012). These species may be disturbed by the project, but are unlikely to be more widely distributed as a result. There are no hard bottom, riprapped areas, reefs, structures such as pier pilings that would be impacted by the project. Therefore, invasive species that attach themselves to these surfaces (such as bryozoans, tunicates, and other sessile encrusting organisms) would not be affected by the project. However, the hydroplow, vessels, barges, or any other floating equipment that does not originate in the San Francisco Bay could introduce marine invasive species. With the implementation of Mitigation Measure B-1 (Implement an Invasive Marine Species Control Plan), this impact would be less than significant.

Fish could be injured or killed by collisions with or entrapment by construction equipment during cable installation. Foraging green sturgeon, coho salmon, Chinook salmon, and steelhead would likely avoid project equipment; however, longfin smelt, which are typically found in the middle to lower water column, could be entrained/impinged. Because longfin smelt is listed as threatened by the state and is a candidate for federal listing, injury or mortality of longfin smelt would be a potentially significant impact. APM BIO-3 (seasonal work windows) requires PG&E to coordinate with NMFS, USFWS, and CDFW if marine construction work is planned outside March 1 to November 30, which is the window for protection of Pacific herring. Monitoring and reporting of injury or mortality of longfin smelt would be required by Mitigation Measure B-3 (Protect marine species), which supplements APM BIO-6. Mitigation Measure B-3 would require PG&E to consult with CDFW and outlines performance standards and monitoring requirements for fish screens. If CDFW determines that an Incidental Take Permit for longfin smelt is necessary, the agency may require additional protective measures such as supplemental monitoring requirements or restrictions on equipment use. With the implementation of these measures, impacts on listed fish would be less than significant.

Marine fish and invertebrates are able to detect some electromagnetic fields (EMF) (Woodruff et al., 2012). Electric fields are detected by elasmobranchs (sharks, skates, and rays), sturgeons, and lampreys (Kalmijn, 1971); these fields are used by these fishes to detect prey, find mates, and perhaps for orientation. Magnetic fields may be detected by salmonids, rockfishes, halibuts, and others for navigation, homing, and orientation (Love et al., 2012; Taylor et al., 1986). However, there is limited evidence of the specific effects of EMF on fishes and other marine organisms (Normandeau et al., 2011; Schultz et al., 2010; Woodruff et al., 2012; Bochert and Zettler, 2006). Current research concludes that behavioral responses to electric or magnetic fields are known for some species but extrapolation to impacts resulting from exposure to undersea power cables is speculative (Normandeau et al., 2011).

Electric and magnetic fields would be generated from the operation of the 230 kV cable for the Proposed Project. Because the undersea cable would be shielded to maximize transmission, there would be very minimal electrical field outside the cable insulation. However, magnetic and induced electrical fields would not be shielded by the cable itself, so these would be present during cable operation. PG&E calculated that the intensity of the magnetic field from normal cable operation (base case / expected 2022 summer peak load of 280 amps) 3 feet above the bay floor, directly above each of the cables, would be approximately 20 microTesla (equivalent to 200 milliGauss). In making this calculation, PG&E assumed a separation of 150 feet between each of the cables and a cable burial depth of 6 feet. The CPUC has evaluated, and concurs with information and analysis provided by PG&E indicating that under normal conditions, the Proposed Project would not cause any magnetic field above 52 microTesla (520 milliGauss) at any location in the water column. (PG&E Supplemental Comment Letter, dated October 10, 2013; see Section 8 of this Final IS/MND and Comment F-16.) Elasmobranchs could poten-

tially sense each of the proposed cables if they were within a few meters of it (Paulin, 1995; Kalmijn 2000). Theoretical responses for marine mammals include a temporary change in swim direction or a deviation from a migratory route. Although these theoretical responses have not been tested, given the spatial limitations of fields from power cables, the likelihood of such a change affecting a large enough area to elicit a significant course alteration would be low (Normandeau et al., 2011).

Estimating the magnitude of the induced electrical field from the cable under normal conditions would involve complex modeling. Induced electrical field studies indicate that to repulse electro-sensitive species, the strength of the induced electrical field needs to be greater than 0.0001 Volts per meter (Normandeau et al. 2011). At its short-term emergency rating, the transmission cable would only produce an induced electrical field greater than 0.0001 Volts per meter within a few meters of each cable. In addition, studies on elasmobranchs interacting with induced electrical fields show that these fishes typically react to weak induced electrical fields at low frequencies (1-10 Hz; Normandeau et al. 2011). The transmission cable for the Proposed Project would operate at 60 Hz. There is not currently enough definitive data to determine whether and how electro-sensitive fishes change their behavior in response to alternating current electrical fields in the 50-60 Hz range (Normandeau et al., 2011).

The project is unlikely to affect green sturgeon, coho salmon, Chinook salmon, or steelhead because of the relatively minimal project footprint (compared to the foraging habitat available in the Bay) and because construction impacts would be temporary. With the implementation of APM BIO-1 (general biological resources protection measures), APM BIO-3 (seasonal work windows), APM BIO-5 (Aquatic Habitat Protection, compliance with permits), water quality protection measures (APM WQ-1, APM WQ-6, and APM WQ-10), and Mitigation Measure B-3 (Protect marine species) these impacts would be less than significant. With the implementation of APM BIO-1, APM BIO-3, and APM BIO-4, impacts on Pacific herring would also be less than significant.

Birds. The onshore project area does not have any known habitat for special-status birds. However, even birds that do not otherwise have special-status are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. The MBTA prohibits killing, possessing, or trading in any migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. Further, raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and State regulations. California Fish and Game Code Section 3503 prohibits the needless destruction of the nest, eggs, or young of any bird covered under the MBTA and Section 3503.5 prohibits the destruction of raptor nests, eggs, or young. Construction disturbance, including tree trimming and tree removal, during the breeding season and avian nesting season that regularly occurs from February 15 through August 31 could adversely affect breeding birds through direct take or indirectly through disruption or harassment. Migratory birds and other birds covered by California Fish and Game Codes Sections 3503 and 3801 could nest in ornamental trees or in structures near project work areas. See Table 5.4-1 for locations of large, mature trees along the project route that may provide nesting habitat. Depending on the precise location of the underground line (determined during final design), some of these trees may need to be removed or trimmed. One entire row of 18 sweetgum trees (2 to 3 inches in diameter and 10 to 15 feet tall) on Spear Street between Folsom Street and Harrison Street could potentially be trimmed or removed during construction (PG&E, 2013); however, these trees are not as large and mature as other trees in the project area and are not likely to support nesting birds.

Because of the urban environment, nesting birds in the project area would likely be somewhat tolerant of noise, dust, and vibration from construction. However, some construction activities in close proximity to nests may still disturb nesting birds, potentially causing nest failure. Section 5.12, Noise, describes the baseline noise levels as being between 60 to 70 dBA in the project area. Table 5.12-4 shows the con-

struction noise levels along the onshore project route. Construction noise could be disruptive along the corridor as it would reach a maximum of 83 dBA at 50 feet from the activity. In addition, tree trimming and tree removal could disturb or even kill nesting birds, which would be a potentially significant impact. APM BIO-1 (general measures) and APM BIO-2 (preconstruction surveys for nesting birds) would reduce potential impacts on birds and their nests. However, PG&E's APM BIO-2 lacks the necessary specificity to ensure that impacts to nesting birds would be less than significant. Mitigation Measure B-4 (Avoid impacts to nesting birds) supersedes APM BIO-2 and includes the following additional requirements: pre-construction surveys to be conducted within 7 days before work activities (a time window that is necessary to ensure that nests are identified); surveys to be led by a qualified biologist approved by the CPUC; and appropriate protective measures to be implemented in coordination with CPUC. With the implementation of these measures, impacts to nesting birds would be less than significant.

Marine Mammals. There are four marine mammals (protected by the federal MMPA) that may be present in the project area: Pacific harbor seal, California sea lion, harbor porpoise, and gray whale. Marine mammal species could be temporarily affected by water-borne noise and vibration, sediment displacement, mobilization of contaminants, or collisions with equipment during placement of submarine cable in the San Francisco Bay. Tugboats and small vessels would be sources of noise comparable to those occurring in the setting. Clamshell dredging would be needed for the excavation pits; however, no pile driving is planned. Underwater noise levels from high pressure water jets for cable-laying could reach 185 dB at the source (Talisman, 2005). PG&E proposes to use a hydroplow with low pressure water jets that would cause less noise and generally be engaged below the seabed, which would also act to attenuate or dampen noise generated by the water jets (PG&E, 2013). Elevated source levels that would occur from the project activities would diminish for locations away from the source to become comparable to the background ambient conditions at a distance of about 800 feet. However, in the immediate vicinity of the dredging or cable-laying, the submarine conditions may exceed the NMFS Level A threshold 180 dB, which could cause physical injury or significantly disrupt the behavioral patterns of marine mammals. To avoid this impact, mitigation would establish a biologist with the authority to stop or modify work to avoid a substantial disruption of marine mammal behavior. Mitigation Measure B-2 (Protect marine mammals from high noise levels) was developed based on review of available technical information and on informal consultation with NMFS. Mitigation Measure B-2 would require PG&E to curtail activities and avoid causing underwater noise that results in a disruption of behavior. With the implementation of this measure and APMs BIO-1, BIO-5, and APMs WQ-1, WQ-6, and WQ-10, impacts on marine mammals would be less than significant.

LESS THAN SIGNIFICANT – OPERATION AND MAINTENANCE. After project construction, operation and maintenance of the Embarcadero Substation and Potrero Switchyard would remain the same as before implementation of the Proposed Project. There would be some additional disturbance of the Central Bay for periodic maintenance and repair of buried cable. Potential impacts to special-status species from maintenance and repair activities would be the same as those described above for construction, but at a much smaller scale. These impacts would be potentially adverse, but less than significant.

Mitigation Measures for Special-Status Species

MM B-1 **Implement an Invasive Marine Species Control Plan.** PG&E shall develop and implement an Invasive Marine Species Control Plan prior to any in-water work. The plan shall include measures designed to effectively limit the introduction and spread of invasive marine species. PG&E shall submit this plan to the CPUC for approval at least 60 days before the start of marine activities. Vessels originating outside San Francisco Bay shall follow existing compliance measures established by the California State Lands Commis-

sion as part of the Marine Invasive Species Program, relating to hull fouling and ballast water control. In addition, if used outside the San Francisco Bay area prior to use on this project, the hydroplow and associated equipment shall be examined and any invasive species handled and disposed of according to the developed plan. Similarly, if the equipment is to be used outside the San Francisco Bay after this use, the equipment shall be examined and cleaned prior to leaving the area.

PG&E shall coordinate plan preparation with the CPUC, U.S. Coast Guard, U.S. Army Corps of Engineers, National Marine Fisheries Service [NMFS], Regional Water Quality Control Board, and California Department of Fish and Wildlife [CDFW] as appropriate. The plan shall include: environmental training for all crew members working in marine areas addressing invasive marine species and actions to be taken to prevent release and spread of invasive marine species. Training shall include procedures for safe removal and disposal of any invasive species found on project equipment. Before and after boats and equipment leave the water, a qualified biologist (approved by the CPUC) shall assist crew members in removing plants, plant debris, and any other potentially invasive species.

MM B-2

Protect marine mammals from high noise levels. PG&E shall consult with the National Marine Fisheries Service (NMFS) to determine whether Incidental Harassment Authorization (IHA) or Letter of Authorization (LOA) for marine mammals is necessary. If NMFS determines that an IHA or LOA is not necessary, PG&E shall submit evidence of this determination to the CPUC prior to the start of marine construction activities.

Monitoring. PG&E shall prepare and implement a Marine Mammal Monitoring Plan. PG&E shall submit this plan to the CPUC for approval before the start of marine activities. The Marine Mammal Monitoring Plan shall include the following elements:

- Establishment of an appropriate buffer zone around the work area, generally 400 feet or as defined in consultation with NMFS, that would require work be slowed or otherwise modified if the work approaches a marine mammal within the established buffer zone.
- A qualified biologist (approved by the CPUC) shall be on board the hydroplowing ship during construction.
- The qualified biologist shall monitor marine mammal presence and behavior in the vicinity of the ship and the surface above hydroplow operations.
- The qualified biologist shall have the authority to slow or stop work, if safe to do so, and shall consult with the CPUC and NMFS about the implementation of additional minimization measures if, based on observations, project construction appears to be disrupting marine mammal behavior in ways that indicate harassment or injury.
- Any disruption of marine mammal behavioral patterns shall be reported to the CPUC and NMFS within two working days with a description of actions taken to curtail work and reduce noise source levels and a demonstration that the disruption caused no potential for injury or mortality.
- PG&E shall submit weekly reports of marine mammal observations to the CPUC during marine construction activities.

As an alternative to preparing and implementing the Marine Mammal Monitoring Plan specified in this mitigation measure, PG&E may provide adequate evidence, to the CPUC for approval at least 30 days before the start of marine activities, based upon actual data collected for this project or other projects using similar equipment in a similar sub-marine environment, that demonstrates to the satisfaction of the CPUC that underwater noise source levels generated by the project hydroplow and marine activities cannot ~~not~~ be reasonably expected to exceed the 180 dB threshold recently used by NMFS for marine mammal protection.

MM B-3

Protect marine species. PG&E shall consult with CDFW to obtain an Incidental Take Permit for longfin smelt or a determination from the agency that the project ~~is~~ will not ~~likely to adversely affect~~ result in take of longfin smelt.

Fish screens. As stated in APM BIO-6, all hydroplow water jet intakes shall be covered with a mesh screen or screening device to minimize potential for impingement or entrainment of fish species, especially longfin smelt. Additional requirements to minimize or prevent entrainment and impingement are also required to supplement APM BIO-6:

- The mesh screen or screening device shall comply with applicable state (CDFW) and federal (NMFS) criteria for screening intakes such as those found in NMFS's 1996 *Juvenile Fish Screen Criteria for Pump Intakes* and CDFW's Fish Screening Criteria (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp) or as required in coordination with ~~by~~ NMFS and CDFW.

Monitoring. A qualified biologist (approved by CPUC) shall verify that the screens are in place at the beginning of each hydroplow work period and examine them for impinged longfin smelt or other fish species at the end of each work period, or whenever the screens are cleaned or the hydroplow is raised out of the water during the cable laying. Injury or mortality shall be reported to CPUC within two working days, with a discussion of actions taken to prevent or minimize any additional longfin smelt injury or mortality or as otherwise determined with CDFW and NMFS. Any injury or mortality of longfin smelt shall also be reported as determined in permitting discussions with CDFW and NMFS.

MM B-4

Avoid impacts to nesting birds. This measure supersedes APM BIO-2. If onshore construction activities occur during the avian nesting season, a preconstruction survey for nesting birds shall be conducted by a qualified wildlife biologist (PG&E employees or contractors, approved by the CPUC) within 7 days prior to the start of noise-generating construction or vegetation trimming or removal activities in any new work area. Surveys shall cover all public areas within 50 feet of work sites. For San Francisco County, the avian nesting season regularly occurs between February 15 and August 31, but a survey may be appropriate earlier or later depending on species, location, and weather conditions as determined by the qualified wildlife biologist.

Work areas that cause no appreciable increase in ambient noise, such as where work is performed manually, by hand, or on foot and activities that cause no observable disturbances to nesting birds (e.g., operating switches, driving on access roads, normally occurring activities at substations, staging or laydown areas) would not warrant a preconstruction survey.

Protective measures for birds. If an active bird nest for a species covered by the Migratory Bird Treaty Act or California Fish and Game Code is found within 50 feet of project work areas, the qualified biologist shall determine appropriate protective measures to reduce the likelihood of nest failure. Protective measures for active nests shall include one or more of the following: avoiding or limiting certain project-related activities within a designated buffer zone surrounding the nest, shielding of the nest from project disturbance using a temporary soundwall or visual screen, or other shielding method as appropriate. The width of the buffer zone (in which work may not occur) shall be based on the disturbance tolerance and conservation status of the species, and the nature of planned construction activities and other human activities in the immediate area. Buffer zones of less than 50 feet shall be allowed only when planned construction activities involve relatively low disturbance or birds have demonstrated tolerance of noise and disturbance. Buffers shall not apply to construction-related vehicle or pedestrian traffic using city streets and sidewalks. As appropriate, exclusion techniques may be used for any construction equipment that is left unattended for more than 24 hours to reduce the possibility of birds nesting in the construction equipment. An example exclusion technique is covering equipment with tarps.

Bird species found building nests within the work areas after specific project activities begin may be assumed tolerant of that specific project activity; the CPUC approved, qualified biologist shall implement an appropriate buffer or other appropriate measures to protect such nests, after taking into consideration the position of the nest, the bird species nesting on site, the type of work to be conducted, and duration of the construction disturbance.

Protective measures for special-status birds. If an active nest for a special-status bird is found, PG&E shall record the position of the nest in the monitoring report and notify the CPUC through the reporting process outlined below. The qualified biologist shall implement buffers and set other protective measures (described above), as appropriate, to protect special-status nesting birds from construction activities in consultation with CPUC, and as appropriate the California Department of Fish and Wildlife (CDFW) and/or United States Fish and Wildlife Service (USFWS). Buffer zones of less than 50 feet shall be allowed only when planned construction activities involve relatively low disturbance or birds have demonstrated tolerance of noise and disturbance. Requests for buffers of less than 50 feet for special-status nesting birds must be submitted to the CPUC's independent biologist(s) for review. The CPUC's independent biologist shall respond to PG&E's request for a buffer reduction (and buffer reduction terms) within one business day; if a response is not received, PG&E can proceed with the buffer reduction. If nesting birds in the presence of the CPUC-approved qualified biologist show signs of intolerance to construction activities within a reduced buffer zone, the qualified biologist shall reinstate the recommended buffer. The recommended buffer may only be reduced again following the same process, as identified above, and after the CPUC-approved, qualified biologist has determined that the nesting birds are no longer exhibiting signs of intolerance to construction activities. Nests shall be monitored daily by the qualified biologist when construction is active at that location. Any potentially significant construction-related disturbance shall be reported to CPUC, CDFW, and USFWS.

Monitoring. Active nests shall be monitored at least once daily during construction until nestlings have fledged and dispersed or until nest failure has been documented. Daily

nest checks shall be at least 30 minutes or more as determined by the qualified biologist based on the type of construction activity (duration, equipment being used, potential for construction-related disturbance) and other factors related to assessment of nest disturbance (weather variations, pair behavior, nest stage, nest type, species, etc.).

The qualified biologist shall record the construction activity occurring at the time of the nest check and note any work exclusion buffer in effect at the time of the nest check. The qualified biologist shall record any sign of disturbance to the active nest, including but not limited to parental alarm calls, agitated behavior, distraction displays, nest fleeing and returning, chicks falling out of the nest or chicks or eggs being predated as a result of parental abandonment of the nest. If the qualified biologist determines that project activities are contributing to nest disturbance, they shall notify CPUC (and CDFW/USFWS as appropriate in the case of special-status bird nests) and coordinate with the Construction Manager to limit the duration or location of work, and/or increase appropriate protective measures (as described above).

Reporting. If there are active nests present within 50 feet of the project area during construction, a weekly written report shall be submitted to CPUC. A final report shall be submitted to CPUC at the end of each nesting season summarizing all nest monitoring results and nest outcomes for the duration of project construction. No avian reporting shall be required for construction occurring outside of the nesting season and if construction activities do not occur within a reduced buffer during any calendar month. Nests located in areas of existing human presence and disturbance, such as in yards of private residences, or within commercial and or industrial properties are likely acclimated to disturbance and may not need to be monitored, as determined by the CPUC-approved, qualified biologist and approved by the CPUC's independent biologist.

Permits. Prior to the start of construction, PG&E may obtain a permit authorized by Section 3503 and/or Section 3503.5 of the California Fish and Game Code, or by any regulation adopted pursuant thereto, pertaining to nesting birds. If PG&E obtains such a permit under the above authorities, where that permit conflicts with the measures outlined above, the conditions of the permit shall govern.

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

LESS THAN SIGNIFICANT. There is no riparian habitat or other sensitive natural community in the project area. There are no eelgrass beds, nor are there any planned eelgrass or shell bed restoration projects in the area (SCC, 2012). Intertidal mudflats would not be affected by cable installation or drilling. The project area contains critical habitat for the southern DPS of North American green sturgeon and the DPS of Central California Coast steelhead. However, as described in Section 5.4.2(a), habitat and food resources for this species would not be significantly affected by the localized and largely temporary impacts of the project. Therefore, the impact to natural communities would be less than significant.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?

NO IMPACT. There are no wetlands in the project area; therefore, there would be no impact.

d. Would the project 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 wildlife nursery sites?

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Item (a), fish and other wildlife (including marine mammals) may be temporarily displaced during cable installation and HDD. These impacts would primarily affect bottom-dwelling species in the immediate path of hydroplowing and at the HDD entrance. Species in the middle and upper water column would likely continue to use those portions of the water column during project construction. Salmonids, North American green sturgeon, longfin smelt, and other special-status fish do not spawn in the Central Bay. These species either spawn in freshwater habitats, or calmer brackish areas further up the delta and the larvae develop into sub-adults in these regions. Therefore, there are unlikely to be any eggs or larvae of any special-status species in the project area. The project area is outside the primary migration corridors for special-status anadromous fish. Potential impacts to herring spawning would be less than significant with the implementation of APM BIO-4. The nearest marine mammal haul-out site is on the far side of Treasure Island and would not be affected by the project (PG&E, 2012). With the implementation of APMs BIO-1, BIO-3, BIO-5, BIO-6, and Mitigation Measures B-1, B-2, and B-3, impacts to the movement of marine wildlife would be less than significant. Impacts on nesting migratory birds would be less than significant with the implementation of Mitigation Measure B-4.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

LESS THAN SIGNIFICANT WITH MITIGATION. The San Francisco General Plan includes goals (listed in the Applicable Regulations section above) related to the protection of biological resources. The Proposed Project would cause temporary disturbance that could affect some disturbed onshore vegetation, landscaped areas, and some wildlife, including special-status bats and marine species. In addition, the Proposed Project may require the removal or trimming of some street trees (covered by San Francisco's Urban Forestry Ordinance). PG&E would obtain and comply with all relevant permits from the Department of Public Works if removal of street trees is required. There are no Landmark trees in the project footprint; the nearest Landmark tree is on Pennsylvania Avenue near 22nd Street (SF Environment, 2013).

With the implementation of APMs BIO-1 through BIO-7, and water quality-related APMs WQ-1, WQ-6, and WQ-10, and Mitigation Measures B-1, B-2, B-3, and B-4 impacts that could conflict with the San Francisco General Plan goals (outlined in Applicable Regulations) would be less than significant.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or State habitat conservation plan?

NO IMPACT. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved conservation plans in the project area; therefore, there would be no impact.