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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 218

[Docket No. 191202-0097]

RIN 0648-BH28

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to U.S. Navy Construction Activities at Naval Weapons Station Seal Beach, California

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

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS has received a request from the U.S. Navy (Navy) for authorization to take marine mammals over the course of five years (2020-2025) incidental to conducting construction activities related to development of a new ammunition pier at Seal Beach, California. As required by the Marine Mammal Protection Act (MMPA), NMFS is proposing regulations to govern that take, and requests comments on the proposed regulations. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and will summarize and respond to such comments in the final notice of our decision.

DATES: Comments and information must be received no later than [*insert date 30 days after date of publication in the FEDERAL REGISTER*].

ADDRESSES: You may submit comments on this document, identified by NOAA-NMFS-2019-0131, by either of the following methods:

- Electronic submission: Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2019-0131*, click the "Comment Now!" icon, complete the required fields, and enter or attach your comments.

- Mail: Submit written comments to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East West Highway, Silver Spring, MD 20910.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.*, name, address), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous).

FOR FURTHER INFORMATION CONTACT: Ben Laws, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Availability

A copy of the Navy's application and any supporting documents, as well as a list of the references cited in this document, may be obtained online at: *www.fisheries.noaa.gov/action/incidental-take-authorization-us-navy-construction-ammunition-pier-and-turning-basin-naval*. In case of problems accessing these documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

Purpose and Need for Regulatory Action

We received an application from the Navy requesting five-year regulations and authorization to take multiple species of marine mammals. This proposed rule would establish a framework under the authority of the MMPA (16 U.S.C. 1361 *et seq.*) to allow for the authorization of take by Level B harassment of marine mammals incidental to the Navy's construction activities related to development of a new ammunition pier at Seal Beach, California, including impact and vibratory pile driving. Please see "Background" below for definitions of harassment.

Legal Authority for the Proposed Action

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1371(a)(5)(A)) directs the Secretary of Commerce 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 for up to five years if, after notice and public comment, the agency makes certain findings and issues regulations that set forth permissible methods of taking pursuant to that activity and other means of effecting the "least practicable adverse impact" on the affected species or stocks and their habitat (see the discussion below in the "Proposed Mitigation" section), as well as monitoring and reporting requirements. Section 101(a)(5)(A) of the MMPA and the implementing regulations at 50 CFR part 216, subpart I provide the legal basis for issuing this proposed rule containing five-year regulations, and for any subsequent LOAs. As directed by this legal authority, this proposed rule contains mitigation, monitoring, and reporting requirements.

Summary of Major Provisions within the Proposed Rule

Following is a summary of the major provisions of this proposed rule regarding Navy construction activities. These measures include:

- Required monitoring of the construction areas to detect the presence of marine mammals before beginning construction activities.
- Shutdown of construction activities under certain circumstances to avoid injury of marine mammals.
- Soft start for impact pile driving to allow marine mammals the opportunity to leave the area prior to beginning impact pile driving at full power.

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 issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be 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 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 evaluate our proposed action (*i.e.*, the promulgation of regulations and subsequent issuance of incidental take authorization) and alternatives with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 of the Companion Manual for NAO 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 proposed action qualifies to be categorically excluded from further NEPA review.

Information in the Navy's application and this notice collectively provide the environmental information related to proposed issuance of these regulations and subsequent incidental take authorization for public review and comment. We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the request for incidental take authorization.

Summary of Request

On September 10, 2019, we received an adequate and complete request from the Navy requesting authorization for take of marine mammals incidental to construction activities related

to development of a new ammunition pier at Seal Beach, California. On September 17, 2019 (84 FR 48914), we published a notice of receipt of the Navy's application in the **Federal Register**, requesting comments and information related to the request for 30 days. Our consideration of the Navy's request was informed by review by the Marine Mammal Commission, and the Navy submitted a revised, final version of the application on November 26, 2019. No formal comments were received during the public review period.

The Navy proposes to conduct construction necessary for development of a new ammunition pier at Naval Weapons Station (NWS) Seal Beach, California. Construction activities include construction of a new pile-supported pier, construction of a new breakwater and causeway, dredging of the turning basin and creation of a new navigation channel for public access, installation of new moorings and pile-supported mooring dolphins, and demolition of existing facilities. Among other activities, construction would include use of impact and vibratory pile driving, including installation and removal of steel, concrete, and timber piles. Hereafter (unless otherwise specified or detailed) we use the term "pile driving" to refer to both pile installation and pile removal. The use of both vibratory and impact pile driving is expected to produce underwater sound at levels that have the potential to result in harassment of marine mammals.

The Navy requests authorization to take individuals of five species by Level B harassment. The proposed regulations would be valid for five years (2020-2025).

Description of the Specified Activity

Overview

NWS Seal Beach is the U.S. Pacific Fleet's primary weapons station on the West Coast of the United States. As such, NWS Seal Beach has three primary missions: storage of Navy and

Marine Corps ammunition, missile systems maintenance, and loading and unloading of Navy warships and larger Coast Guard vessels. The existing wharf at NWS Seal Beach is past its design life—over 65 years old—and was constructed prior to the introduction of modern seismic codes. Seismic design deficiencies are of significant concern due to the proximity to active faults and high liquefaction potential of underlying soils. The current condition and configuration of the existing pier and turning basin limits the size and number of ships that can be loaded and unloaded with ammunition at the same time and presents safety and security concerns due to the proximity of naval munitions operations to civilian small boat traffic and the Pacific Coast Highway. Therefore, the proposed construction activities are necessary to sustain and enhance mission capability by eliminating deficiencies associated with the condition, configuration, and capacity of the existing pier and turning basin.

In-water pile driving work is expected to require approximately three years, but could occur at any time during the five-year period of validity of these proposed regulations. The Navy estimates installing approximately 900 primarily concrete piles in total in order to construct the new pier. Construction will include use of impact and vibratory pile driving. Aspects of construction activities other than pile driving are not anticipated to have the potential to result in incidental take of marine mammals because they are either above water or do not produce levels of underwater sound with likely potential to result in marine mammal disturbance.

Dates and Duration

The proposed regulations would be valid for a period of five years (2020-2025). The specified activities may occur at any time during the five-year period of validity of the proposed regulations. Pile driving activity would be completed over an approximately three-year period

that is not necessarily consecutive during the five-year period of validity of these proposed regulations.

Pile driving would typically occur only from Monday through Friday during typical working hours (*i.e.*, during daylight hours). Estimated days of pile driving are based on a conservative production rate of approximately three piles per day for installation of 922 piles, *i.e.*, 308 days. An additional 28 days is assumed for removal of piles. Therefore, the estimated number of total pile driving days is approximately 336 over the five-year period. These totals include both extraction and installation of piles, and represent a conservative estimate of pile driving days. In a real construction situation, pile driving production rates would be maximized when possible and actual daily production rates may be higher, resulting in fewer actual pile driving days.

Specified Geographical Region

Construction activities at NWS Seal Beach will be located within Orange County, California, adjacent to the Port of Long Beach. The City of Seal Beach is situated between the Cities of Long Beach to the west and Huntington Beach to the east (see Figure 1-1 in the Navy's application). The specific site of the proposed construction activities is within Anaheim Bay, a small harbor that is completely enclosed by two jetties and land, aside from a narrow entrance channel (see Figure 1-2 of the Navy's application). Depth within Anaheim Bay, which is maintained through dredging, is approximately 10 meters, and the substrate is composed of soft sand and mud alluvial sediments. The jetty-enclosed entrance channel extends 1.3 km from the existing pier location to the approximately 200-m opening between the jetties.

The Anaheim Bay entrance is located approximately 5 miles (8 km) from the Ports of Los Angeles/Long Beach, which together form one of the busiest container ports in the world.

Numerous associated ship anchorages are arrayed in the vicinity. In 2016 there were 4,277 ship port visits with over 8,400 ship transits of these nearshore waters (U.S. Army Corps of Engineers, 2017). Associated with these port visits and transits, pilot vessels and tug boats are also active in the vicinity of the port. Immediately adjacent to the Anaheim Bay entrance are entrances to the Huntington Beach and Alamitos/Long Beach marinas, which together have more than 2,000 boat slips. Finally, an offshore petroleum extraction platform is located approximately 1.4 km offshore from the Anaheim Bay entrance. Therefore, it may reasonably be assumed that the Anaheim Bay entrance is situated in an environment of substantial anthropogenic noise.

Also of note regarding the environment of Anaheim Bay, the first phase of this proposed project, which would be completed prior to beginning in-water pile driving work, includes construction of a breakwater perpendicular to the Anaheim Bay entrance channel. Therefore, acoustic footprints associated with subsequent in-water construction activities occurring shoreward of the breakwater would be physically limited to Anaheim Bay (see Figures 1-3 and 6-4 of the Navy's application).

Detailed Description of Activities

As described above, the Navy has requested incidental take regulations for construction activities associated with development of a new ammunition pier at NWS Seal Beach, California. The entire project would include potential upgrades to the existing wharf to remain operational while the new pier is being built, the construction of a breakwater to reduce wave heights at the pier, a causeway, pile-supported mooring dolphins, a navigation channel for public boat access into and out of Huntington Harbor, dredging for the pier and Navy ship turning basin, and operational support buildings on and near the pier. Aspects of construction activities other than pile driving are not anticipated to have the potential to result in incidental take of marine

mammals because they are either above water or do not produce levels of underwater sound with likely potential to result in marine mammal disturbance.

The project would be completed in two different phases. As noted above, the first phase would include construction of a breakwater perpendicular to the entrance channel. Subsequent elements of the first phase would consist of potential upgrades to the existing wharf to allow for continued operation while the new pier is under construction, dredging of the turning basin and navigation channel for public access, removal of existing navigation aids, fill of mitigation areas, partial fill of the causeway, creation of a breakwater and jetties for the navigation channel for public access, relocation of barge mooring buoys, installation of a new floating security barrier, placement of new Navy navigation buoys, and implementation of an indicator pile program to determine feasibility of concrete piles. Partial construction of the new ammunition pier with concrete pile supports may begin during the first phase. The second phase of the project would consist of fill to expand the east mole for the truck turnaround, completion of causeway fill, installation of remaining pier structural and support piles, construction of the new pier and fender system, construction of waterfront facilities, installation of utilities, and demolition of the wharf primary fendering system. (For full details of the project, please see the Navy's application, including the schematic diagram provided as Figure 1-2.)

In-water pile driving activities with the potential to cause take of marine mammals include removal of existing navigation piles, installation of mooring anchors, and installation of piles required for the new ammunition pier. Only pile extraction and installation using vibratory and impact pile drivers is expected to have the potential to result in incidental take of marine mammals. Therefore, only vibratory and impact pile driving are carried forward for further analysis.

Vibratory hammers, which can be used to either install or extract a pile, contain a system of counter-rotating eccentric weights powered by hydraulic motors, and are designed in such a way that horizontal vibrations cancel out, while vertical vibrations are transmitted into the pile. The pile driving machine is lifted and positioned over the pile by means of an excavator or crane, and is fastened to the pile by a clamp and/or bolts. The vibrations produced cause liquefaction of the substrate surrounding the pile, enabling the pile to be extracted or driven into the ground using the weight of the pile plus the hammer. Impact hammers use a rising and falling piston to repeatedly strike a pile and drive it into the ground. Impact or vibratory pile driving could occur on any day, but would not occur simultaneously.

Please see Table 1-1 of the Navy's application for a summary of piles to be installed and/or removed. The navigation piles that currently guide public vessel traffic, consisting of two timber pile clusters (dolphins) of approximately 8 to 10 piles each plus three additional single steel pipe piles, would be removed. All piles are approximately 24-in (61-cm) diameter. Timber piles are likely to be removed by cutting at the mudline, while the three steel piles would be extracted using the vibratory driver. However, it is possible that some timber piles may need to be removed using vibratory extraction. Therefore, we assume for purposes of analysis that all piles will be removed using vibratory extraction.

The planned indicator pile program would involve impact driving 17 24-in octagonal concrete piles in order to verify the driving conditions and establish the final driving lengths prior to fabrication of the final production piles that would be used to construct the new pier.

The new pier itself would be pile-supported with a total of approximately 900 piles (concrete and concrete-filled fiberglass) of various sizes connected to a cast- in- place concrete deck and beams. The majority of these production piles are expected to be jetted to within 1.5-3

m of tip elevation and then completed via impact driving. Piles are expected to largely be 24-in octagonal or square.

There will be a total of five new moorings installed, with two of those moorings outside of the new breakwater. Use of a vibratory hammer is required to install "plate anchors" that provide permanent secure holdings for planned mooring buoys. Plate anchors consist of a steel plate that is driven to project depth (9-12 m) beneath the seafloor. The anchor is driven by use of a 12-in (30-cm) steel beam called a "follower." The follower is slotted on the bottom, fits into the plate anchor, and together the assembly consisting of the plate anchor and follower are driven into the substrate. Once the assembly has been driven to the required depth using a combination of impact and vibratory driving, the follower is removed using vibratory extraction, leaving the plate anchor at the required depth. First, the plate anchor is driven with a vibratory hammer to within several feet of final depth (maximum driving time approximately 45 minutes). An impact hammer is then used to drive the plate anchor to final elevation (potentially requiring up to an additional 45 minutes). Finally, the follower is extracted using a vibratory hammer (up to a maximum of 30 minutes).

We assume that potential impacts of the specified activity on marine mammals will be limited to the area within the largely enclosed Anaheim Bay. As detailed later in "Estimated Take," impact driving of concrete piles is expected to produce relatively small ensonified areas that would not extend beyond the entrance to Anaheim Bay under any circumstances. However, limited vibratory driving is anticipated. As noted above, the first component of project activity will be construction of a breakwater parallel to the Anaheim Bay entrance. Noise produced through subsequent pile driving activities conducted shoreward of the breakwater will therefore be shielded from potentially extending beyond the entrance to Anaheim Bay. All pile driving

activity would be conducted shoreward of the new breakwater, aside from installation of the two aforementioned mooring anchors. Regarding this component of project activity, associated vibratory driving would nominally have a Level B harassment zone that would extend in a narrow strip through the jetty opening that forms the entrance to Anaheim Bay. However, we have determined that any potential sound that does escape the Anaheim Bay entrance should not reasonably be anticipated to result in harassment of marine mammals.

Primarily, and as detailed above, the environment surrounding the entrance to Anaheim Bay is extremely busy in terms of commercial shipping and other anthropogenic activities. The continuous noise produced through use of the vibratory hammer would not likely be sufficiently distinguishable from other ongoing noise sources that are part of the environmental baseline as to expect marine mammals to exhibit responses of a degree sufficient to rise to the level of a take. Additional contributing factors include the distance from the source to the Anaheim Bay entrance, the limited footprint of ensonification that could potentially exit that entrance, and the limited duration of activity (*i.e.*, less than two hours per day for two days).

Description of Marine Mammals in the Area of the Specified Activity

We have reviewed the Navy's species descriptions—which summarize available information regarding status and trends, distribution and habitat preferences, behavior and life history, and auditory capabilities of the potentially affected species—for accuracy and completeness and refer the reader to Sections 3 and 4 of the Navy's application, instead of reprinting the information here. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SAR; *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's website (*www.fisheries.noaa.gov/find-species*).

Table 1 lists all species with expected potential for occurrence in the specified geographical region where the Navy proposes to conduct the specified activities 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. For taxonomy, we follow Committee on Taxonomy (2019). PBR, 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, is considered in concert with known sources of ongoing anthropogenic mortality (as described in NMFS's SARs).

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's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. All managed stocks in the specified geographical regions are assessed in NMFS's U.S. Pacific SARs. All values presented in Table 1 are the most recent available at the time of writing and are available in the 2018 SARs.

Five species (with six managed stocks) are considered to have the potential to be affected by Navy activities. A significantly more diverse marine mammal fauna occurs in deeper offshore waters of the specified geographical region. However, these additional species have not been observed in the vicinity of the action area and, for reasons described previously, are not anticipated to potentially be affected by the specified activity. For additional detail, please see

section 3 of the Navy's application. We note that one additional species—the Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)—has been observed in the vicinity of the entrance to Anaheim Bay. However, authorization of take for this species was not requested by the Navy due to their seasonal and generally rare occurrence in the area. In addition, the sea otter (*Enhydra lutris*) is found in California coastal waters. However, sea otters are managed by the U.S. Fish and Wildlife Service and are not considered further in this document.

Table 1 – Marine Mammals Potentially Affected By Navy Construction Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	*Eschrichtius robustus*	Eastern North Pacific	-; N	26,960 (0.05; 25,849; 2016)	801	139
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Common bottlenose dolphin	*Tursiops truncatus truncatus*	California Coastal	-; N	453 (0.06; 346; 2011)	2.7	≥2.0
ENP long-beaked common dolphin	*Delphinus delphis bairdii*	California	-; N	101,305 (0.49; 68,432; 2014)	657	≥35.4
Common dolphin	*D. d. delphis*	CA/OR/WA	-; N	969,861 (0.17; 839,325; 2014)	8,393	≥40
Order Carnivora – Superfamily 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
Family Phocidae (earless seals)						
Harbor seal	*Phoca vitulina richardii*	California	-; N	30,968 (n/a; 27,348; 2012)	1,641	43

[1]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.

[2]NMFS marine mammal stock assessment reports at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable. For certain stocks of pinnipeds, abundance estimates are based upon observations of animals (often pups) ashore multiplied by some correction factor derived from knowledge of the species' (or similar species') life history to arrive at a best abundance estimate; therefore, there is no associated CV. In these cases, the minimum abundance may represent actual counts of all animals ashore.

[3]These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, subsistence hunting, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value. All M/SI values are as presented in the 2018 SARs.

Marine mammals do not regularly use Anaheim Bay for any purpose, and there is no known habitat of any importance (including pinniped haul-outs) located within Anaheim Bay. The Navy has conducted a semi-regular monitoring effort within Anaheim Bay over the past several years. This monitoring effort is the primary source of information regarding marine mammal occurrence therein. Monthly shore-based observations were conducted for marine mammals in Anaheim Bay for 12 months beginning in August 2016. Monitoring was conducted by two observers continuously scanning the bay with both the naked eye and handheld binoculars from two fixed positions. The observation positions allowed for clear visibility of the entirety of Anaheim Bay. The observers covered daylight hours from 7:30 to 4:30 over a one- or two-day period with the goal to survey a full 8 hours of observations each month. A total of approximately 72 observation hours were ultimately conducted. This effort and the resulting observations are detailed in a Navy report (Bredvik *et al*., 2017). Subsequently, consultants were retained to provide environmental monitoring services during a dredging project, including conducting an observational effort for marine mammals. This effort included daily monitoring during dredging effort from March through June of 2019 (Merkel and Associates, Inc., 2019). The observational data cited below include some records of animals occurring in waters outside the Anaheim Bay entrance.

The California sea lion is the most commonly observed marine mammal species within Anaheim Bay and the nearby Seal Beach National Wildlife Refuge. This species was sighted at least once in Anaheim Bay during almost every survey in the 2016-2017 effort, with all sightings of the species in water. Subsequent monitoring associated with dredging also routinely encountered California sea lions within Anaheim Bay. During Navy monitoring, California sea

lions were observed on 25 occasions, with all but one sighting of a lone individual. The exception was a single observation of three sea lions. During dredging monitoring, California sea lions were observed on 67 occasions, typically one or two individuals per occasion but with a maximum observed group of six. Individual sea lions may occasionally haul out on the rock jetties or other areas, but have not been observed hauling out frequently and there are no known haul-outs or areas of congregation.

Harbor seals are more rarely observed in Anaheim Bay. During a 2016-2017 survey effort, individual harbor seals were observed on four occasions, and monitoring associated with dredging encountered individual harbor seals on three occasions. Harbor seals have rarely been observed hauled out, but there are no regular haul-out sites in Anaheim Bay.

Bottlenose dolphins are generally considered to be the second-most commonly observed species in Anaheim Bay, having been sighted several times within Anaheim Bay as well as at the Seal Beach National Wildlife Refuge. During Navy monitoring, pairs of bottlenose dolphins were sighted on four occasions. Bottlenose dolphins were observed during dredging monitoring on 17 occasions, with groups ranging from two to ten animals.

There are two stocks of common dolphin present in California waters, with the two generally indistinguishable. Therefore, observations of common dolphins are not attributed to stock, and we propose to authorize take of common dolphins generically. This take is analyzed as though it may entirely be attributed to both stocks as a worst-case scenario. Common dolphins were frequently observed during monitoring effort but more commonly observed in waters of outer Anaheim Bay or adjacent to the Anaheim Bay entrance. Navy monitoring reported a single occurrence of a pair of common dolphins. However, common dolphins were observed on 31 occasions during dredging monitoring, with groups ranging from two to nine animals.

Gray whales migrate along the Pacific coast twice a year between October and July and would only potentially be present in the region while migrating. Gray whales are not generally expected to occur in Anaheim Bay. However, individual gray whales were observed on four occasions during dredging monitoring, with one of these sightings reported inside Anaheim Bay. As a precaution, the Navy has requested authorization of take for this species.

Unusual Mortality Events (UME)

A UME is defined under the MMPA as "a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response." Currently ongoing investigations along the west coast involving species at issue in these proposed regulations include gray whales and California sea lions.

Since January 1, 2019, elevated gray whale strandings have occurred along the west coast of North America from Mexico through Alaska. As of September 30, 2019, 212 gray whale strandings have been confirmed, with 121 of these in the United States and 34 in California. Several dead whales have been emaciated with moderate to heavy whale lice (cyamid) loads. Necropsies have been conducted on a subset of whales with additional findings of vessel strike in three whales and entanglement in one whale. In Mexico, 50-55 percent of the free-ranging whales observed in the lagoons this winter were reported as "skinny" compared to the annual average of 10-12 percent "skinny" whales normally seen. Necropsy findings of emaciation are not consistent across all of the whales examined, so more research is needed. Please see *www.fisheries.noaa.gov/national/marine-life-distress/2019-gray-whale-unusual-mortality-event-along-west-coast* for more information.

Beginning in January 2013 and continuing through 2016, elevated strandings of California sea lion pups were observed in southern California, with live sea lion strandings

nearly three times higher than the historical average in 2015. Findings to date indicate that a change in the availability of sea lion prey, especially sardines, a high value food source for nursing mothers, is a likely contributor to the large number of strandings. Sardine spawning grounds shifted further offshore in 2012 and 2013, and while other prey were available (market squid and rockfish), these may not have provided adequate nutrition in the milk of sea lion mothers supporting pups, or for newly-weaned pups foraging on their own. This UME remains under investigation. Please see *www.fisheries.noaa.gov/national/marine-life-distress/2013-2017-california-sea-lion-unusual-mortality-event-california* for more information.

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. Current data indicate that 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) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). NMFS (2018) describes generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 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. The functional groups and the associated frequencies are indicated below (note that these frequency ranges correspond to the range for the composite group, with the entire range not necessarily reflecting the capabilities of every species within that group):

- Low-frequency cetaceans (mysticetes): generalized hearing is estimated to occur between approximately 7 hertz (Hz) and 35 kilohertz (kHz);
- Mid-frequency cetaceans (larger toothed whales, beaked whales, and most delphinids): generalized hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High-frequency cetaceans (porpoises, river dolphins, and members of the genera *Kogia* and *Cephalorhynchus*; including two members of the genus *Lagenorhynchus*, on the basis of recent echolocation data and genetic data): generalized hearing is estimated to occur between approximately 275 Hz and 160 kHz;
- Pinnipeds in water; Phocidae (true seals): functional hearing is estimated to occur between approximately 50 Hz to 86 kHz; and
- Pinnipeds in water; Otariidae (eared seals): functional hearing is estimated to occur between 60 Hz and 39 kHz for Otariidae.

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Five marine mammal species (three cetacean and two pinniped (one otariid and one phocid) species) have the potential to co-occur with Navy construction activities. Please refer to Table 1. Of the three cetacean species that may be present, one is classified as a low-frequency cetacean (gray whale) and two are classified as mid-frequency cetaceans (dolphins).

Potential Effects of the Specified Activity on Marine Mammals and Their Habitat

Sections 6 and 9 of the Navy's application include a comprehensive summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat, including specific discussion of potential effects to marine mammals from noise produced through pile driving. We have reviewed the Navy's discussion of potential effects for accuracy and completeness in its application and refer to that information rather than repeating it here. Alternatively, NMFS has included a lengthy discussion of the potential effects of noise on marine mammals, including specifically from pile driving, in numerous other **Federal Register** notices. Please see, *e.g.*, 83 FR 9366 (March 5, 2018); 84 FR 54867 (October 11, 2019); 82 FR 36360 (August 4, 2017), or view documents available online at *www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*.

The "Estimated Take" section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by the specified activity. The "Negligible Impact Analysis and Determination" section includes an analysis of how these activities will impact marine mammals and considers the content of this section, the "Estimated Take" 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 from that on the affected marine mammal populations.

Description of Sound Sources

This section contains a brief technical background on sound, on the characteristics of certain sound types, and on metrics used in this proposal inasmuch as the information is relevant to the specified activity and to a discussion of the potential effects of the specified activity on

marine mammals found later in this document. For general information on sound and its interaction with the marine environment, please see, *e.g.,* Au and Hastings (2008); Richardson *et al*. (1995); Urick (1983).

Sound travels in waves, the basic components of which are frequency, wavelength, velocity, and amplitude. Frequency is the number of pressure waves that pass by a reference point per unit of time and is measured in hertz or cycles per second. Wavelength is the distance between two peaks or corresponding points of a sound wave (length of one cycle). Higher frequency sounds have shorter wavelengths than lower frequency sounds, and typically attenuate (decrease) more rapidly, except in certain cases in shallower water. Amplitude is the height of the sound pressure wave or the "loudness" of a sound and is typically described using the relative unit of the decibel (dB). A sound pressure level (SPL) in dB is described as the ratio between a measured pressure and a reference pressure (for underwater sound, this is 1 microPascal (μPa)), and is a logarithmic unit that accounts for large variations in amplitude. Therefore, a relatively small change in dB corresponds to large changes in sound pressure. The source level (SL) represents the SPL referenced at a distance of 1 m from the source (referenced to 1 μPa), while the received level is the SPL at the listener's position (referenced to 1 μPa).

Root mean square (rms) is the quadratic mean sound pressure over the duration of an impulse. Root mean square is calculated by squaring all of the sound amplitudes, averaging the squares, and then taking the square root of the average (Urick, 1983). Root mean square accounts for both positive and negative values; squaring the pressures makes all values positive so that they may be accounted for in the summation of pressure levels (Hastings and Popper, 2005). This measurement is often used in the context of discussing behavioral effects, in part because

behavioral effects, which often result from auditory cues, may be better expressed through averaged units than by peak pressures.

Sound exposure level (SEL; represented as dB re 1 μPa^2-s) represents the total energy in a stated frequency band over a stated time interval or event and considers both intensity and duration of exposure. The per-pulse SEL is calculated over the time window containing the entire pulse (*i.e.*, 100 percent of the acoustic energy). SEL is a cumulative metric; it can be accumulated over a single pulse, or calculated over periods containing multiple pulses. Cumulative SEL represents the total energy accumulated by a receiver over a defined time window or during an event. Peak sound pressure (also referred to as zero-to-peak sound pressure or 0-pk) is the maximum instantaneous sound pressure measurable in the water at a specified distance from the source and is represented in the same units as the rms sound pressure.

When underwater objects vibrate or activity occurs, sound-pressure waves are created. These waves alternately compress and decompress the water as the sound wave travels. Underwater sound waves radiate in a manner similar to ripples on the surface of a pond and may be either directed in a beam or beams or may radiate in all directions (omnidirectional sources), as is the case for sound produced by the pile driving activity considered here. The compressions and decompressions associated with sound waves are detected as changes in pressure by aquatic life and man-made sound receptors such as hydrophones.

Even in the absence of sound from the specified activity, the underwater environment is typically loud due to ambient sound, which is defined as environmental background sound levels lacking a single source or point (Richardson *et al*., 1995). The sound level of a region is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.*, wind and waves, earthquakes, ice, atmospheric sound), biological

(*e.g.*, sounds produced by marine mammals, fish, and invertebrates), and anthropogenic (*e.g.*, vessels, dredging, construction) sound. A number of sources contribute to ambient sound, including wind and waves, which are a main source of naturally occurring ambient sound for frequencies between 200 Hz and 50 kHz (Mitson, 1995). In general, ambient sound levels tend to increase with increasing wind speed and wave height. Precipitation can become an important component of total sound at frequencies above 500 Hz, and possibly down to 100 Hz during quiet times. Marine mammals can contribute significantly to ambient sound levels, as can some fish and snapping shrimp. The frequency band for biological contributions is from approximately 12 Hz to over 100 kHz. Sources of ambient sound related to human activity include transportation (surface vessels), dredging and construction, oil and gas drilling and production, geophysical surveys, sonar, and explosions. Vessel noise typically dominates the total ambient sound for frequencies between 20 and 300 Hz. In general, the frequencies of anthropogenic sounds are below 1 kHz and, if higher frequency sound levels are created, they attenuate rapidly.

The sum of the various natural and anthropogenic sound sources that comprise ambient sound at any given location and time depends not only on the source levels (as determined by current weather conditions and levels of biological and human 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 decibels (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 activity may be a negligible addition to the local environment or could form a distinctive signal that may affect marine mammals.

Underwater ambient sound in the vicinity of Anaheim Bay is comprised of sounds produced by a number of natural and anthropogenic sources and varies both geographically and temporally. Human-generated sound is a significant contributor to the ambient acoustic environment at the installations considered here. The underwater acoustic environment will vary depending on the amount of anthropogenic activity, weather conditions, and tidal currents but, given the high anthropogenic use of the area, anthropogenic noise is likely to dominate the ambient soundscape. Details of source types are described in the following text.

Sounds are often considered to fall into one of two general types: pulsed and non-pulsed (defined in the following). 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 in Southall *et al*., 2007). Please see Southall *et al*. (2007) for an in-depth discussion of these concepts. The distinction between these two sound types is not always obvious, as certain signals share properties of both pulsed and non-pulsed sounds. A signal near a source could be categorized as a pulse, but due to propagation effects as it moves farther from the source, the signal duration becomes longer (*e.g.*, Greene and Richardson, 1988).

Pulsed sound sources (*e.g.*, airguns, explosions, gunshots, sonic booms, impact pile driving) produce signals that are brief (typically considered to be less than one second), broadband, atonal transients (ANSI, 1986, 2005; Harris, 1998; NIOSH, 1998; ISO, 2003) and occur either as isolated events or repeated in some succession. Pulsed sounds are all characterized by a relatively rapid rise from ambient pressure to a maximal pressure value followed by a rapid decay period that may include a period of diminishing, oscillating maximal

and minimal pressures, and generally have an increased capacity to induce physical injury as compared with sounds that lack these features.

Non-pulsed sounds can be tonal, narrowband, or broadband, brief or prolonged, and may be either continuous or intermittent (ANSI, 1995; NIOSH, 1998). Some of these non-pulsed sounds can be transient signals of short duration but without the essential properties of pulses (*e.g.*, rapid rise time). Examples of non-pulsed sounds include those produced by vessels, aircraft, machinery operations such as drilling or dredging, vibratory pile driving, and active sonar systems. The duration of such sounds, as received at a distance, can be greatly extended in a highly reverberant environment.

The impulsive sound generated by impact hammers is characterized by rapid rise times and high peak levels. Vibratory hammers produce non-impulsive, continuous noise at levels significantly lower than those produced by impact hammers. Rise time is slower, reducing the probability and severity of injury, and sound energy is distributed over a greater amount of time.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization, which will inform both NMFS's consideration of whether the number of takes is "small" and the negligible impact determination.

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).

Take of marine mammals incidental to Navy construction activities could occur as a result of Level B harassment only. Below we describe how the potential take is estimated.

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 exhibit behavioral disruptions (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment – Although available data are consistent with the basic concept that louder sounds evoke more significant behavioral responses than softer sounds, defining sound levels that disrupt behavioral patterns is difficult because responses depend on the context in which the animal receives the sound, including an animal's behavioral mode when it hears sounds (*e.g.*, feeding, resting, or migrating), prior experience, and biological factors (*e.g.*, age and sex). Some species are known to be more highly sensitive to certain anthropogenic sounds than other species. Other contextual factors, such as signal characteristics, distance from the source, and signal to noise ratio, may also help determine response to a given received level of sound. Therefore, levels at which responses occur are not necessarily consistent and can be difficult to predict (Southall *et al.*, 2007; Ellison *et al.*, 2012; Bain and Williams, 2006).

However, based on the practical need to use a relatively simple threshold based on available information that is both predictable and measurable for most activities, NMFS has historically used a generalized acoustic threshold based on received level to estimate the onset of Level B harassment. These thresholds are 160 dB rms (intermittent sources) and 120 dB rms (continuous sources).

Level A Harassment – NMFS's "Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing" (NMFS, 2018) identifies dual criteria to assess the potential for auditory injury (Level A harassment) to occur for different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise. The technical guidance identifies the received levels, or thresholds, above which individual marine mammals are predicted to experience changes in their hearing sensitivity for all underwater anthropogenic sound sources, and reflects the best available science on the potential for noise to affect auditory sensitivity by:

- Dividing sound sources into two groups (*i.e.*, impulsive and non-impulsive) based on their potential to affect hearing sensitivity;
- Choosing metrics that best address the impacts of noise on hearing sensitivity, *i.e.*, peak sound pressure level (peak SPL) (reflects the physical properties of impulsive sound sources to affect hearing sensitivity) and cumulative sound exposure level (cSEL) (accounts for not only level of exposure but also duration of exposure); and
- Dividing marine mammals into hearing groups and developing auditory weighting functions based on the science supporting that not all marine mammals hear and use sound in the same manner.

The premise of the dual criteria approach is that, while there is no definitive answer to the question of which acoustic metric is most appropriate for assessing the potential for injury, both the received level and duration of received signals are important to an understanding of the potential for auditory injury. Therefore, peak SPL is used to define a pressure criterion above which auditory injury is predicted to occur, regardless of exposure duration (*i.e.*, any single exposure at or above this level is considered to cause auditory injury), and cSEL is used to

account for the total energy received over the duration of sound exposure (*i.e.*, both received level and duration of exposure) (Southall *et al.*, 2007, 2019; NMFS, 2018). As a general principle, whichever criterion is exceeded first (*i.e.*, results in the largest isopleth) would be used as the effective injury criterion (*i.e.*, the more precautionary of the criteria). Note that cSEL acoustic threshold levels incorporate marine mammal auditory weighting functions, while peak pressure thresholds do not (*i.e.*, flat or unweighted). Weighting functions for each hearing group (*e.g.*, low-, mid-, and high-frequency cetaceans) are described in NMFS (2018).

NMFS (2018) recommends 24 hours as a maximum accumulation period relative to cSEL thresholds. These thresholds were developed by compiling and synthesizing the best available science, and are provided in Table 2 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS (2018), which is available online at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

Table 2 – Exposure Criteria for Auditory Injury

Hearing Group	Peak pressure[1]	Cumulative sound exposure level[2]	
		Impulsive	Non-impulsive
Low-frequency cetaceans	219 dB	183 dB	199 dB
Mid-frequency cetaceans	230 dB	185 dB	198 dB
Phocid pinnipeds	218 dB	185 dB	201 dB
Otariid pinnipeds	232 dB	203 dB	219 dB

[1]Referenced to 1 μPa; unweighted within generalized hearing range.

[2]Referenced to 1 μPa^2-s; weighted according to appropriate auditory weighting function.

Zones of Ensonification

Sound Propagation – 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 and topography. The general formula for underwater TL is:

$TL = B * \log_{10}(R_1/R_2)$, where

B = transmission loss coefficient (assumed to be 15)

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.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source (20*log(range)). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source (10*log(range)). As is common practice in coastal waters, here we assume practical spreading loss (4.5 dB reduction in sound level for each doubling of distance). Practical spreading is a compromise that is often used under conditions where water depth increases as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions.

In this analysis, site-specific propagation modeling was performed on behalf of the Navy by Dr. Peter Dahl (see "Modeling of Sound Propagation from Pile Driving Marine Construction at Seal Beach," available online at *www.fisheries.noaa.gov/action/incidental-take-authorization-*

us-navy-construction-ammunition-pier-and-turning-basin-naval). This more complex modeling approach accounts for factors such as depth, substrate, and frequency-dependency. This modeling was performed for propagation associated with impact and vibratory driving of 24-in concrete piles and 12-in steel beams, and for vibratory driving of 30-in steel piles (as proxy for removal of 24-in steel piles). Propagation loss associated with vibratory removal of 24-in timber piles was represented through practical spreading.

The above-referenced Dahl propagation analysis is provided for a more realistic understanding of actual ensonification effects at multiple specific locations within Anaheim Bay due to impact driving of concrete piles, impact and vibratory driving of steel beams, and vibratory driving of steel pipe piles. These actual zones are depicted in Figures 6-4 through 6-7 of the Navy's application. Notably, this analysis indicates that, for vibratory installation of piles seaward of the intended breakwater, maximum Level B harassment isopleth distances would be less than 1.5 km (before taking into account the aforementioned noise environment outside of Anaheim Bay. However, these Level B harassment areas do not factor into the take estimation process, as a density-based method is not used. We also note that the Dahl analysis indicates that all Level A harassment isopleth distances are likely less than 10 meters. However, we take a more precautionary approach to estimation of these distances through use of the NMFS User Spreadsheet, as described in greater detail in the following. Isopleth distances given in Table 5 are estimated using the spreadsheet (Level A harassment) or are simply calculated assuming practical spreading (Level B harassment).

Sound Source Levels – The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. Numerous studies have examined sound pressure levels (SPLs) recorded from

underwater pile driving projects in California. Proxy values given in Table 3 are those used in the Dahl propagation analysis discussed above. The values for 24-in concrete piles are summary values provided in Table 2-2 of Caltrans (2015). Proxy values for impact driving of 12-in steel beams are from measurements of the same piles taken at Elkhorn Slough, near Moss Landing, CA, and are found in Figure I.4-8 of Caltrans (2015). The values for vibratory driving of 30-in steel piles and 12-in steel beams are from measurements conducted by the U.S. Navy during construction of a pier in San Diego Bay. The Dahl analysis did not address vibratory driving of timber piles, the Caltrans compendium does not provide values for vibratory removal of timber piles, and few data are available for this activity. We use acoustic monitoring data from construction activity in Elliott Bay, Washington as a proxy (Greenbusch Group, 2018). This project included vibratory removal of 14-in timber piles, and reported source measurements at different distances for 63 individual piles. The median value as normalized to 10 m distance is given in Table 3. NMFS views this as the best available data for vibratory removal of timber piles.

Table 3 – Assumed Source Levels

Method	Type	Size (in)	SPL (rms)[1]	SPL (peak)[1]	SEL[1]
Impact	Concrete	24	175	193	160
	Steel I-beam	12	181	194	171
Vibratory	Timber	24	152	n/a	n/a
	Steel I-beam	12	170	n/a	n/a
	Steel pipe	24	170	n/a	n/a

[1]Source levels presented at standard distance of 10 m from the driven pile. Peak source levels are not typically evaluated for vibratory pile driving, as they are lower than the relevant thresholds for auditory injury. SEL source levels for vibratory driving are equivalent to SPL (rms) source levels.

Level A Harassment – In order to assess the potential for injury on the basis of the cumulative SEL metric, one must estimate the total strikes (impact driving) or the total driving duration (vibratory driving) over which energy is assumed to accumulate. Table 4 presents an estimate of average strikes per day; average strikes per day and average daily duration values are

used in the exposure analyses. Values given in Table 4 are engineering assumptions provided by the Navy.

Table 4 – Estimated Daily Strikes and Driving Duration

Pile type and method	Installation rate per day	Estimated duration	
		Average strikes/pile	Average daily duration
12-in steel; impact	1	390	n/a
24-in concrete; impact	3	667	n/a
12-in steel; vibratory	1	n/a	75 min
24-in timber; vibratory	1	n/a	60 min
24-in steel; vibratory	1	n/a	60 min

Delineation of potential injury zones on the basis of the peak pressure metric was performed using the SPL(peak) values provided in Table 3 above. As described previously, source levels for peak pressure are unweighted within the generalized hearing range, while SEL source levels are weighted according to the appropriate auditory weighting function. Delineation of potential injury zones on the basis of the cumulative SEL metric for impact and vibratory driving were performed using single-frequency weighting factor adjustments (WFA) of 2.0 and 2.5 kHz, respectively, as recommended by the NMFS User Spreadsheet, described in NMFS's Technical Guidance (NMFS, 2018). In order to assist in simple application of the auditory weighting functions, NMFS recommends WFAs for use with specific types of activities that produce broadband or narrowband noise. WFAs consider marine mammal auditory weighting functions by focusing on a single frequency. This will typically result in higher predicted exposures for broadband sounds, because only one frequency is being considered, compared to exposures associated with the ability to fully incorporate the Technical Guidance's weighting functions. Note that, for use in delineating assumed Level A harassment zones through use of the User Spreadsheet, practical spreading was assumed.

In consideration of the assumptions relating to sound source levels, propagation, and pile driving rates, notional radial distances to relevant thresholds were calculated (Table 5). However,

these distances are sometimes constrained by topography. Actual notional ensonified zones, calculated using site-specific propagation modeling (Dahl, 2018) are shown in Figures 6-4 to 6-7 of the Navy's application. For production piles, these zones are modeled on the basis of a centrally-located, notional pile. Note that these figures assume the presence of the breakwater that will be constructed prior to pile driving activity.

Table 5 – Calculated Distances to Level A and Level B Harassment Zones

Pile	Driver	PW		OW		LF		MF		Level B[1]
		pk	cSEL	pk	cSEL	pk	cSEL	pk	cSEL	
24-in concrete	Impact	n/a	25	n/a	<10	n/a	46	n/a	<10	100
12-in steel	Impact	n/a	45	n/a	<10	n/a	85	n/a	<10	251
24-in steel	Vibratory	n/a	17	n/a	<10	n/a	27	n/a	<10	21,544
12-in steel	Vibratory	n/a	19	n/a	<10	n/a	32	n/a	<10	21,544
24-in timber	Vibratory	n/a	<10	n/a	<10	n/a	<10	n/a	<10	1,359

Note: PW=Phocid; OW=Otariid; LF=low frequency; MF=mid frequency; HF=high frequency; pk=peak pressure; cSEL=cumulative SEL

[1]Calculated free-field values only; all zones are assumed restricted to Anaheim Bay.

Exposure Estimates

Available information regarding marine mammal occurrence at NWS Seal Beach was summarized previously in "Description of Marine Mammals in the Area of the Specified Activity." Given the small area of Anaheim Bay, infrequent occurrence of marine mammals, and limited observational data available, we do not use these data to support calculation of density values, but rather use the maximum observed group size in conjunction with the expected days of pile driving to develop take estimates. The Navy assumes a total of 336 days of pile driving activity over the five-year period of effectiveness of this proposed rule. However, the total days are assumed to occur over a three-year period during the five years. Therefore, the Navy assumes 112 pile driving days per year for three years.

To quantitatively assess exposure of marine mammals to noise from pile driving activities, the Navy used two methods. For pinniped species, which are assumed to have the

potential to occur on any day of pile driving, the maximum group size is multiplied by the total annual pile driving days to generate the annual take estimate. For cetacean species, whose occurrence is assumed to be more sporadic in nature, the assumed group size is multiplied by an assumed proportion of total annual pile driving days. The assumed proportion reasonably reflects the observational data available for Anaheim Bay. This calculation is performed as: 112 annual pile driving days/30 days per month times x assumed monthly days present. Given the small calculated Level A harassment zone sizes, we assume that no Level A harassment is likely to occur, for any species. The Navy's proposed mitigation measures further reduce the low likelihood that any incidents of Level A harassment would occur, and none are proposed for authorization.

California Sea Lion – California sea lions are regularly observed, typically as individuals or in pairs. However, a maximum group of six sea lions was observed in Anaheim Bay. Therefore, the Navy estimates take as six sea lions per day for 112 days annually, yielding an estimate of 672 incidents of take annually and 2,016 incidents over the duration of the rule.

Harbor Seal – Individual harbor seals are infrequently observed in Anaheim Bay. However, as a relatively common coastal pinniped, the Navy assumes that one harbor seal could be present on each day of pile driving. Therefore, the Navy estimates take as one seal per day for 112 days annually, yielding an estimate of 112 incidents of take annually and 336 incidents over the duration of the rule.

Bottlenose Dolphin – The Navy assumes that groups of up to ten bottlenose dolphins may occur in Anaheim Bay on six occasions per month, yielding an annual estimate of 220 incidents of take, and 660 over the duration of the rule. These dolphins are assumed to be from the California coastal stock of bottlenose dolphin.

Common Dolphin – The Navy assumes that groups of up to nine common dolphins may occur in Anaheim Bay on ten occasions per month, yielding an annual estimate of 336 incidents of take, and 1,008 over the duration of the rule. These dolphins could be from either the California/Oregon/Washington stock of common dolphin or from a subspecies stock, the eastern North Pacific long-beaked common dolphin.

Gray Whale – Individual gray whales have rarely been observed in the vicinity of the entrance to Anaheim Bay. The Navy assumes that a single gray whale may occur in Anaheim Bay on two occasions per month, yielding an annual estimate of seven incidents of take, and 21 over the duration of the rule.

The total proposed take authorization for all species is summarized in Table 6 below. No authorization of take by Level A harassment is proposed for authorization.

Table 6 – Proposed Take Authorization by Level B Harassment

Species	Annual	Total	Percent[1]
California sea lion	672	2,016	0.3
Harbor seal	112	336	0.4
Bottlenose dolphin	220	660	48.6
Common dolphin	336	1,008	<0.1/0.3
Gray whale	7	21	<0.1

[1]Reflects annual take number.

Proposed Mitigation

Under Section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses ("least practicable adverse impact"). NMFS does not have a regulatory definition for "least practicable adverse impact." However, NMFS's implementing 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 such 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, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, implementation of the measure(s) is expected to reduce impacts to marine mammal species or stocks, their habitat, and their availability for subsistence uses. This analysis will consider such things as the nature of the potential adverse impact (such as likelihood, scope, and range), the likelihood that the measure will be effective if implemented, and the likelihood of successful implementation.

(2) The practicability of the measure for applicant implementation. Practicability of implementation may consider such things as cost, impact on operations, personnel safety, and practicality of implementation.

The mitigation strategies described below largely follow those required and successfully implemented under previous incidental take authorizations issued in association with similar construction activities. Estimated zones of influence (ZOI; see "Estimated Take") were used to develop mitigation measures for pile driving activities. Background discussion related to underwater sound concepts and terminology is provided in the section on "Description of Sound Sources," earlier in this preamble. The ZOIs were used to inform mitigation zones that would be established to prevent Level A harassment and to monitor Level B harassment.

In addition to the specific measures described later in this section, the Navy would conduct briefings for construction supervisors and crews, the marine mammal monitoring team,

and Navy staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.

Timing

As described previously, the Navy would conduct construction activities only during daylight hours. This is a voluntary description by the Navy of expected construction scheduling that we do not treat as an absolute requirement. Therefore, this commitment is not considered in making our preliminary determinations and is not included in the proposed regulatory text found at the end of this preamble.

Monitoring and Shutdown for Pile Driving

The following measures would apply to the Navy's mitigation through shutdown and disturbance zones:

Shutdown Zone – The purpose of a shutdown zone is to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area), thus preventing some undesirable outcome, such as auditory injury or behavioral disturbance of sensitive species (serious injury or death are unlikely outcomes even in the absence of mitigation measures). For all pile driving activities, the Navy would establish a minimum shutdown zone with a radial distance of 10 m. This minimum zone is intended to prevent the already unlikely possibility of physical interaction with construction equipment and to establish a precautionary minimum zone with regard to acoustic effects.

In most cases, the minimum shutdown zone of 10 m is expected to contain the area in which auditory injury could occur. In all circumstances where the predicted Level A harassment zone exceeds the minimum zone, the Navy proposes to implement a shutdown zone equal to the

predicted Level A harassment zone (see Table 5). In all cases, predicted injury zones are calculated on the basis of cumulative sound exposure, as peak pressure source levels produce smaller predicted zones.

Injury zone predictions generated using the optional user spreadsheet are precautionary due to a number of simplifying assumptions. For example, the spreadsheet tool assumes that marine mammals remain stationary during the activity and does not account for potential recovery between intermittent sounds. In addition, the tool incorporates the acoustic guidance's weighting functions through use of a single-frequency weighting factor adjustment intended to represent the signal's 95 percent frequency contour percentile (*i.e.*, upper frequency below which 95 percent of total cumulative energy is contained; Charif *et al*., 2010). This will typically result in higher predicted exposures for broadband sounds, because only one frequency is being considered, compared to exposures associated with the ability to fully incorporate the guidance's weighting functions.

Disturbance Zone – Disturbance zones are the areas in which sound pressure levels equal or exceed 160 and 120 dB rms (for impact and vibratory pile driving, respectively). Regarding vibratory driving occurring outside the breakwater, we assume that the disturbance zone is truncated at the entrance to Anaheim Bay. Disturbance zones provide utility for monitoring conducted for mitigation purposes (*i.e.*, shutdown zone monitoring) by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring of disturbance zones enables observers to be aware of and communicate the presence of marine mammals in the project area but outside the shutdown zone, and thus prepare for potential shutdowns of activity. The primary purpose of disturbance zone monitoring is for documenting incidents of Level B harassment.

Disturbance zone monitoring is discussed in greater detail later (see "Proposed Monitoring and Reporting"). Nominal radial distances for disturbance zones are shown in Table 5.

In order to document observed incidents of harassment, monitors record all marine mammal observations, regardless of location. The observer's location and the location of the pile being driven are known, and the location of the animal may be estimated as a distance from the observer and then compared to the location from the pile. It may then be estimated whether the animal was exposed to sound levels constituting incidental harassment on the basis of predicted distances to relevant thresholds in post-processing of observational data, and a precise accounting of observed incidents of harassment created.

Monitoring Protocols – Monitoring would be conducted before, during, and after pile driving activities. In addition, observers will record all incidents of marine mammal occurrence, regardless of distance from activity, and monitors will document any behavioral reactions in concert with distance from piles being driven. Observations made outside the shutdown zone will not result in shutdown; that pile segment will be completed without cessation, unless the animal approaches or enters the shutdown zone, at which point all pile driving activities would be halted. Monitoring will take place from 30 minutes prior to initiation through 30 minutes post-completion of pile driving activities. 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.

The following additional measures apply to visual monitoring:

(1) Monitoring will be conducted by qualified, trained protected species observers, who will be placed at the best vantage point(s) practicable (*i.e.*, construction barges, on shore, or any other suitable location) to monitor for marine mammals and implement shutdown/delay

procedures when applicable by calling for the shutdown to the hammer operator. Observers would have no other construction-related tasks while conducting monitoring. Observers should have the following minimum qualifications:

- Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;
- 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 document 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 and times when in-water construction activities were suspended to avoid potential incidental injury of marine mammals from construction noise within a defined shutdown zone; 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.

Observer teams employed by the Navy in satisfaction of the mitigation and monitoring requirements described herein must meet the following additional requirements:

- Independent observers (*i.e.*, not construction personnel) are required.
- At least one observer must have prior experience working as an observer.

- Other observers may substitute education (degree in biological science or related field) or training for experience.
- Where a team of three or more observers are required, one observer should be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer.
- We will require submission and approval of observer CVs.

(2) Prior to the start of pile driving activity, the shutdown zone will be monitored for 30 minutes to ensure that it is clear of marine mammals. Pile driving will only commence once observers have declared the shutdown zone clear of marine mammals; animals will be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition), and their behavior will be monitored and documented. The shutdown zone may only be declared clear, and pile driving started, when the entire shutdown zone is visible (*i.e.*, when not obscured by dark, rain, fog, *etc*.). In addition, if such conditions should arise during impact pile driving that is already underway, the activity would be halted.

(3) If a marine mammal approaches or enters the shutdown zone during the course of pile driving operations, activity will be halted and delayed until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or fifteen minutes have passed without re-detection of the animal. Monitoring will be conducted throughout the time required to drive a pile and for thirty minutes following the conclusion of pile driving.

Soft Start

The use of a soft start procedure is believed to provide additional protection to marine mammals by warning marine mammals or providing them with a chance to leave the area prior to the hammer operating at full capacity, and typically involves a requirement to initiate sound

from the hammer at reduced energy followed by a waiting period. This procedure is repeated two additional times. It is difficult to specify the reduction in energy for any given hammer because of variation across drivers and, for impact hammers, the actual number of strikes at reduced energy will vary because operating the hammer at less than full power results in "bouncing" of the hammer as it strikes the pile, resulting in multiple "strikes." The Navy will utilize soft start techniques for impact pile driving. We require an initial set of three strikes from the impact hammer at reduced energy, followed by a 30-second waiting period, then two subsequent 3-strike sets. Soft start will be required at the beginning of each day's impact pile driving work and at any time following a cessation of impact pile driving of thirty minutes or longer; the requirement to implement soft start for impact driving is independent of whether vibratory driving has occurred within the prior 30 minutes.

We have carefully evaluated the Navy's proposed mitigation measures and considered a range of other measures in the context of ensuring that we prescribed the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Based on our evaluation of these measures, we have preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses.

Proposed Monitoring and Reporting

In order to issue an LOA for an activity, Section 101(a)(5)(A) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of the authorized taking. NMFS's MMPA implementing regulations further describe the information that an

applicant should provide when requesting an authorization (50 CFR 216.104(a)(13)), including the means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and the level of taking or impacts on populations of marine mammals.

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

- Occurrence of significant interactions with marine mammal species in action area (*e.g.*, animals that came close to the vessel, contacted the gear, or are otherwise rare or displaying unusual behavior).
- 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 action; 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 important physical components of marine mammal habitat).
- Mitigation and monitoring effectiveness.

Visual Marine Mammal Observations

The Navy will collect sighting data and behavioral responses to pile driving activity for marine mammal species observed in the region of activity during the period of activity. The Navy will employ a minimum of two qualified observers at all times to monitor shutdown zones and the surrounding waters of Anaheim Bay. In order to accomplish visual coverage of the entirety of Anaheim Bay, it is possible that additional observers will be used. All observers will be trained in marine mammal identification and behaviors and are required to have no other construction-related tasks while conducting monitoring. The Navy would monitor all shutdown zones at all times, and would monitor disturbance zones as conditions allow. The Navy would conduct monitoring before, during, and after pile driving, with observers located at the best practicable vantage points.

As described in "Proposed Mitigation" and based on our requirements, the Navy would implement the following procedures for pile driving:

- Marine mammal observers would be located at the best vantage point(s) in order to properly see the entire shutdown zone and as much of the disturbance zone as possible.
- During all observation periods, observers will use binoculars and the naked eye to search continuously for marine mammals.
- If the shutdown zones are obscured by fog or poor lighting conditions, pile driving at that location will not be initiated until that zone is visible. Should such conditions arise while impact driving is underway, the activity would be halted.
- The shutdown zone around the pile would be monitored for the presence of marine mammals before, during, and after all pile driving activity.

Individuals implementing the monitoring protocol will assess its effectiveness using an adaptive approach. Monitoring biologists will use their best professional judgment throughout

implementation and seek improvements to these methods when deemed appropriate. Any modifications to the protocol will be coordinated between NMFS and the Navy.

Data Collection

We require that observers use standardized data forms. Among other pieces of information, the Navy will record detailed information about any implementation of shutdowns, including the distance of animals to the pile and a description of specific actions that ensued and resulting behavior of the animal, if any. We require that, at a minimum, the following information be collected on the sighting forms:

- Date and time that monitored activity begins or ends;
- Construction activities occurring during each observation period;
- Weather parameters (*e.g.*, wind speed, percent cloud cover, visibility);
- Water conditions (*e.g.*, sea state, tide state);
- Species, numbers, and, if possible, sex and age class of marine mammals;
- Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
- Distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;
- Description of implementation of mitigation measures (*e.g.*, shutdown or delay);
- Locations of all marine mammal observations; and
- Other human activity in the area.

The Navy will note in behavioral observations, to the extent such observations are possible, if an animal has remained in the area during construction activities. Therefore, it may be possible to identify if the same animal or different individuals are being exposed.

Reporting

A draft report would be submitted to NMFS within 90 days of the completion of each calendar year. The report will include marine mammal observations pre-activity, during-activity, and post-activity during pile driving days, and will also provide descriptions of any behavioral responses to construction activities by marine mammals and a complete description of all mitigation shutdowns and the results of those actions and an extrapolated total take estimate based on the number of marine mammals observed during the course of construction. A final report must be submitted within 30 days following resolution of comments on the draft report. The Navy would also submit a comprehensive summary report covering all activities conducted under the incidental take regulations.

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy shall report the incident to the Office of Protected Resources (OPR), NMFS and to the regional stranding coordinator as soon as feasible. The report must include the following information:

- 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" by mortality, serious injury, and Level A or Level B harassment, we consider other factors, such as the likely nature of any behavioral responses (*e.g.*, intensity, duration), the context of any such responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of 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's 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 environmental 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).

Pile driving activities associated with this construction action, as described previously, have the potential to disturb marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment (behavioral disturbance) only from underwater sounds generated from pile driving. Potential takes could occur if individual marine mammals are present in the ensonified zone when pile driving is happening.

No serious injury or mortality would be expected even in the absence of the proposed mitigation measures. No Level A harassment is anticipated given the nature of the activities, *i.e.*,

much of the anticipated activity would involve vibratory driving and/or brief impact installation of primarily non-steel piles, and measures designed to minimize the possibility of injury. The limited potential for injury is expected to be essentially eliminated through implementation of the planned mitigation measures—soft start (for impact driving) and shutdown zones. Impact driving, as compared with vibratory driving, has source characteristics (short, sharp pulses with higher peak levels and much sharper rise time to reach those peaks) that are potentially injurious or more likely to produce severe behavioral reactions. Given sufficient notice through use of soft start, marine mammals are expected to move away from a sound source that is annoying prior to its becoming potentially injurious or resulting in more severe behavioral reactions. Environmental conditions are expected to generally be good, with calm sea states, and we expect conditions would allow a high marine mammal detection capability, enabling a high rate of success in implementation of shutdowns to avoid injury.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted in San Diego Bay, San Francisco Bay, and in the Puget Sound region, which have taken place with no known long-term adverse consequences from behavioral harassment.

The Navy has conducted multi-year activities potentially affecting marine mammals, and typically involving greater levels of activity and/or more impactful activities (*e.g.*, impact driving

of steel piles) than is contemplated here, in various locations such as San Diego Bay as well as locations in Washington inland waters. Reporting from these activities has similarly reported no apparently consequential behavioral reactions or long-term effects on marine mammal populations. Repeated exposures of individuals to relatively low levels of sound outside of preferred habitat areas are unlikely to significantly disrupt critical behaviors. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in viability for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring. Effects of the specified activity are expected to be limited to the enclosed waters of Anaheim Bay, which provides relatively low-quality habitat and no known habitat areas of any importance. Therefore, we expect that animals annoyed by project sound would simply avoid the area and use more-preferred habitats.

In summary, this negligible impact analysis is founded on the following factors: (1) the possibility of serious injury or mortality may reasonably be considered discountable; (2) as a result of the nature of the activity in concert with the planned mitigation requirements, injury is not anticipated; (3) the anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior; (4) the absence of any significant habitat within the project area, including known areas or features of special significance for foraging or reproduction; and (5) the presumed efficacy of the proposed mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact.

In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities will have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

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, we preliminarily find that the total marine mammal take from the Navy's construction activities will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(A) of the MMPA for specified 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. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Please see Table 6 for information relating to this small numbers analysis. We propose to authorize incidental take of five marine mammal species (with take of one species potentially occurring for two stocks). The total annual amount of taking proposed for authorization is less than one percent for all stocks other than the California coastal bottlenose dolphin, for which the proposed annual take represents greater than one-third of the best available population abundance, if we were to assume that all takes occurred to distinct individuals. However, these

numbers represent the estimated incidents of take, not the number of individuals taken. That is, it is likely that a relatively small subset of California coastal bottlenose dolphins would be incidentally harassed by project activities. California coastal bottlenose dolphins range from San Francisco Bay to San Diego (and south into Mexico) and the specified activity would be stationary within an enclosed water body that is not recognized as an area of any special significance for coastal bottlenose dolphins (and is therefore not an area of dolphin aggregation, as evident in Navy observational records). We therefore believe that the estimated numbers of takes likely represent repeated exposures of a much smaller number of bottlenose dolphins and that, based on the limited region of exposure in comparison with the known distribution of the coastal bottlenose dolphin, these estimated incidents of take represent small numbers of bottlenose dolphins. Therefore, the proposed annual take levels would be of small numbers for all stocks.

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 will be taken relative to the population sizes of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by these actions. Therefore, we have 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.

Adaptive Management

The regulations governing the take of marine mammals incidental to Navy construction activities would contain an adaptive management component.

The reporting requirements associated with this proposed rule are designed to provide NMFS with monitoring data from the previous year to allow consideration of whether any changes are appropriate. The use of adaptive management allows NMFS to consider new information from different sources to determine (with input from the Navy regarding practicability) on an annual or biennial basis if mitigation or monitoring measures should be modified (including additions or deletions). Mitigation measures could be modified if new data suggests that such modifications would have a reasonable likelihood of reducing adverse effects to marine mammals and if the measures are practicable.

The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) results from monitoring reports, as required by MMPA authorizations; (2) results from general marine mammal and sound research; and (3) any information which reveals that marine mammals may have been taken in a manner, extent, or number not authorized by these regulations or subsequent LOAs.

Endangered Species Act (ESA)

No marine mammal species listed under the ESA are expected to be affected by these activities. Therefore, we have determined that section 7 consultation under the ESA is not required.

Request for Information

NMFS requests interested persons to submit comments, information, and suggestions concerning the Navy request and the proposed regulations (see **ADDRESSES**). All comments will be reviewed and evaluated as we prepare a final rule and make final determinations on

whether to issue the requested authorization. This notice and referenced documents provide all environmental information relating to our proposed action for public review.

Classification

Pursuant to the procedures established to implement Executive Order 12866, the Office of Management and Budget has determined that this proposed rule is not significant.

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA), the Chief Counsel for Regulation of the Department of Commerce has certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The U.S. Navy is the sole entity that would be subject to the requirements in these proposed regulations, and the Navy is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. Because of this certification, a regulatory flexibility analysis is not required and none has been prepared.

This proposed rule does not contain a collection-of-information requirement subject to the provisions of the Paperwork Reduction Act (PRA) because the applicant is a Federal agency.

List of Subjects in 50 CFR Part 218

Exports, Fish, Imports, Indians, Labeling, Marine mammals, Penalties, Reporting and recordkeeping requirements, Seafood, Transportation.

Dated: December 3, 2019.

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Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs,

National Marine Fisheries Service.

For reasons set forth in the preamble, 50 CFR part 218 is proposed to be amended as follows:

PART 218 – REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

1. The authority citation for part 218 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq*.

2. Add subpart D to part 218 to read as follows:

Subpart D – Taking Marine Mammals Incidental to U.S. Navy Construction Activities at Naval Weapons Station Seal Beach, California

Sec.

Subpart D – Taking Marine Mammals Incidental to U.S. Navy Construction Activities at Naval Weapons Station Seal Beach, California

§ 218.30 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to the U.S. Navy (Navy) and those persons it authorizes or funds to conduct activities on its behalf for the taking of marine mammals that

occurs in the areas outlined in paragraph (b) of this section and that occurs incidental to maintenance construction activities.

(b) The taking of marine mammals by the Navy may be authorized in a Letter of Authorization (LOA) only if it occurs within California coastal waters in the vicinity of Naval Weapons Station Seal Beach.

§ 218.31 Effective dates.

Regulations in this subpart are effective from [EFFECTIVE DATE OF FINAL RULE] through [DATE 5 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].

§ 218.32 Permissible methods of taking.

Under LOAs issued pursuant to § 216.106 of this chapter and § 218.36, the Holder of the LOA (hereinafter "Navy") may incidentally, but not intentionally, take marine mammals within the area described in § 218.30(b) by Level B harassment associated with construction activities, provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate LOA.

§ 218.33 Prohibitions.

Notwithstanding takings contemplated in § 218.32 and authorized by an LOA issued under § 216.106 of this chapter and § 218.36, no person in connection with the activities described in § 218.30 may:

(a) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or an LOA issued under § 216.106 of this chapter and § 218.36;

(b) Take any marine mammal not specified in such LOAs;

(c) Take any marine mammal specified in such LOAs in any manner other than as specified;

(d) Take a marine mammal specified in such LOAs if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(e) Take a marine mammal specified in such LOAs if NMFS determines such taking results in an unmitigable adverse impact on the species or stock of such marine mammal for taking for subsistence uses.

§ 218.34 Mitigation requirements.

When conducting the activities identified in § 218.30(a), the mitigation measures contained in any LOA issued under § 216.106 of this chapter and § 218.36 must be implemented. These mitigation measures shall include but are not limited to:

(a) General conditions:

(1) A copy of any issued LOA must be in the possession of the Navy, its designees, and work crew personnel operating under the authority of the issued LOA.

(2) The Navy shall conduct briefings for construction supervisors and crews, the monitoring team, and Navy staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.

(b) Shutdown zones:

(1) For all pile driving activity, the Navy shall implement a minimum shutdown zone of a 10 m radius around the pile. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.

(2) For all pile driving activity, the Navy shall implement shutdown zones with radial distances as identified in any LOA issued under § 216.106 of this chapter and § 218.36. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.

(3) For all pile driving activity, the Navy shall designate monitoring zones with radial distances as identified in any LOA issued under § 216.106 of this chapter and § 218.36.

(c) Shutdown protocols:

(1) The Navy shall deploy marine mammal observers as described in § 218.35.

(2) For all pile driving activities, a minimum of one observer shall be stationed at the active pile driving rig or in reasonable proximity in order to monitor the shutdown zone.

(3) Monitoring shall take place from 30 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity. Pre-activity monitoring shall be conducted for 30 minutes to ensure that the shutdown zone is clear of marine mammals, and pile driving may commence when observers have declared the shutdown zone clear of marine mammals. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals shall be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior shall be monitored and documented. Monitoring shall occur throughout the time required to drive a pile. 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).

(4) If a marine mammal approaches or enters the shutdown zone, all pile driving activities at that location shall be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

(5) Monitoring shall be conducted by trained observers, who shall have no other assigned tasks during monitoring periods. Trained observers shall be placed at the best vantage point(s)

practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. The Navy shall adhere to the following additional observer qualifications:

(i) Independent observers (*i.e.*, not construction personnel) are required.

(ii) At least one observer must have prior experience working as an observer.

(iii) Other observers may substitute education (degree in biological science or related field) or training for experience.

(iv) Where a team of three or more observers are required, one observer shall be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer.

(v) The Navy shall submit observer CVs for approval by NMFS.

(d) Soft start: The Navy shall use soft start techniques for impact pile driving. Soft start for impact drivers requires contractors to provide an initial set of three strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy three-strike sets. Soft start shall 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 thirty minutes or longer.

§ 218.35 Requirements for monitoring and reporting.

(a) Trained observers shall receive a general environmental awareness briefing conducted by Navy staff. At minimum, training shall include identification of marine mammals that may occur in the project vicinity and relevant mitigation and monitoring requirements. All observers shall have no other construction-related tasks while conducting monitoring.

(b) For shutdown zone monitoring, the Navy shall report on implementation of shutdown or delay procedures, including whether the procedures were not implemented and why (when

relevant).

(c) The Navy shall deploy a minimum of one additional observer to aid in monitoring disturbance zones. This observer shall collect sighting data and behavioral responses to pile driving for marine mammal species observed in the region of activity during the period of activity, and shall communicate with the shutdown zone observer as appropriate with regard to the presence of marine mammals. All observers shall be trained in identification and reporting of marine mammal behaviors.

(d) The Navy must submit annual and summary reports.

(1) Annual reporting:

(i) Navy shall submit an annual summary report to NMFS not later than 90 days following the end of each calendar year. Navy shall provide a final report within 30 days following resolution of comments on the draft report.

(ii) These reports shall contain, at minimum, the following:

(A) Date and time that monitored activity begins or ends;

(B) Construction activities occurring during each observation period;

(C) Weather parameters (*e.g.*, wind speed, percent cloud cover, visibility);

(D) Water conditions (*e.g.*, sea state, tide state);

(E) Species, numbers, and, if possible, sex and age class of marine mammals;

(F) Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;

(G) Distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;

(H) Description of implementation of mitigation measures (*e.g.*, shutdown or delay);

(I) Locations of all marine mammal observations; and

(J) Other human activity in the area.

(2) Navy shall submit a comprehensive summary report to NMFS not later than ninety days following the conclusion of marine mammal monitoring efforts described in this subpart.

(e) Reporting of injured or dead marine mammals: In the event that personnel involved in the survey activities discover an injured or dead marine mammal, the LOA-holder must report the incident to the Office of Protected Resources (OPR), NMFS and to the West Coast Regional Stranding Network as soon as feasible. The report must include the following information:

(1) Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);

(2) Species identification (if known) or description of the animal(s) involved;

(3) Condition of the animal(s) (including carcass condition if the animal is dead);

(4) Observed behaviors of the animal(s), if alive;

(5) If available, photographs or video footage of the animal(s); and

(6) General circumstances under which the animal was discovered.

§ 218.36 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, the Navy must apply for and obtain an LOA.

(b) An LOA, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of these regulations.

(c) If an LOA expires prior to the expiration date of these regulations, the Navy may apply for and obtain a renewal of the LOA.

(d) In the event of projected changes to the activity or to mitigation and monitoring

measures required by an LOA, the Navy must apply for and obtain a modification of the LOA as described in § 218.37.

(e) The LOA shall set forth:

(1) Permissible methods of incidental taking;

(2) Means of effecting the least practicable adverse impact (*i.e.*, mitigation) on the species, its habitat, and on the availability of the species for subsistence uses; and

(3) Requirements for monitoring and reporting.

(f) Issuance of the LOA shall be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under these regulations.

(g) Notice of issuance or denial of an LOA shall be published in the **Federal Register** within thirty days of a determination.

§ 218.37 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under § 216.106 of this chapter and § 218.36 for the activity identified in § 218.30(a) shall be renewed or modified upon request by the applicant, provided that:

(1) The proposed specified activity and mitigation, monitoring, and reporting measures, as well as the anticipated impacts, are the same as those described and analyzed for these regulations (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section), and

(2) NMFS determines that the mitigation, monitoring, and reporting measures required by the previous LOA under these regulations were implemented.

(b) For LOA modification or renewal requests by the applicant that include changes to the activity or the mitigation, monitoring, or reporting (excluding changes made pursuant to the

adaptive management provision in paragraph (c)(1) of this section) that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), NMFS may publish a notice of proposed LOA in the **Federal Register**, including the associated analysis of the change, and solicit public comment before issuing the LOA.

(c) An LOA issued under § 216.106 of this chapter and § 218.36 for the activity identified in § 218.30(a) may be modified by NMFS under the following circumstances:

(1) Adaptive Management – NMFS may modify (including augment) the existing mitigation, monitoring, or reporting measures (after consulting with the Navy regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring set forth in the preamble for these regulations.

(i) Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, or reporting measures in an LOA:

(A) Results from the Navy's monitoring from the previous year(s).

(B) Results from other marine mammal and/or sound research or studies.

(C) Any information that reveals marine mammals may have been taken in a manner, extent or number not authorized by these regulations or subsequent LOAs.

(ii) If, through adaptive management, the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS will publish a notice of proposed LOA in the **Federal Register** and solicit public comment.

(2) Emergencies – If NMFS determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in LOAs issued

pursuant to § 216.106 of this chapter and § 218.36, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within thirty days of the action.

§ 218.38 - § 218.39 [Reserved]

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