December 1, 2023 by the ORAP DFO (*DFO.orap@noaa.gov*) to provide sufficient time for ORAP review. Written comments received by the ORAP DFO after this date will be distributed to the ORAP, but may not be reviewed prior to the meeting date.

Special Accommodations: These meetings are physically accessible to people with disabilities. Requests for special accommodations may be directed to the ORAP DFO no later than 12 p.m. EST on December 1, 2023.

Matters To Be Considered: The December 13–14, 2023 meeting, will explore the Ocean Policy Committee (OPC) Action Plan and identify areas for ORAP focus. Additionally, as the first meeting of ORAP advising OPC, it will allow ORAP to organize internally to conduct work. The expected outcomes are a shared understanding between ORAP and OPC on interests, capacities, opportunities, and expectations regarding ORAP efforts, and identification of initial topics for ORAP to address.

Meeting materials, including work products, will be made available on the ORAP website: *https://www.noaa.gov/ocean-research-advisory-panel/orap-public-meetings.*

Dated: November 14, 2023.

David Holst,

Director Chief Financial Officer/CAO, Office of Oceanic and Atmospheric Research, National Oceanic and Atmospheric Administration.

[FR Doc. 2023–26076 Filed 11–24–23; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XD458]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Pacific Gas & Electric Sediment Remediation Project, San Francisco Bay

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments on proposed authorization and possible renewal.

SUMMARY: NMFS has received a request from Pacific Gas & Electric Company (PG&E) for authorization to take marine mammals incidental to construction associated with a sediment remediation project in San Francisco Bay, California. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, one-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than December 27, 2023.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service and should be submitted via email to *ITP.jacobus@noaa.gov.* Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.* In case of problems accessing these documents, please call the contact listed above.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments, including all attachments, must not exceed a 25-megabyte file size. All comments received are a part of the public record and will generally be posted online at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities* without change. All personal identifying information (*e.g.,* name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.* In case of problems accessing these documents, please call the contact listed below.

FOR FURTHER INFORMATION CONTACT: Kristy Jacobus, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed IHA is provided to the public for review. Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as ''mitigation''); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must review our proposed action (*i.e.,* the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216–6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review.

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the IHA request.

Summary of Request

On May 4, 2023, NMFS received a request from PG&E for an IHA to take marine mammals incidental to a Sediment Remediation Project in Remedial Response Areas A and B, Piers 39 to 43½, San Francisco Bay. Following NMFS' review of the application, PG&E submitted additional information on July 25, 2023 and September 26, 2023 and subsequently submitted a revised application on November 16, 2023, which was deemed adequate and complete. PG&E's request is for take of seven species (eight stocks) of marine mammals by Level B harassment only. Neither PG&E nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

This proposed IHA would cover 1 year of a larger project for which PG&E intends to request take authorization for subsequent facets of the project if necessary. The larger 5–7 year project involves construction to remediate contaminated sediment.

Description of Proposed Activity

Overview

PG&E is proposing to remediate sediments impacted with polycyclic aromatic hydrocarbons (PAHs) in San Francisco Bay around the area offshore of Pier 43½ to the east of Pier 45 and offshore area of Pier 43. As part of the proposed project, PG&E is proposing to use primarily vibratory pile driving to install steel piles for a turbidity curtain and temporary relocation of the Red and White Fleet (RWF) and wood or composite piles for slope stabilization. Impact pile driving would only be used as needed to seat these piles. In addition, PG&E plans to use impact pile driving to install composite plastic piles as part of a hydroacoustic data collection. Vibratory and impact pile driving would introduce underwater sounds that may result in take, by Level B harassment, of marine mammals. This proposed IHA would authorize take for Year 1 of the project, which is scheduled to begin in spring of 2024.

PG&E's proposed activity includes impact and vibratory pile driving and vibratory pile removal, which may result in the incidental take of marine mammals, by harassment only. No Level A harassment is anticipated to occur, and none is proposed for authorization.

Dates and Duration

The proposed IHA would be effective from May 1, 2024 to April 30, 2025. Up to 50 days of pile driving are expected, which includes a 10% buffer for possible delays (See table 1). Work is expected to occur 6 days a week over an 11 hour workday. Pile driving would be completed only during the daylight hours. The majority of pile driving will be through vibratory methods. Any impact pile driving is restricted to occur from June 1 to November 30 to protect sensitive life stages of listed fish species in the area.

Specific Geographic Region

The Project Area is situated in the San Francisco Bay, about 3.7 miles (mi) (6 km) from the entrance. The Project Area encompasses Pier 39, both the Pier 39 East and West Basins, defined by existing breakwaters, and the intertidal and subtidal areas between Pier 39 and 45 along the margin of San Francisco Bay. The Project Area is divided into five remedial response areas. This IHA is for work being done in Remedial Response Areas A and B. Remedial Response Area A is Pier 43½ offshore area and western limit of the remedial response areas to the east of Pier 45, and Remedial Response Area B is Pier 43 offshore area which includes two subareas (B1 and B2) (See Figure 1). All of the pile driving during the timeframe of this IHA will be in Remedial Response Area A except for the installation of eight turbidity curtain piles in Remedial Response Area B.

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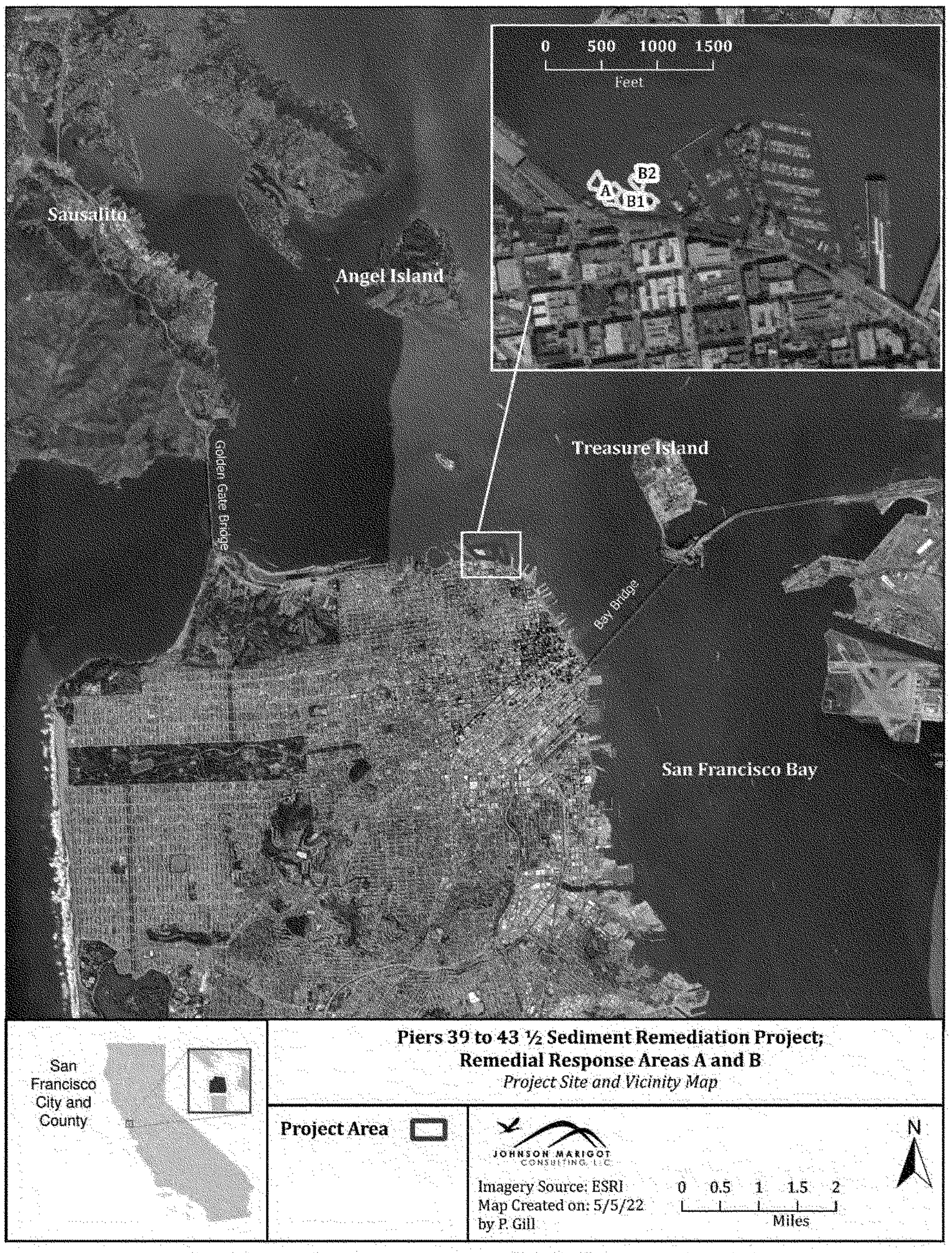

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Figure 1—Project Location

Detailed Description of the Specified Activity

PG&E proposes to remediate sediments impacted with PAHs in order to protect human health and the environment. As noted above, this proposed IHA would authorize take associated with Year 1 of the Project only. This Project is expected to occur over a period of 5–7 years, and the phases will occur from west to east in the Project Area.

PG&E expects that Year 1 of the Project will include installation of hydroacoustic data collection piles; installation of piles to attach a turbidity curtain; dredging of impacted sediment; installation of sediment pins to promote slope stability; capping of impacted sediment to be left in place; placement of armoring as needed; and relocation of the RWF, which will require the installation and removal of piles.

PG&E expects, and NMFS concurs, that only pile driving activities will result in harassment of marine mammals. Underwater noises generated by dredging and capping is similar and within range of other background noise in San Francisco Bay and not anticipated to result in take of marine mammals.

Activities that are expected to result in take are described below and in table 2:

- Hydroacoustic Data Collection—In order to collect hydroacoustic data, up to 10 18-inch composite plastic piles may be driven with an impact hammer during the approved anadromous fish work window between June 1 and November 30. The piles will be removed using vibratory methods.
- Turbidity Curtain—During active dredging and capping operations, a turbidity curtain would be deployed across the full depth of the water column to minimize the potential for material loss outside the remedial response area. The turbidity curtain

would be attached to 20 temporary piles. These piles would consist of either H-piles or steel shell piles less than or equal to 24 inches (61 cm) in diameter and would be installed using vibratory pile driving. These piles would be removed using vibratory methods.

- RWF Temporary Relocation—Relocation of the RWF would require removal of piles and overwater structures at the current location. Facilities would be reconstructed to the east side of Pier 45, which would require placement of eight 36-inch diameter guide piles and eight 24-inch diameter fender piles. All piles will be installed primarily using vibratory methods. If an impact hammer is required to seat piles, it would be restricted to only piles less than or equal to 24 inches (61 cm) in diameter, and attenuation (*e.g.,* bubble curtain) would be used. Work would be restricted to June 1 to November 30 for impact pile driving.
- Slope stabilization—Approximately 120, 14 to 16-inch diameter tapered wood or composite sediment pins would be permanently installed using primarily vibratory methods with impact installation as needed to seat the piles.

TABLE 1—SCHEDULE OF IN-WATER CONSTRUCTION

Type of pile	Total number of pile installation/removal	Number of piles installed/ removed per day	Days of pile driving or removal
Turbidity Curtain (Steel H-Piles or Steel Shell Pile ≤24 inches).	40 (20 installed, 20 removed)	4	10
RWF Temporary Relocation (Steel Shell Pile ≤24 inches and 36 in Steel Shell Piles).	32 (16 installed, 16 removed)	4	8
Sediment Pin Installation (14 to 16-inch timber or plastic).	120 (installation only)	7	* 17
Hydroacoustic Data Collection Piles (18-inch composite).	20 (10 installed, 10 removed)	2	10
Total	180		45
Total (+10% buffer)		* 50	

* Rounded to maximum number of full days.

TABLE 2—PILE INSTALLATION INFORMATION

Pile type	Method	Number piles	Max piles/day	Duration per pile (minutes)	Strikes per pile
Hydroacoustic Data Collection					
18-inch composite/plastic	Impact Installation	10	10	N/A	400
18-inch composite/plastic	Vibratory removal	10	10	5	N/A
Turbidity Curtain [1]					
Steel H-Pile	Vibratory installation and removal.	20 installed and removed	4	10	N/A
Steel Shell Pile ≤24 inches	Vibratory installation and removal.	20 installed and removed	4	10	N/A
RWF Temporary Relocation Piles					
Steel Shell Pile ≤24 inches	Vibratory installation and removal.	16 (8 installed, 8 removed)	4	10	N/A
Steel Shell Pile ≤24 inches	Impact installation if needed	8	4	N/A	400
Steel Shell Pile 36 inches	Vibratory installation and removal.	16 (8 installed, 8 removed)	4	20	N/A
Sediment Pins [2]					
14 to 16-inch Timber	Vibratory installation	120	20	20	N/A
14 to 16-inch Composite/Plastic.	Vibratory installation	120	10	20	N/A
14 to 16-inch Timber or 14 to 16-inch Composite/Plastic.	Impact install if needed	120	10	N/A	400

[1] Turbidity curtain piles will either be H piles or steel shell piles less than or equal to 24 inches in diameter.
[2] The sediment pins will either be timber or composite/plastic.

Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see Proposed Mitigation and Proposed Monitoring and Reporting).

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species*).

Table 3 lists all species or stocks for which take is expected and proposed to be authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or proposed to be authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific and Alaska SARs. All values presented in table 3 are the most recent available at the time of publication and are available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments.*

TABLE 3—MARINE MAMMAL SPECIES LIKELY IMPACTED BY THE SPECIFIED ACTIVITIES [1]

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) [2]	Stock abundance (CV, N_{min}, most recent abundance survey) [3]	PBR	Annual M/SI [4]
Family Delphinidae:						
Bottlenose dolphin	*Tursiops truncatus*	Coastal California	-,-,N	453 (0.06, 346, 2011)	2.7	≥2.0
Family Phocoenidae (porpoises):						
Harbor porpoise	*Phocoena phocoena*	San Francisco-Russian River	-,-,N	7,777 (0.62, 4811, 2017)	73	≥0.4
Order Carnivora—Pinnipedia						
Family Otariidae (eared seals and sea lions):						
California Sea Lion	*Zalophus californianus*	United States	-,-,N	257,606 (N/A, 233,515, 2014).	14,011	≥321
Northern Fur Seal	*Callorhinus ursinus*	California	-,-,N	14,050 (0.03, 7,524, 2013).	451	1.8
Northern Fur Seal	*Callorhinus ursinus*	Eastern North Pacific	-, D, Y	626,618 (0.2, 530,376, 2021).	11,403	373
Steller Sea Lion	*Eumetopias jubatus*	Eastern North Pacific	-,-,N	43,201 (N/A, 43,201, 2017).	2,592	112
Family Phocidae (earless seals):						
Harbor Seal	*Phoca vitulina*	California	-,-,N	30,968 (N/A, 27,348, 2014).	1,641	43
Northern Elephant Seal	*Mirounga angustirostris*	California Breeding	-,-,N	187,386 (N/A, 85,369, 2013).	5,122	13.7

[1] Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/;* Committee on Taxonomy (2022)).
[2] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.
[3] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports.* CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.
[4] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, vessel strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range.

As indicated above, all seven species (with eight managed stocks) in table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. Gray whales and humpback whales rarely enter the Bay but may occasionally pass offshore of the Project Area. However, if either of these species are to approach the Level B zone construction will be shutdown. Therefore, no take is expected of these species, and these species will not be discussed further.

Harbor Seal

Pacific harbor seals are distributed from Baja California north to the Aleutian Islands of Alaska. Harbor seals do not make extensive pelagic migrations, but may travel hundreds of kilometers to find food or suitable breeding areas (Herder, 1986; Harvey and Goley, 2011; Carretta *et al.,* 2023).

Harbor seals are the most common marine mammal species observed in the Bay and occur year-round. Within the Bay they primarily use haulouts on exposed rocky ledges and on sloughs in the southern Bay. Harbor seals are central-place foragers (Orians and Pearson 1979) and tend to exhibit strong site fidelity within season and across years, generally forage close to haulout sites, and repeatedly visit specific foraging areas (Grigg *et al.,* 2012; Suryan and Harvey, 1998; Thompson *et al.,* 1998). Harbor seals in the Bay forage mainly within 7 mi (11.3 kilometers (km)) of their primary haulout site (Grigg *et al.* 2012), and often within just 1–3 mi (1–5 km; Torok 1994). Harbor seals tend to forage at night and return to the haulout during the day with the peak in the afternoon between 1 p.m. and 4 p.m. (London *et al,* 2001; Stewart and Yochem, 1994; Yochem *et al,* 1987).

The closest harbor seal haulout to the Project Area is Yerba Buena Island (YBI), approximately 4 km to the east of the Project Area. Although the YBI haulout is not expected to be within the area of ensonification, it is likely that foraging seals from this location would be present in the water during construction.

Northern Elephant Seal

Northern elephant seals range from southern California north to the Bering Sea, and west to the Okhotsk Sea and Honshu Island, Japan in the west (Carretta *et al.,* 2023). They are common on California coastal mainland and island sites, where they pup, breed, rest, and molt. Northern elephant seals haul out to give birth and breed from December through March. Near the Bay, elephant seals breed, molt, and use the Año Nuevo Island haulout site, the Farallon Islands, and Point Reyes National Seashore. Northern elephant seals do not have any established haulout sites in the Bay. Generally, only juvenile elephant seals enter the Bay seasonally and do not remain long if they are healthy. Their diet is composed of small schooling fish such as walleye Pollock, herring, hake, anchovy, and squid. Diet and population trends vary with environmental conditions, such as El Niño (Carretta *et al.,* 2023).

California Sea Lion

California sea lions are found from Vancouver Island, British Columbia, to the southern tip of Baja California. Sea lions breed on the offshore islands of southern and central California from May through July (Heath and Perrin, 2008). During the non-breeding season, adult and subadult males and juveniles migrate northward along the coast to central and northern California, Oregon, Washington, and Vancouver Island (Jefferson, *et al.* 1993). Females and some juveniles tend to remain closer to rookeries (Atonelis *et al.,* 1990; Melin *et al.,* 2008).

California sea lions have occupied K-Dock at Pier 39 in the Bay, adjacent to Area D of the Project Area, since 1987. No pupping has been observed here or at any other site in the Bay. Pier 39 is the only regularly used haulout site in the Project vicinity, but sea lions occasionally use human-made structures such as bridge piers, jetties, or navigation buoys (Riedman, 1990) as a haulout location.

California sea lions feed seasonally on schooling fish and cephalopods, including salmon, herring, sardines, anchovy, mackerel, whiting, rockfish and squid (Lowry *et al.,* 1990, 1991, 2022; Weise 2000; Carretta *et al.,* 2023) and can be seen foraging throughout the Bay. In central California sea lion populations, short term seasonal variations in diet are related to prey movement and life history patterns while long-term annual changes correlate to large-scale ocean climate shifts and foraging competition with commercial fisheries (Weise and Harvey, 2008; McClatchie *et al.* 2016). Conservation concerns for California sea lions include prey species availability due to climate change, vessel strikes, non-commercial fishery human caused mortality, hookworms, and competition for forage with commercial fisheries (Carretta *et al.,* 2018; Carretta *et al.* 2023).

Northern Fur Seal

Two northern fur seal stocks may occur near the Bay: the California and Eastern North Pacific stocks. The California stock breeds and pups on the offshore islands of California, and forages off the California coast. The Eastern Pacific stock breeds and pups on islands in the North Pacific Ocean and Bering Sea, but females and juveniles move south to California waters to forage in the fall and winter months (Gelatt and Gentry, 2018). Both the California and Eastern North Pacific stocks forage in the offshore waters of California, but usually only sick or emaciated juvenile fur seals seasonally enter the Bay in the fall and winter. Fur seals occasionally strand on YBI and Treasure Island, approximately 3.2 km from the Project Area.

Steller Sea Lion

Steller sea lions range along the North Pacific Rim from northern Japan to California. The eastern stock of Steller sea lions has historically bred on rookeries located in Southeast Alaska, British Columbia, Oregon, and California. Within the last several years a new rookery has become established on the outer Washington coast (Muto *et al.,* 2020). The Steller sea lion is not common in the Bay, but occasionally Steller sea lions can be seen hauled out on Pier 39. Most recently, an adult male Steller sea lion was seen on the K-dock haulout in May 2023 (Segura, 2023).

Bottlenose Dolphin

Bottlenose dolphins are distributed world-wide in tropical and warm-temperate waters. The California coastal stock of common bottlenose dolphin is found within 0.6 mi (1 km) of shore (Defran and Weller, 1999) and occurs from northern Baja California, Mexico to Bodega Bay, CA. Their range has extended north over the last several decades with El Niño events and increased ocean temperatures (Hansen and Defran, 1990) and spans as far north as Sonoma County (Keener *et al.,* 2023). As the range of bottlenose dolphins extended north, dolphins began entering the Bay in 2010 (Szczepaniak, 2013). Bottlenose dolphins have been regularly observed in the western Central and South Bay, and between one and five dolphins are thought to be year-round residents of the Bay (Pacific Gas & Electric, 2023). An offshore common bottlenose dolphin stock exists, but genetic studies show that no mixing occurs between the two stocks (Lowther-Thieleking *et al.,* 2015). Bottlenose dolphins are opportunistic foragers, and time of day, tidal state, and oceanographic habitat influence where they pursue prey (Hanson and Defran, 1993).

Harbor Porpoise

In the Pacific, harbor porpoise are found in coastal and inland waters from Point Conception, California to Alaska and across to Kamchatka and Japan (Gaskin, 1984). Harbor porpoise appear to have more restricted movements along the western coast of the continental U.S. than along the eastern coast. The non-migratory San Francisco-Russian River stock ranges from Pescadero to Point Arena, California, utilizes relatively shallow nearshore waters (<100 meters), and feeds on small schooling fishes such as northern anchovy and Pacific herring which enter the Bay (Carretta *et al.,* 2023; Stern *et al.,* 2017). Harbor porpoises tend to occur in small groups and are considered to be relatively cryptic animals.

Harbor porpoises are seen frequently outside the Bay and re-entered the Bay beginning in 2008 (Stern *et al.,* 2017). They are now commonly seen year-round within the Bay in groups of two to five individuals, primarily on the west and northwest side of the Central Bay near the Golden Gate Bridge, near Marin County, and near the City of San Francisco (Duffy, 2015; Keener *et al.,* 2012; Stern *et al.,* 2017) in the vicinity of the Project Area. Harbor porpoises are generally shallow, short-duration divers and must forage nearly continuously to meet their high metabolic needs (Wisniewska *et al.* 2016). Harbor porpoise movements into the Bay are likely influenced by prey availability (Duffy 2015; Stern *et al.,* 2017).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in table 4.

TABLE 4—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.,* 2006; Kastelein *et al.,* 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section provides a discussion of the ways in which components of the specified activity may impact marine mammals and their habitat. The Estimated Take of Marine Mammals section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take of Marine Mammals section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and whether those impacts are reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Acoustic effects on marine mammals during the specified activities can occur from impact pile driving and vibratory pile driving and removal. The effects of underwater noise from PG&E's proposed activities have the potential to result in Level B harassment of marine mammals in the project area.

Description of Sound Sources

The marine soundscape is comprised of both ambient and anthropogenic sounds. Ambient sound is defined as the all-encompassing sound in a given place and is usually a composite of sound from many sources both near and far (American National Standards Institute (ANSI), 1995). The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.,* sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.,* vessels, dredging, aircraft, construction).

The sum of the various natural and anthropogenic sound sources at any given location and time—which comprise ''ambient'' or ''background'' sound—depends not only on the source levels (as determined by current weather conditions and levels of biological and shipping activity) but also on the ability of sound to propagate through the environment. In turn, sound propagation is dependent on the spatially and temporally varying properties of the water column and sea floor, and is frequency-dependent. As a result of the dependence on a large number of varying factors, ambient sound levels can be expected to vary widely over both coarse and fine spatial and temporal scales. Sound levels at a given frequency and location can vary by 10–20 dB from day to day (Richardson *et al.,* 1995). The result is that, depending on the source type and its intensity, sound from the specified activities may be a negligible addition to the local environment or could form a distinctive signal that may affect marine mammals.

In-water construction activities associated with the project would include impact and vibratory pile driving and removal. The sounds produced by these activities fall into one of two general sound types: impulsive and non-impulsive. Impulsive sounds (*e.g.,* explosions, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound pressure with rapid rise time and rapid decay (ANSI, 1986; NIOSH, 1998; NMFS, 2018). Non-impulsive sounds (*e.g.,* machinery operations such as drilling or dredging, vibratory pile driving, underwater chainsaws, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with raid rise/decay time that impulsive sounds do (ANSI, 1995; NIOSH, 1998; NMFS, 2018). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward, 1997).

Two types of hammers would be used on this project, impact and vibratory. Impact hammers operate by repeatedly dropping and/or pushing a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is considered impulsive. Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the sediment. Vibratory hammers produce non-impulsive, continuous sounds. Vibratory hammering generally produces sound pressure levels (SPLs) 10 to 20 dB lower than impact pile driving of the same-sized pile (Oestman *et al.,* 2009). Rise time is slower, reducing the probability and severity of injury, and sound energy is distributed over a greater amount of time (Nedwell and Edwards, 2002; Carlson *et al.,* 2005).

The likely or possible impacts of PG&E's proposed activities on marine mammals could be generated from both non-acoustic and acoustic stressors. Potential non-acoustic stressors include the physical presence of the equipment and personnel; however, we expect that any animals that approach the project site close enough to be harassed due to the presence of equipment or personnel would be within the Level B harassment zones from pile driving and would already be subject to harassment from the in-water activities. Therefore, any impacts to marine mammals are expected to primarily be acoustic in nature. Acoustic stressors are generated by heavy equipment operation during pile driving activities (*i.e.,* impact and vibratory pile driving and removal).

Acoustic Impacts

The introduction of anthropogenic noise into the aquatic environment from pile driving equipment is the primary means by which marine mammals may be harassed from PG&E's specified activities. In general, animals exposed to natural or anthropogenic sound may experience physical and psychological effects, ranging in magnitude from none to severe (Southall *et al.,* 2007). Generally, exposure to pile driving and removal and other construction noise has the potential to result in auditory threshold shifts and behavioral reactions (*e.g.,* avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior). Exposure to anthropogenic noise can also lead to non-observable physiological responses, such as an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions, such as communication and predator and prey detection. The effects of pile driving and demolition noise on marine mammals are dependent on several factors, including, but not limited to, sound type (*e.g.,* impulsive vs. non-impulsive), the species, age and sex class (*e.g.,* adult male vs. mother with calf), duration of exposure, the distance between the pile and the animal, received levels, behavior at time of exposure, and previous history with exposure (Wartzok *et al.,* 2004; Southall *et al.,* 2007). Here we discuss physical auditory effects (threshold shifts) followed by behavioral effects and potential impacts on habitat.

NMFS defines a noise-induced threshold shift (TS) as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). The amount of threshold shift is customarily expressed in dB. A TS can be permanent or temporary. As described in NMFS (2018), there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.,* impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.,* spectral content), the hearing and vocalization frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.,* how animal uses sound within the frequency band of the signal; *e.g.,* Kastelein *et al.,* 2014), and the overlap between the animal and the source (*e.g.,* spatial, temporal, and spectral).

Permanent Threshold Shift (PTS)

NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Available data from humans and other terrestrial mammals indicate that a 40 dB threshold shift approximates PTS onset (see Ward *et al.,* 1958, 1959; Ward, 1960; Kryter *et al.,* 1966; Miller, 1974; Ahroon *et al.,* 1996; Henderson *et al.,* 2008). PTS levels for marine mammals are estimates, because there are limited empirical data measuring PTS in marine mammals (*e.g.,* Kastak *et al.,* 2008), largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing PTS are not typically pursued or authorized (NMFS, 2018).

Temporary Threshold Shift (TTS)

TTS is a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). Based on data from cetacean TTS measurements (see Southall *et al.,* 2007), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000, 2002). As described in Finneran (2016), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SEL_{cum}) in an accelerating fashion: At low exposures with lower SEL_{cum}, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SEL_{cum}, the growth curves become steeper and approach linear relationships with the noise SEL.

Depending on the degree (elevation of threshold in dB), duration (*i.e.,* recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious (similar to those discussed in auditory masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that takes place during a time when the animal is traveling through the open ocean, where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during time when communication is critical for successful mother/calf interactions could have more serious impacts. We note that reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.,* 2007), so we can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

Currently, TTS data only exist for four species of cetaceans (bottlenose dolphin, beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*), and five species of pinnipeds exposed to a limited number of sound sources (*i.e.,* mostly tones and octave-band noise) in laboratory settings (Finneran, 2015). TTS was not observed in trained spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to impulsive noise at levels matching previous predictions of TTS onset (Reichmuth *et al.,* 2016). In general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). At low frequencies, onset-TTS exposure levels are higher compared to those in the region of best sensitivity (*i.e.,* a low frequency noise would need to be louder to cause TTS onset when TTS exposure level is higher), as shown for harbor porpoises and harbor seals (Kastelein *et al.,* 2019a, 2019b, 2020a, 2020b). In addition, TTS can accumulate across multiple exposures, but the resulting TTS will be less than the TTS from a single, continuous exposure with the same SEL (Finneran *et al.,* 2010; Kastelein *et al.,* 2014; Kastelein *et al.,* 2015; Mooney *et al.,* 2009). This means that TTS predictions based on the total, cumulative SEL will overestimate the amount of TTS from intermittent exposures such as sonars and impulsive sources.

The potential for TTS from impact pile driving exists. After exposure to playbacks of impact pile driving sounds (rate 2,760 strikes/hour) in captivity, mean TTS increased from 0 dB after 15 minute exposure to 5 dB after 360 minute exposure; recovery occurred within 60 minutes (Kastelein *et al.,* 2016). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species. No data are available on noise-induced hearing loss for mysticetes. Nonetheless, what we considered is the best available science. For summaries of data on TTS in marine mammals or for further discussion of TTS onset thresholds, please see Southall *et al.* (2007, 2019), Finneran and Jenkins (2012), Finneran (2015), and table 5 in NMFS (2018).

Activities for this project include impact and vibratory pile driving, and vibratory pile removal. There would likely be pauses in activities producing the sound during each day. Given these pauses and the fact that many marine mammals are likely moving through the project areas and not remaining for extended periods of time, the potential for TS declines.

Behavioral Harassment

Exposure to noise from pile driving and removal also has the potential to behaviorally disturb marine mammals. Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.,* Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005).

Disturbance may result in changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); or avoidance of areas where sound sources are located. Pinnipeds may increase their haul-out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2004; Southall *et al.,* 2007, 2021; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. Please see Appendices B and C of Southall *et al.* (2007) as well as Nowacek *et al.* (2007); Ellison *et al.* (2012), and Gomez *et al.* (2016) for a review of studies involving marine mammal behavioral responses to sound.

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (*e.g.,* bubble nets or sediment plumes), or changes in dive behavior. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.,* Croll *et al.,* 2001; Nowacek *et al.,* 2004; Madsen *et al.,* 2006; Yazvenko *et al.,* 2007; Melcón *et al.,* 2012). In addition, behavioral state of the animal plays a role in the type and severity of a behavioral response, such as disruption to foraging (*e.g.,* Sivle *et al.,* 2016; Wensveen *et al.,* 2017). A determination of whether foraging disruptions incur fitness consequences would require information on or estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal (Goldbogen *et al.,* 2013).

Stress Responses

An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses (*e.g.,* Selye, 1950; Moberg, 2000). In many cases, an animal's first and sometimes most economical (in terms of energetic costs) response is behavioral avoidance of the potential stressor. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity. These responses have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

Neuroendocrine stress responses often involve the hypothalamus-pituitary-adrenal system. Virtually all neuroendocrine functions that are affected by stress—including immune competence, reproduction, metabolism, and behavior—are regulated by pituitary hormones. Stress-induced changes in the secretion of pituitary hormones have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance (*e.g.,* Moberg, 1987; Blecha, 2000). Increases in the circulation of glucocorticoids are also equated with stress (Romano *et al.,* 2004).

The primary distinction between stress (which is adaptive and does not normally place an animal at risk) and ''distress'' is the cost of the response. During a stress response, an animal uses glycogen stores that can be quickly replenished once the stress is alleviated. In such circumstances, the cost of the stress response would not pose serious fitness consequences. However, when an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other functions. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function.

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well-studied through controlled experiments for both laboratory and free-ranging animals (*e.g.,* Holberton *et al.,* 1996; Hood *et al.,* 1998; Jessop *et al.,* 2003; Krausman *et al.,* 2004; Lankford *et al.,* 2005). Stress responses due to exposure to anthropogenic sounds or other stressors and their effects on marine mammals have also been reviewed (Fair and Becker 2000; Romano *et al.,* 2002b) and, more rarely, studied in wild populations (*e.g.,* Romano *et al.,* 2002a). For example, Rolland *et al.* (2012) found that noise reduction from reduced ship traffic in the Bay of Fundy was associated with decreased stress in North Atlantic right whales. These and other studies lead to a reasonable expectation that some marine mammals will experience physiological stress responses upon exposure to acoustic stressors and that it is possible that some of these would be classified as ''distress.'' In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2003), however distress is an unlikely result of these projects based on observations of marine mammals during previous, similar projects in the area.

Masking

Sound can disrupt behavior through masking, or interfering with, an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation) (Richardson *et al.,* 1995). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* pile driving, shipping, sonar, seismic exploration) in origin. The ability of a noise source to mask biologically important sounds depends on the characteristics of both the noise source and the signal of interest (*e.g.,* signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.,* sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions. Masking of natural sounds can result when human activities produce high levels of background sound at frequencies important to marine mammals. Conversely, if the background level of underwater sound is high (*e.g.,* on a day with strong wind and high waves), an anthropogenic sound source would not be detectable as far away as would be possible under quieter conditions and would itself be masked. The masking of communication signals by anthropogenic noise may be considered as a reduction in the communication space of animals (*e.g.,* Clark *et al.,* 2009) and may result in energetic or other costs as animals change their vocalization behavior (*e.g.,* Miller *et al.,* 2000; Foote *et al.,* 2004; Parks *et al.,* 2007; Di Iorio and Clark, 2010; Holt *et al.,* 2009). The Bay is heavily used by commercial, recreational, and military vessels, and background sound levels in the area are already elevated. Due to the transient nature of marine mammals to move and avoid disturbance, masking is not likely to have long-term impacts on marine mammal species within the proposed project area.

Airborne Acoustic Effects

Pinnipeds that occur near the project site could be exposed to airborne sounds associated with pile driving and removal that have the potential to cause behavioral harassment, depending on their distance from pile driving activities. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA.

Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above the acoustic criteria. We recognize that pinnipeds in the water could be exposed to airborne sound that may result in behavioral harassment when looking with their heads above water. Most likely, airborne sound would cause behavioral responses similar to those discussed above in relation to underwater sound. For instance, anthropogenic sound could cause hauled-out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to temporarily abandon the area and move further from the source. However, these animals would likely previously have been ''taken'' because of exposure to underwater sound above the behavioral harassment thresholds, which are generally larger than those associated with airborne sound. Thus, the behavioral harassment of these animals is already accounted for in these estimates of potential take. Therefore, we do not believe that authorization of incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further here.

Marine Mammal Habitat Effects

PG&E's proposed construction activities could have localized, temporary impacts on marine mammal habitat, including prey, by increasing in-water sound pressure levels and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see masking discussion above) and adversely affect marine mammal prey in the vicinity of the project areas (see discussion below). During impact and vibratory pile driving or removal, elevated levels of underwater noise would ensonify the project area where both fishes and mammals occur, and could affect foraging success. Additionally, marine mammals may avoid the area during construction, however, displacement due to noise is expected to be temporary and is not expected to result in long-term effects to the individuals or populations. Construction activities are expected to be of short duration and would likely have temporary impacts on marine mammal habitat through increases in underwater and airborne sound.

A temporary and localized increase in turbidity near the seafloor would occur in the immediate area surrounding the area where piles are installed or removed. In general, turbidity associated with pile driving is localized to about a 25 feet (ft) (7.6-m) radius around the pile (Everitt *et al.,* 1980). Cetaceans are not expected to be close enough to the pile driving areas to experience effects of turbidity, and any pinnipeds could avoid localized areas of turbidity. Local currents are anticipated to disburse any additional suspended sediments produced by project activities at moderate to rapid rates depending on tidal stage. Therefore, we expect the impact from increased turbidity levels to be discountable to marine mammals and do not discuss it further.

In-Water Construction Effects on Potential Foraging Habitat

The area likely impacted by the proposed action is relatively small compared to the total available habitat in the Bay. The proposed project area is highly influenced by anthropogenic activities and provides limited foraging habitat for marine mammals. Furthermore, pile driving and removal at the proposed project site would not obstruct long-term movements or migration of marine mammals.

Avoidance by potential prey (*i.e.,* fish) of the immediate area due to the temporary loss of this foraging habitat is also possible. The duration of fish and marine mammal avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated. Any behavioral avoidance by prey of the disturbed area would still leave significantly large areas of potential foraging habitat in the nearby vicinity.

In-Water Construction Effects on Potential Prey

Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* crustaceans, cephalopods, fish, zooplankton, other marine mammals). Marine mammal prey varies by species, season, and location. Here, we describe studies regarding the effects of noise on known marine mammal prey. Fish utilize the soundscape and components of sound in their environment to perform important functions such as foraging, predator avoidance, mating, and spawning (*e.g.,* Zelick and Mann, 1999; Fay, 2009). Depending on their hearing anatomy and peripheral sensory structures, which vary among species, fishes hear sounds using pressure and particle motion sensitivity capabilities and detect the motion of surrounding water (Fay *et al.,* 2008). The potential effects of noise on fishes depends on the overlapping frequency range, distance from the sound source, water depth of exposure, and species-specific hearing sensitivity, anatomy, and physiology. Key impacts to fishes may include behavioral responses, hearing damage, barotrauma (pressure-related injuries), and mortality.

Fish react to sounds which are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to noise depends on the physiological state of the fish, past exposures, motivation (*e.g.,* feeding, spawning, migration), and other environmental factors. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fish; several are based on studies in support of large, multiyear bridge construction projects (*e.g.,* Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Many studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Fewtrell and McCauley, 2012; Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Paxton *et al.,* 2017). In response to pile driving, Pacific sardines and northern anchovies may exhibit an immediate startle response to individual strikes, but return to ''normal'' pre-strike behavior following the conclusion of pile driving with no evidence of injury as a result (appendix C in NAVFAC SW, 2014). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Pena *et al.,* 2013; Wardle *et al.,* 2001; Jorgenson and Gyselman, 2009; Popper *et al.,* 2005).

SPLs of sufficient strength have been known to cause injury to fish and fish mortality. However, in most fish species, hair cells in the ear continuously regenerate and loss of auditory function likely is restored when damaged cells are replaced with new cells. Halvorsen *et al.* (2012a) showed that a TTS of 4–6 dB was recoverable within 24 hours for one species. Impacts would be most severe when the individual fish is close to the source and when the duration of exposure is long. Injury caused by barotrauma can range from slight to severe and can cause death, and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to impact pile driving (Halvorsen *et al.,* 2012b; Casper *et al.,* 2013).

The most likely impact to fishes from pile driving and removal and construction activities at the project area would be temporary behavioral avoidance of the area. The duration of fish avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated. In general, impacts to marine mammal prey species are expected to be minor and temporary. Further, it is anticipated that preparation activities for pile driving or removal (*i.e.,* positioning of the hammer, clipper or wire saw) and upon initial startup of devices would cause fish to move away from the affected area outside areas where injuries may occur. Therefore, relatively small portions of the proposed project area would be affected for short periods of time, and the potential for effects on fish to occur would be temporary and limited to the duration of sound-generating activities.

In summary, given the short daily duration of sound associated with individual pile driving events and the relatively small areas being affected, pile driving activities associated with the proposed actions are not likely to have a permanent, adverse effect on any fish habitat, or populations of fish species. Any behavioral avoidance by fish of the disturbed area would still leave significantly large potential areas fish and marine mammal foraging habitat in the nearby vicinity. Thus, we conclude that impacts of the specified activities are not likely to have more than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes proposed for authorization through the IHA, which will inform both NMFS' consideration of ''small numbers,'' and the negligible impact determinations.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines ''harassment'' as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would be by Level B harassment only, in the form of disruption of behavioral patterns and/or TTS for individual marine mammals resulting from exposure to vibratory and impact pile driving. Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.,* shutdown) discussed in detail below in the Proposed Mitigation section, Level A harassment is neither anticipated nor proposed to be authorized.

As described previously, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the proposed take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimates.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.,* frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.,* bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.,* Southall *et al.,* 2007, 2021; Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 μPa)) for continuous (*e.g.,* vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by TTS as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

PG&E's proposed activity includes the use of continuous (vibratory pile driving) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μPa are applicable.

Level A harassment—NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). PG&E's proposed activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

TABLE 5—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

Hearing group	PTS onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB	*Cell 2:* $L_{E,LF,24h}$: 199 dB.
Mid-Frequency (MF) Cetaceans	*Cell 3:* $L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB	*Cell 4:* $L_{E,MF,24h}$: 198 dB.
High-Frequency (HF) Cetaceans	*Cell 5:* $L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB	*Cell 6:* $L_{E,HF,24h}$: 173 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{pk,flat}$: 218 dB; $L_{E,PW,24h}$: 185 dB	*Cell 8:* $L_{E,PW,24h}$: 201 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{pk,flat}$: 232 dB; $L_{E,OW,24h}$: 203 dB	*Cell 10:* $L_{E,OW,24h}$: 219 dB.

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of $1\mu Pa^2s$. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.,* varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

The sound field in the project area is the existing background noise plus additional construction noise from the proposed project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.,* pile driving and removal).

The project includes vibratory pile installation and removal and impact pile driving. Source levels for these activities are based on reviews of measurements of the same or similar types and dimensions of piles available in the literature. Source levels for each pile size and activity are presented in table 6. Source levels for vibratory installation and removal of piles of the same diameter are conservatively assumed to be the same.

The majority of source levels were selected from a single source, as shown in table 6 below. For the vibratory installation of 36-inch steel shell piles and vibratory installation of timber piles, NMFS determined it appropriate to use an average of source levels. NMFS reviewed all available monitoring reports of vibratory driving of 36-inch steel piles in San Francisco Bay (Gast &Associated Environmental Consultants, 2021, 2023; Illingworth & Rodkin, 2018, 2020). Averaging of sound levels was performed by first converting from dB to linear units of pressure (Pascals [Pa]), averaging, and converting back to dB. The mean RMS level at 10m for San Francisco Bay was approximately 168 dB re 1 Pa RMS. Therefore, NMFS has selected this average value as the most appropriate value for vibratory driving of 36-inch steel pipe piles during the proposed project. With regard to vibratory installation of timber piles, there are limited data available, and none from San Francisco Bay. Therefore, NMFS evaluated all available timber pile data (three projects from Puget Sound, WA, and one project from Norfolk, VA) (Greenbusch Group, 2018; Illingworth and Rodkin, 2017; Laughlin, 2011; U.S. Navy, 2016) and calculated the mean and maximum RMS values for each project and for all projects together. The overall mean RMS value was approximately 158 dB re 1 Pa RMS. NMFS therefore selected this as an appropriate proxy value for vibratory driving of timber piles during the proposed project.

TABLE 6—SOUND SOURCE LEVELS FOR PILE DRIVING ACTIVITIES [1]

Pile type	Method	Peak sound pressure (dB re 1 μPa)	RMS (dB re 1 μPa)	SEL (dB re 1 μPa2 sec)	Source
Hydroacoustic Data Collection					
18-inch composite/plastic	Impact Install	185	160	150	Caltrans, 2020; extrapolated from 13-inch composite.
18 inch composite/plastic	Vibratory Removal	N/A	152	N/A	WSDOT, 2012; 13-inch composite used as proxy.
Turbidity Curtain					
Steel H-Pile	Vibratory Install and Removal.	N/A	143	N/A	Caltrans, 2020.
Steel Shell Pile ≤24 inches	Vibratory Install and Removal.	N/A	153	N/A	Caltrans, 2020; 24-inch pipe pile used as proxy.
RWF Relocation					
24 inch steel shell	Vibratory Installation and Removal.	N/A	153	N/A	Caltrans, 2020.
24 inch steel shell	Impact Installation [2]	208	193	178	Illingworth & Rodkin, Inc. 2014.
36 inch steel shell	Vibratory Installation and Removal.	N/A	168	N/A	Gast & Associated Environmental Consultants, 2021, 2023; Illingworth and Rodkin, 2018, 2020. See explanation above.
Slope Stabilization					
14–16 inch Timber	Vibratory	N/A	158	N/A	Greenbusch Group, 2018; Illingworth and Rodkin, 2017; Laughlin, 2011; U.S. Navy 2016. See explanation above.
14–16 inch Timber	Impact	184	157	145	Caltrans, 2020.
14–16 in Composite	Vibratory	N/A	152	N/A	WSDOT, 2012. 13-inch composite used as proxy.
14–16 inch Composite	Impact	177	153	145	Caltrans, 2020.

[1] All values are at 10 m from the source.

[2] PG&E would use a bubble curtain attenuation system for impact pile driving of the RWF 24-inch steel shell piles, and we conservatively assumes a 5 dB reduction in source level from those presented here due to use of the attenuation system.

Level B Harassment Zones—Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition topography. The general formula for underwater TL is:

$TL = B * Log10 (R_1/R_2)$,

Where:

TL = transmission loss in dB;
B = transmission loss coefficient;
R_1 = the distance of the modeled SPL from the driven pile; and
R_2 = the distance from the driven pile of the initial measurement.

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, known as practical spreading. As is common practice in coastal waters, here we assume practical spreading (4.5 dB reduction in sound level for each doubling of distance) for all impact and vibratory installation and removal of piles with the exception of vibratory installation and removal of the 36-inch steel pipe piles in the RWF Relocation. Illingworth & Rodkin conducted hydro-acoustic monitoring for the 2017 WETA Downtown San Francisco Ferry Terminal Expansion Project and calculated a TL coefficient of 18.7 for vibratory installation of 36-inch steel shell piles (Illingworth & Rodkin, 2018). Given the proximity to the project area, PG&E determined that 18.7 was an appropriate transmission coefficient to use for the vibratory installation of the 36-inch steel shell pile, and NMFS concurs.

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as pile driving, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur PTS. Source levels are provided above in table 6. Inputs used in the optional User Spreadsheet tool are provided below in table 7. Resulting estimated Level A and B harassment isopleths are provided in table 8.

TABLE 7—USER SPREADSHEET INPUTS

[Source levels provided in Table 6]

Pile type	Method	Duration	Piles/day
Hydroacoustic Data Collection			
18-inch composite/plastic	Impact Install	400 strikes/pile	10
18 inch composite/plastic	Vibratory Removal	20 minutes	10
Turbidity Curtain			
Steel H-Pile	Vibratory	10 minutes	4
Steel Shell Pile ≤24 inches	Vibratory	10 minutes	4
RWF Relocation			
24 inch steel shell	Vibratory	10 minutes	4
24 inch steel shell	Impact	400 strikes/pile	4
36 inch steel shell	Vibratory	20 minutes	4
Sediment Pin Installation			
Timber	Vibratory	20 minutes	20
Timber	Impact	400 strikes/pile	20
14–16 inch Composite	Vibratory	20 minutes	10
14–16 inch Composite	Impact	400 strikes/pile	10

TABLE 8—LEVEL A HARASSMENT AND LEVEL B HARASSMENT ISOPLETHS FROM VIBRATORY AND IMPACT PILE DRIVING

Pile type & method	Level A/PTS isopleth (m)					Level B isopleth (m)	Level B area of ensonification (km²)
	Hearing groups						
	Cetaceans			Pinnipeds			
	LF	MF	HF	Phocids	Otariids		
Hydroacoustic Data Collection Piles							
18-inch composite (Impact)	16	<1	19	9	<1	10	<0.01
18-inch Composite (Vibratory)	4	<1	6	3	<1	1,360	3.58
Turbidity Curtain							
Steel H-Pile (Vibratory)	<1	0	<1	<1	<1	341	0.29

TABLE 8—LEVEL A HARASSMENT AND LEVEL B HARASSMENT ISOPLETHS FROM VIBRATORY AND IMPACT PILE DRIVING—Continued

Pile type & method	Level A/PTS isopleth (m)					Level B isopleth (m)	Level B area of ensonification (km^2)
	Hearing groups						
	Cetaceans			Pinnipeds			
	LF	MF	HF	Phocids	Otariids		
Steel Shell Pile ≤ 24 inches (Vibratory)	2	<1	4	2	<1	1,585	4.61
RWF Temporary Relocation Piles							
24-inch Steel Shell Pile (Vibratory)	2	<1	4	2	<1	1,585	4.54
24-inch Steel Shell Pile (Impact, Attenuated)*	294	11	351	158	12	736	1.06
36-inch Steel Shell Pile (Vibratory)	20	3	28	14	2	3,688	23.46
Sediment Pins							
14 to 16-inch Timber Pile (Vibratory)	16	2	23	10	1	3,415	19.17
14 to 16-inch Timber Pile (Impact)	12	<1	14	6	<1	6	<0.01
14 to 16-inch Composite Pile (Vibratory)	4	<1	6	3	<1	1,360	3.2
14 to 16-Inch Composite Pile (Impact)	7	<1	9	4	<1	3.4	<0.01

* 5 dB reduction in sound due to use of bubble curtain assumed.

Marine Mammal Occurrence

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which will inform the take calculations.

Because reliable marine mammal density information is not available for the San Francisco Bay, several datasets were used to attain estimates of the abundance of marine mammals in the Bay. Datasets used included 5 years of sighting and stranding data from The Marine Mammal Center (TMMC) (NMFS, 2021a); 5 years of sighting and stranding data from the California Academy of Sciences (CAS) (NMFS, 2021b); citizen-reported live sightings from *iNaturalist.org;* 5 days of sighting data during sediment investigation in 2020 during the initial phase of the project (Haase, 2021); and counts from haulouts. Data from all sources, when available, were considered. Depending on the distribution of sightings and granularity of data, different sources have been used to estimate the number of individuals of each species with the potential to occur in vicinity of the project. The largest ensonified area is during vibratory installation of 36-inch steel shell piles, which results in a 3,688 m isopleth and 23.46 km^2 area of ensonification.

Harbor Seal

Harbor seals in the Bay forage mainly within 7.0 mi (11.3 km) of their primary haulout site (Grigg *et al.* 2012), and often within just 1–3 miles (1–5 km) (Torok, 1994). The only harbor seal haulout within 7 miles (11.3 km) of the project site is YBI, which is 3.1 mi (5 km) to the east of the Project Area. Noise from the project is not expected to reach the haulout, however, harbor seals that use this haulout are likely to forage within ensonified areas from the project. Harbor seal take estimates were based on observations conducted by Marine Mammal Observers (MMOs) over a 5 day period in 2020, during sediment investigation in the initial phase of the project, within remedial response areas A, B, and C (See Haase, 2021). A maximum of 20 harbor seals were observed per day. PG&E therefore estimates 20 harbor seals per day within the project area per day. NMFS concurs with this assumption.

Northern Elephant Seal

TMMC recorded 903 elephant seals in the Bay from 2016 to 2021 (NMFS, 2021a). The CAS reported an additional 6 for a total of 909 over 5 years in the Bay from 2016 to 2021 (NMFS, 2021b), yielding an average of 0.5 elephant seals per day. To ensure sufficient authorization of take of northern elephant seals, PG&E assumed 0.5 elephant seals will occur in the area per day (*i.e.,* one elephant seal every 2 days). NMFS concurs with this assumption.

California Sea Lion

The Pier 39 K-Dock haulout is the only regularly used California Sea Lion haulout in the vicinity of the Project Area, adjacent to Area C. The Sea Lion Center at Pier 39 regularly counted the sea lions at K-Dock from 1991 through 2018. From 2016 through 2018, the yearly average ranged from 89 to 229 animals per day. The average per day over all 3 years was 191 sea lions (Pacific Gas & Electric, 2023). Although there are times of the year when the K-dock is unoccupied or there are few individuals present, it is difficult to predict abundance based on time of year. In order to ensure sufficient authorization of sea lions, PG&E is assuming a local abundance estimate of 191 sea lions per day within the estimated harassment area, and NMFS concurs.

Northern Fur Seal

TMMC recorded 44 northern fur seals in the Bay from 2016 to 2021 (NMFS, 2021a). CAS recorded an additional 3 for a total of 47 over 5 years (NMFS, 2021b), yielding 0.03 per day, or approximately 10 per year. In the fall and winter, northern fur seals occasionally strand on YBI and Treasure Island (Pacific Gas & Electric, 2023), approximately 2.0 mi (3.2 km) from the project area. Using PG&E's assumption of approximately 0.03 fur seals per day over the course of 50 days of pile driving plus known fur seal strandings near the project area, NMFS has determined it appropriate to assume five fur seals in the project area during the project time period.

Steller Sea Lion

Steller sea lions are rare in San Francisco Bay. TMMC recorded four Steller sea lions in the Bay from 2016 to 2021 (NMFS, 2021a), while CAS reported no Steller sea lions during this time (NMFS, 2021b). In 2020 and 2021, *INaturalist.org* recorded four Steller sea lions in the Bay. On rare occasions, Steller sea lions are seen on the Pier 39 K-dock haulout. An adult male was spotted there in May 2023 (Segura, 2023) and in previous years a single male Steller sea lion had been observed using the Pier 39 K-dock haulout intermittently during July and August and occasionally September (Pacific Gas & Electric, 2023). Given these known occasional occurrences of the Steller sea lion at Pier 39, PG&E feels it is appropriate to assume five Steller sea lions in the project area during the time period of the project, and NMFS concurs.

Bottlenose Dolphins

Historically, observations of bottlenose dolphins have occurred west of Treasure Island and were concentrated in the Project vicinity along the nearshore area of San Francisco south to Redwood City. Since 2016, one individual has been regularly seen near the former Alameda Air Station and five animals were regularly seen in the summer and fall of 2018 in the same location (Pacific Gas & Electric, 2023). A recent study reports that dolphins have been sighted in the vicinity of the Golden Gate Bridge, around Yerba Buena and Angel Islands, and in the central Bay (Keener *et al.,* 2023). PG&E is assuming that one group of bottlenose dolphins will enter into the project isopleth per month of pile driving, and NMFS concurs. A group size is estimated to be five animals based on sightings of bottlenose dolphins in the Bay (Pacific Gas & Electric, 2023).

Harbor Porpoise

Harbor porpoises are primarily seen near the Golden Gate Bridge, Marin County, and the city of San Francisco on the northwest side of the Bay (Keener *et al.,* 2012; Stern *et al.,* 2017), in the vicinity of the project area. Limited data exists on the abundance of harbor porpoises in the Bay, and therefore data from MMOs in 2020 was used (see Haase 2021). An individual harbor porpoise was seen in the project zone on 2 of the 5 days, and a group of two individuals was reported on a separate day of the 5 day observation period (Haase, 2021). To ensure sufficient authorization of take of harbor porpoise, it is estimated that two harbor porpoises will occur within the estimated harassment area per day.

Take Estimation

Here we describe how the information provided above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and proposed for authorization.

Take estimate calculations vary by species. To calculate take by Level B harassment for harbor seals, California sea lions, northern elephant seals, and harbor porpoises, NMFS multiplied the daily occurrence estimates described in the *Marine Mammal Occurrence* section by the number of project days (table 9).

For northern fur seals, PG&E is assuming a total of five animals in the area of the project during the duration of the project, based on sightings in the Bay and known strandings on YBI (see *Marine Mammal Occurrence* above), and is therefore requesting, and NMFS is proposing to authorize, take of five northern fur seals by Level B harassment (table 9).

Although Steller sea lions are rare in San Francisco Bay, based on sighting data and known occurrence of Steller sea lions on the Pier 39 K-dock haulout (PG&E, 2023; Segura, 2023), PG&E is conservatively requesting five takes by Level B harassment of Steller sea lions during the time period of the project, and NMFS concurs (table 9).

For bottlenose dolphins, PG&E estimates that one group of five bottlenose dolphins may be taken by Level B harassment per month of pile driving. Based on 5 months of pile driving, NMFS proposes to authorize 25 takes by Level B harassment of bottlenose dolphins.

TABLE9—ESTIMATED TAKE BY LEVEL B HARASSMENT PROPOSED FOR AUTHORIZATION AND ESTIMATED TAKE AS A PERCENTAGE OF THE POPULATION

Species	Stock	Expected occurrence	Estimated Level B take	Stock abundance *	Percent of stock
Pacific Harbor Seal	California	20 seals per day	1000	30,968	3.2
Northern Elephant Seal	California Breeding	0.5 seals per day	25	187,386	0.01
California Sea Lion	United States	191 sea lions per day	9,550	257,606	3.7
Northern Fur Seal	California; Eastern North Pacific.	5 seals over project duration.	5	14,050; 626,618	0.04; 0.001
Steller sea lion	Eastern United States	5 sea lions over project duration.	5	43,201	0.01
Bottlenose dolphin	Coastal California	5 dolphins per month of project.	25	453	5.5
Harbor Porpoise	San Francisco-Russian River.	2 porpoises per day	100	7,777	1.3

* NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports.*

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if

implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost and impact on operations.

PG&E must follow mitigation measures as specified below.

PG&E must ensure that construction supervisors and crews, the monitoring team, and relevant PG&E staff are trained prior to the start of all pile driving activities, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

Shutdown Zones

PG&E must establish shutdown zones and Level B monitoring zones for all pile driving activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine animal (or in anticipation of an animal entering the defined area). Shutdown zones are based on the largest Level A harassment zone for each pile size/type and driving method, and behavioral monitoring zones are meant to encompass Level B harassment zones for each pile size/type and driving method, as shown in table 8. A minimum shutdown zone of 10 m would be required for all in-water construction activities to avoid physical interaction with marine mammals, and the radii of the shutdown zones are rounded to the next largest 10 m interval in comparison to the Level zone for each activity type. Marine mammal monitoring will be conducted during all pile driving activities to ensure that marine mammals do not enter Level A shutdown zones, that marine mammal presence in the isopleth does not exceed authorized take, and to prevent take of the humpback and gray whale. Proposed shutdown zones for each activity type are shown in table 10.

Prior to pile driving, shutdown zones and monitoring zones will be established based on zones represented in table 10. Observers will survey the shutdown zones for at least 30 minutes before pile driving activities start. If marine mammals are found within the shutdown zone, pile driving will be delayed until the animal has moved out of the shutdown zone, either verified by an observer or by waiting until 15 minutes has elapsed without a sighting. If a marine mammal approaches or enters the shutdown zone during pile driving, the activity will be halted. Pile driving may resume after the animal has moved out of and is moving away from the shutdown zone or after at least 15 minutes has passed since the last observation of the animal.

All marine mammals would be monitored in the Level B harassment zones and throughout the area as far as visual monitoring can take place. If a marine mammal enters the Level B harassment zone, in-water activities would continue and PSOs would document the animal's presence within the estimated harassment zone.

If a species for which authorization has not been granted (*i.e.,* gray whale or humpback whale), or a species which has been granted but the authorized takes are met, is observed approaching or within the Level B monitoring zone, pile driving activities will be shutdown immediately. Activities will not resume until the animal has been confirmed to have left the area or 15 minutes has elapsed with no sighting of the animal.

TABLE 10—SHUTDOWN ZONES AND LEVEL B MONITORING ZONES BY ACTIVITY

Pile type and method	Shutdown zone for all species (m)	Monitoring zone (m)
Hydroacoustic Data Collection Piles:		
18-inch Composite/Plastic (impact)	20	10
18-Inch Composite/Plastic (vibratory removal)	10	1,360
Turbidity Curtain:		
Steel H-Pile (Vibratory Install and Removal)	10	341
24-inch steel shell pile (Vibratory install and removal)	10	1,585
RWF Relocation Piles:		
24-inch steel shell pile (Vibratory install and removal)	10	1,585
24-inch steel shell pile (impact-attenuated)	360	736
36-inch steel shell pile (vibratory)	30	3,688
Sediment Pins:		
14–16 inch timber (Vibratory)	30	3,415
14–16 inch timber (impact)	20	10
14–16 inch composite (impact)	10	10
14–16 inch composite (vibratory install)	20	1,360

Protected Species Observers

The placement of PSOs during all pile driving activities (described in the Proposed Monitoring and Reporting section) would ensure that the entire shutdown zone is visible. Should environmental conditions deteriorate such that the entire shutdown zone would not be visible (*e.g.,* fog, heavy rain), pile driving would be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.

PSOs would monitor the full shutdown zones and as much of the Level B harassment zones as possible. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the shutdown zone.

Pre- and Post-Activity Monitoring

Monitoring must take place from 30 minutes prior to initiation of pile driving activities (*i.e.,* pre-clearance monitoring) through 30 minutes post-completion of pile driving. Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs would observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone would be considered cleared when a marine mammal has not been observed within the zone for a 30-minute period. If a marine mammal is observed within the shutdown zones, pile driving activity would be delayed or halted. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones would commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.,* the entire shutdown zone and surrounding waters must be visible to the naked eye).

Soft-Start Procedures

Soft-start procedures are used to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors would be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. Soft start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

Bubble Curtain

A bubble curtain must be employed during all impact pile installation of steel piles less than 24 inches in diameter to interrupt the acoustic pressure and reduce impact on marine mammals. Impact pile driving will not be allowed for 36-inch steel shell piles. The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring. The weights attached to the bottom ring must ensure 100 percent substrate contact. No parts of the ring or other objects may prevent full substrate contact. Air flow to the bubblers must be balanced around the circumference of the pile.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,
- Mitigation and monitoring effectiveness.

Visual Monitoring

Marine mammal monitoring must be conducted in accordance with the conditions in this section and the IHA. Marine mammal monitoring during pile driving activities would be conducted by PSO's meeting NMFS' standards and in a manner consistent with the following:

- PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods;
- At least one PSO would have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
- Other PSOs may substitute education (degree in biological science or related field) or training for experience.
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator would be designated. The lead observer would be required to have prior experience working as a marine mammal observer during construction.
- PSOs will submit PSO resumes for approval by NMFS 30 days prior to the onset of pile driving.
- PSOs must be approved by NMFS prior to beginning any activity subject to the IHA.

PSOs should have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

PG&E would have between one and three PSOs on site at all times during pile driving activities. One PSO would be designated as the Lead PSO and would receive updates from other PSOs. The Lead PSO would be stationed at the active pile driving rig or at the best vantage point practicable to monitor the shutdown zones and implement shutdown and delay procedures. The other PSOs would be stationed at the best vantage points practicable to observe the monitoring zones. Exact locations would be determined in the field based on the pile driving site, field conditions, and in coordination with contractors, but may include docks, barges, and tower structures. PSOs would be equipped with high quality binoculars or spotting scopes for monitoring and radios and cell phones for maintaining contact with other observers and work crew. Monitoring would be conducted 30 minutes before, during, and 30 minutes after all in-water construction activities. PSOs would record all incidents of marine mammal occurrence, regardless of distance from activity, and would document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

Data Collection

PSOs would use approved data forms to record the following information:

- Dates and times (beginning and end) of all marine mammal monitoring.
- PSO locations during marine mammal monitoring.
- Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.,* impact or vibratory).
- Weather parameters and water conditions.
- The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting.
- Distance and bearings of each marine mammal observed to the pile being driven or removed.
- Description of marine mammal behavior patterns, including direction of travel.
- Age and sex class, if possible, of all marine mammals observed.
- Detailed information about implementation of any mitigation triggered (such as shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal if any.

Reporting

PG&E must submit a draft marine mammal monitoring report to NMFS within 90 days after the completion of pile driving activities, or 60 days prior to the requested issuance of any future IHAs for the project, or other projects at the same location, whichever comes first. A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final. The marine mammal report would include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets and/or raw sighting data. Specifically, the report would include:

- Dates and times (beginning and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period including: (a) the number and types of piles driven and the method; and (b) total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving).
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
- For each observation of a marine mammal the following must be recorded: (a) Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting; (b) time of sighting; (c) identification of the animal(s) (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species; (d) distance and location of each observed marine mammal relative to pile being driven or removed for each sighting; (e) estimated number of animals (min/max/best estimate); (f) estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*); (g) animal's closest point of approach and estimated time spent within the harassment zone; (h) description of any marine mammal behavioral observations (*e.g.,* observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.,* no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Number of marine mammals detected within the harassment zones, by species; and
- Detailed information about implementation of any mitigation (*e.g.,* shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, PG&E would report the incident to the Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov*), NMFS and to the West Coast regional stranding network (866–767–6114) as soon as feasible. If the death or injury was clearly caused by the specified activity, PG&E would immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHAs. PG&E would not resume their activities until notified by NMFS. The report would include the following:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.,* intensity, duration), the context of any impacts or responses (*e.g.,* critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.,* as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to all the species listed in table 3, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity.

Level A harassment is extremely unlikely given the small size of the Level A harassment isopleths and the required mitigation measures designed to minimize the possibility of injury to marine mammals. No serious injury or mortality is anticipated given the nature of the activity.

Pile driving activities have the potential to disturb or displace marine mammals. Specifically, the project activities may result in take, in the form of Level B harassment from underwater sounds generated from impact and vibratory pile driving activities. Potential takes could occur if individuals move into the ensonified zones when these activities are underway.

The takes by Level B harassment would be due to potential behavioral disturbances. The potential for harassment is minimized through construction methods and the implementation of planned mitigation strategies (see Proposed Mitigation section).

Behavioral responses of marine mammals to pile driving at the project site, if any, are expected to be mild and temporary. Marine mammals within the Level B harassment zone may not show any visual cues they are disturbed by activities or could become alert, avoid the area, leave the area, or display other mild responses that are not observable such as changes in vocalization patterns. Given the short duration of noise-generating activities per day and that pile driving and removal would occur over approximately 50 days during a span of 5 months, any harassment would be temporary. There are no other areas or times of known biological importance for any of the affected species.

Take would occur within a limited, confined area of each stock's range. Further, the amount of take authorized is extremely small when compared to stock abundance.

No marine mammal stocks for which incidental take authorization are listed as threatened or endangered under the ESA. Only one stock, the Eastern North Pacific Stock of the northern fur seal, is listed as depleted under the MMPA. However, we do not expect the proposed authorizations in this action to affect the stock. No injury or mortality is proposed for authorization, take by Level B harassment is limited (five takes over the duration of the project), and the proposed action should have no effect on the reproduction of this species. In addition, the five authorized takes for the northern fur seal include both the depleted Eastern North Pacific Stock and the California stock, which is not depleted.

The relatively low marine mammal occurrences in the area, shutdown zones, and planned monitoring make injury takes of marine mammals unlikely. The shutdown zones would be thoroughly monitored before the pile driving activities begin, and activities would be postponed if a marine mammal is sighted within the shutdown zone. There is a high likelihood that marine mammals would be detected by trained observers under environmental conditions described for the project. Limiting construction activities to daylight hours would also increase detectability of marine mammals in the area. Therefore, the mitigation and monitoring measures are expected to eliminate the potential for injury and Level A harassment as well as reduce the amount and intensity of Level B behavioral harassment. Furthermore, the pile driving activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations which have occurred with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment.

The project is not expected to have significant adverse effects on marine mammal habitat. There are no known Biologically Important Areas (BIAs) or ESA-designated critical habitat within the project area, and the activities would not permanently modify existing marine mammal habitat.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury, mortality, or Level A harassment is anticipated or proposed for authorization.
- The specified activities and associated ensonified areas are very small relative to the overall habitat ranges of all species;
- The project area does not overlap known BIAs or ESA-designated critical habitat;
- The lack of anticipated significant or long-term effects or marine mammal habitat; and
- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS has authorized is below one-third of the estimated stock abundances for stocks (See table 9). These are all likely conservative estimates because they assume all takes are of different individual animals which is likely not the case. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds that small numbers of marine mammals would be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is proposed for authorization or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to Pacific Gas & Electric for conducting pile driving activities in San Francisco Bay from April 1, 2024 to March 31, 2025, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.*

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any other aspect of this notice of proposed IHA for the proposed construction project. We also request comment on the potential renewal of this proposed IHA as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform decisions on the request for this IHA or a subsequent renewal IHA.

On a case-by-case basis, NMFS may issue a one-time, 1-year renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly identical activities as described in the Description of Proposed Activity section of this notice is planned or (2) the activities as described in the Description of Proposed Activity section of this notice would not be completed by the time the IHA expires and a renewal would allow for completion of the activities beyond that described in the *Dates and Duration* section of this notice, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to the needed renewal IHA effective date (recognizing that the renewal IHA expiration date cannot extend beyond 1 year from expiration of the initial IHA).
- The request for renewal must include the following:

(1) An explanation that the activities to be conducted under the requested renewal IHA are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.,* reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take).

(2) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: November 20, 2023.

Catherine Marzin,

Acting Director, Office of Protected Resources, National Marine Fisheries Service.

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DEPARTMENT OF DEFENSE

Department of the Army

Performance Review Board Membership

AGENCY: Department of the Army, DoD.

ACTION: Notice.

SUMMARY: Notice is given of the names of members of a Performance Review Board for the Department of the Army.

DATES: Applicable November 13, 2023.

FOR FURTHER INFORMATION CONTACT: Barbara Smith, Civilian Senior Leader Management Office, 111 Army Pentagon, Washington, DC 20310–0111, email: *Barbara.M.Smith.civ@army.mil* or phone: (703) 693–1126.

SUPPLEMENTARY INFORMATION: Section 4314(c)(1) through (5) of title 5, U.S.C., requires each agency to establish, in accordance with regulations, one or more Senior Executive Service performance review boards. The boards shall review and evaluate the initial appraisal of senior executives' performance by supervisors and make recommendations to the appointing authority or rating official relative to the performance of these executives.

The Department of the Army Performance Review Board will be composed of a subset of the following individuals:

1. Ms. Elizabeth J Ahlersmeyer O'Kane, Senior Security Advisor, Office of the Deputy Chief of Staff, G–2
2. Dr. Christine T Altendorf, Director of Military Programs, Military Programs, U.S. Army Corps of Engineers
3. Mr. Stephen D Austin, Assistant Chief of the Army Reserve, Office of the Chief of the Army Reserve
4. Mr. Mark F Averill, Administrative Assistant to the Secretary of the Army, Office of the Administrative Assistant to the Secretary of the Army
5. Mr. Young J Bang, Principal Deputy Assistant Secretary of the Army (Acquisitions, Logistics and Technology), Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology)
6. LTG Maria B Barrett, Commanding General, U.S. Army Cyber Command
7. Mr. Stephen G Barth, Deputy Chief of Staff, G–8, U.S. Army Training and Doctrine Command
8. Mr. Peter Bechtel, Deputy G–3/5/7, Deputy Chief of Staff, G–3/5/7
9. BG Christine A Beeler, Commanding General, U.S. Army Contracting Command, U.S. Army Materiel Command
10. Ms. Pamela I Blechinger, Director, The Research and Analysis Center, The Research and Analysis Center, U.S. Army Futures Command
11. Ms. Yvette K W Bourcicot, Principal Deputy Assistant Secretary of the Army (Manpower and Reserve Affairs), Office of the Assistant Secretary of the Army (Manpower and Reserve Affairs)
12. Mr. John M Bradsher, Director, Operations and Integration, Office of the Deputy Chief of Staff, G–2