BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XD070

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to US Coast Guard Station Monterey Waterfront Repairs in Monterey, California

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

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received an application from the United States Coast Guard (USCG) for an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to conducting its Station Monterey waterfront repair in Monterey, California. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an IHA to USCG to incidentally take, by Level B Harassment only, marine mammals during the specified activity.

DATES: Comments and information must be received no later than [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Comments on the application should be addressed to Jolie Harrison, Supervisor, Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing email comments is itp.guan@noaa.gov. Comments sent via e-mail, including all attachments, must not exceed a 25-megabyte file size. NMFS is not responsible for comments sent to addresses other than those provided here.

Instructions: All comments received are a part of the public record and will generally be posted to http://www.nmfs.noaa.gov/pr/permits/incidental.htm without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

An electronic copy of the application may be obtained by writing to the address specified above, telephoning the contact listed below (see FOR FURTHER INFORMATION CONTACT), or visiting the internet at: http://www.nmfs.noaa.gov/pr/permits/incidental.htm. The following associated documents are also available at the same internet address: Environmental Assessment and marine mammal monitoring plan. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

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

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 et seq.) direct 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 if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact

on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 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."

Except with respect to certain activities not pertinent here, 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].

Summary of Request

On June 27, 2013, NMFS received an application from USCG for the taking of marine mammals incidental to its Station Monterey waterfront repairs project. NMFS determined that the application was adequate and complete.

The USCG proposes to conduct its Station Monterey waterfront repairs work in Monterey, California. The proposed activity would occur between June 15 and October 15, 2014. The following specific aspects of the proposed activities are likely to result in the take of marine mammals: in-water pile removal and impact and vibratory pile driving. Take, by Level B Harassment only, of individuals of five species is anticipated to result from the specified activity.

Description of the Specified Activity

Overview

The USCG proposes to improve and maintain the structural integrity of the patrol boat pier (Pier) and potable waterline at USCG Station Monterey (Station) through the replacement of Pier piles and the water line.

The Station's area of responsibility extends 50 miles offshore for approximately 120 nautical miles of coastline, from Point Año Nuevo south to the Monterey-San Luis Obispo County line, encompassing 5,000 square miles. The Station's missions include maritime homeland security, search and rescue, maritime law enforcement, and public affairs. The Station works jointly with other agencies governing the Monterey Bay National Marine Sanctuary. The vessels that are used to support the Station's missions are 21 to 25 foot rigid-hull inflatable boats, a 41 foot utility boat, a 47 foot motor life boat, and an 87 foot patrol boat. In addition, a NOAA boat also uses the Pier.

Dates and Duration

The project is proposed for construction in June 2014. The proposed pile extraction and driving activities would occur between June 15 and October 15.

Under the Proposed Action, the repairs will require a maximum of 60 work days for completion. A work day is limited to a period beginning 2 hours after sunrise and ending 2 hours before sunset. The duration of the repairs, lasting approximately 60 work days, includes the time for removal of existing timber piles, new pile installations, and under-deck and above-deck repairs described below.

It is assumed that two piles per day would be both extracted and installed. Pile driving activities would therefore occur for an estimated maximum of 10 days of the total construction time. It is assumed that driving time would be about 20 to 25 minutes per pile (vibratory or impact). It is assumed that vibratory extraction of the existing piles would take about 10 minutes

per pile. This would result in—at most—60 to 70 minutes of pile driving per day; or 8.5 to 10 hours of underwater and airborne noise generation from pile driving over the course of the project construction.

Specified Geographic Region

The Monterey Peninsula is 85 miles south of San Francisco, California, on the southern end of Monterey Bay. The Station is located at 100 Lighthouse Avenue in the City and County of Monterey, California (see Figure 1-1 in the IHA application).

The Pier is on the eastern portion of the Station's waterfront facility, along a jetty that extends approximately 1,300 feet east into Monterey Harbor. The Pier and floating docks are on the southern side of the Jetty. A paved access road runs approximately 800 feet along the Jetty. The Pier access road is accessible to the general public; however, the USCG facilities are secured by fencing. The eastern end of the Jetty is not accessible to the public. This area is inhabited throughout most of the year by seabirds, which use the Jetty for nesting during spring and summer; and by California sea lions, which use the Jetty as a haul-out site. Pacific harbor seals also use rocky outcroppings and waters within the larger Monterey Bay area for haul-out and foraging, respectively.

Detailed Description of Activities

The Pier was constructed in 1934, of timber and steel material, and is supported by 64 piles. In 1995, 47 of the original timber piles were replaced with 14 inch steel pipe piles, and the remaining 17 piles were covered polyvinyl chloride (PVC) wraps to extend their service life. These 17 timber piles are bearing piles that have exceeded their service life due to marine borers (i.e., marine organisms, such as mollusks, that feed on wood particles) and exposure to the marine environment, and are therefore in need of replacement. The Pier deck and floating docks

require repairs due to deterioration that has occurred from exposure to the marine environment and regular use of these facilities.

A galvanized steel pipe runs under the Pier and provides potable water to the Pier's floating docks. Exposure to the marine environment over time has resulted in severe corrosion of the water line, warranting its replacement.

The USCG proposes to remove and replace 17 timber piles that structurally support the Pier; replace the existing potable water line; and improve associated structures to maintain the structural integrity of the Pier and potable water line.

The proposed construction would involve removing the existing timber deck, timber stringers, steel pile caps, steel support beams, and hardware to access the 17 timber piles that need to be replaced. The timber piles, which are approximately 14 to 16 inches in diameter and are covered with PVC wraps, would be removed through use of a vibratory extractor.

Each timber pile would then be replaced with a steel pipe pile that would be up to 18 inches in diameter, have 1/2 inch-thick walls, and be positioned and installed in the footprint of the extracted timber pile. The new steel pipe piles would not be filled with concrete. Other material and hardware removed to conduct the pile replacement would be replaced with in-kind materials. Best management practices would be employed during demolition and construction activities to prevent debris from falling into the water.

Due to dense substrate at the project site, a majority of the steel pipe pile installation may require impact pile driving; however, pile driving would be conducted with a vibratory hammer to the extent feasible, with an impact hammer used for proofing the piles. Pre-drilling would be permitted and would be discontinued when the pile tip is approximately 5 feet above the required pile tip elevation. If the steel pipe pile cannot be driven 30 feet below the mudline with an

impact hammer due to the substrate or Jetty armor, the pile would be posted onto the armor stone using 36 inch-diameter concrete pedestals and dowels anchored into the armor stone. Concrete slurry would be used to cement stone within 5 feet of posted steel pipe piles to further secure the piles.

A sound attenuation system (i.e., bubble curtain) would be used during impact hammer pile driving. The bubble curtain creates an underwater wall of air around the pile to dissipate in-water sound waves.

Pile extraction and driving equipment would be located on a barge positioned in a manner that would not impede access to the floating docks; would be at a point along the Pier access road that does not disrupt Pier access; and that is secured from pedestrian movements. Pile extraction and driving equipment would not be located on the existing Pier.

Several proposed ancillary repairs to the Pier deck and floating dock are associated with this project. Specifically, under-deck repairs would restore bearings at pedestals and sea walls with non-shrink grout pads, and replace underwater pile struts. Above-deck repairs would include removing abandoned mooring hardware, replacing missing sections of curb, and replacing isolated deck planks that have deteriorated. Repairs to the floating dock would include repairing tie rods, repairing concrete spall, relocating and securing gangway wear plate(s), replacing cleats, replacing missing rubstrips, and replacing underwater pile struts.

Repairs to the potable water line would involve in-kind replacement of approximately 175 feet of 3 inch-diameter galvanized piping. The existing water line is on the outboard beam of the Pier, and is mounted by hangers. The new water line would be supported every 4 feet in the same alignment as the existing configuration. Three top side water standpipes would be

replaced as part of the water line replacement. All work for replacement of the potable water line would occur above Mean High Water.

The primary sources of underwater noise would be from the extraction of old piles and driving new steel pipe piles to support the Pier. The options for installing these piles include driving the piles the full length with an impact hammer (either diesel or hydraulic); or vibrating in the piles, with limited impact driving to proof the bearing of the piles; or partially installing the piles with an impact hammer and casting a cement footing at the interface of the jetty. At this time USGS has not decided what method will be used, so an analysis of both pile driving methods was conducted. Support piles would be between 14 and 18 inches in diameter. The analysis assumed the larger 18 inch size for the noise projections. Impact pile driving produces impulse noise, while vibratory pile extraction and driving produces non-impulse noise.

A review of underwater sound measurements for similar projects was undertaken to estimate the near-source sound levels for vibratory and impact pile driving. Sounds from similar-sized steel shell piles have been measured in water for several projects.

Vibratory Pile Installation Sound Generation

A review of available acoustic data for pile driving indicates that the recent Test Pile Program at Naval Base Kitsap at Bangor, Washington, provides the most extensive set of data. The project involved the installation of test piles of 24-, 36- and 48-inches in diameter using a vibratory driver. Most of the installed piles were 36 inches in diameter, and only one pile was 24-inch diameter. This Test Pile Program provided the average sound level based on the root mean squared (RMS) levels using a 10-second time constant. Most other data reported are based on maximum RMS values using a 1- to 10-second time constant (e.g., Caltrans Fish Guidance Manual 2009).

For 36-inch diameter piles driven by the Navy, the average RMS level for all pile driving events was 159 dB RMS at 33 feet or 10 meters. There was a considerable range in the RMS levels measured across a pile driving event, where the highest average RMS level was 169 dB RMS.

The range of vibratory sound levels at 33 feet or 10 meters reported by Caltrans is 155 dB for 12-inch diameter piles to 175 dB RMS for 36-inch diameter piles (based on maximum 1-second RMS levels). All of these piles were driven in relatively shallow water.

Noting that the piles to be used for this project will be smaller than those driven by the Navy for their Test Pile Program at Bangor, Washington, a near-source level of 168 dB RMS at 33 feet (10 meters) level was used to characterize the sound that would be produced from vibratory pile installation.

Impact Pile Driving Sound Generation

A review of existing data indicates that measurements conducted for the USCG Tongue Point Pier Repairs in the Columbia River are most representative. This project was located on the Columbia River near Astoria, Oregon. The purpose of the project was to repair the existing Tongue Point pier. The project included installation of 24-inch-diameter steel pipe piles to replace existing woodpiles, along with reconstruction of a concrete deck.

Data measured at the Tongue Point Pier Repair included similar types of pile driving on an existing pier in deep water. Although the length of the installed piles was similar to those proposed for this project, the diameters were larger than proposed for this project. The difference in pile size should not result in much, if any, difference in the expected noise levels from pile driving.

Average sound levels measured at Tongue Point include peak pressures of 189 to 207 dB, RMS sound pressure levels of 178 to 189 dB, and SEL levels of 160 to 175 dB per strike at 33 feet (10 meters). Sound levels associated with vibratory installation of the piles were not measured on this project. The ambient levels measured in between pile driving ranged from a RMS level of 115 to 125 dB. Due to the difference in pile sizes, use of the Tongue Point data would likely overestimate sound levels expected at the proposed USCG Station Monterey project. Based on the Tongue Point sound measurements, unattenuated near-source impact pile driving levels applicable to this project are 208 dB peak, 195 RMS and 175 dB SEL. Note, a substantially higher RMS level of 195 dB was assumed rather than 189 dB that was measured for Tongue Point. Typically, there is an approximately 10 to 15 dB difference in peak and RMS sound pressure levels. Assuming the higher peak pressure of 208 dB, an RMS level of 195 dB would typically occur. To provide a conservative estimate, the higher RMS sound pressure level was assumed for this assessment.

Airborne Noise

Based on airborne noise levels measured during the Navy Test Pile Project in Bangor, Washington (NAVFAC 2012), the greatest unweighted maximum noise level (L_{max}) was measured at 102 dB re 20 µPa, and the average L_{max} 97 dB re µPa at 50 feet (15 m) from the source. For impact pile driving, the greatest L_{max} was 112 dB re 20 µPa and the average L_{max} 103 dB re 20 µPa at 50 feet (15 m) from the source.

Description of Marine Mammals in the Area of the Specified Activity

The marine mammal species under NMFS jurisdiction most likely to occur in the proposed construction area include Pacific harbor seal (Phoca vitulina richardsi), California sea lion (Zalophus californianus), harbor porpoise (Phocoena phocoena), killer whale (Orcinus orca),

and gray whale (Eschrichtius robustus). The southern sea otter (Enhydra lutris) is managed by the U.S. Fish and Wildlife Service and is not considered further in this proposed IHA notice. A summary of marine mammal species under NMFS jurisdiction and their abundance and ESA-status are listed in Table 1.

General information on the marine mammal species found in California waters can be found in Caretta et al. (2013), which is available at the following URL: http://www.nmfs.noaa.gov/pr/sars/pdf/po2012.pdf. Refer to that document for information on these species. Specific information concerning these species in the vicinity of the proposed action area is provided below.

Table 1. List of Marine Mammal Species under NMFS Jurisdiction that Occur in the Vicinity of the USCG Station Monterey Waterfront Repair Area

Common Name	Scientific Name	Stock	ESA Status	Abundance
California sea lion	Zalophus californianus	U.S.	Not listed	296,750
Harbor seal	Phoca vitulina richardsi	California	Not listed	30,196
Harbor porpoise	Phocoena phocoena	Monterey Bay	Not listed	1,492
Killer whale	Orcinus orca	Eastern North Pacific offshore	Not listed	240
		West coast transient	Not listed	354
Gray whale	Eschrichtius robustus	Eastern North Pacific	Not listed	19,126

California Sea Lion

Monterey Bay California sea lions are part of the U.S. stock, which begins at the U.S./Mexico border and extends northward into Canada. The U.S. stock was estimated at 296,750 in the 2012 Stock Assessment Report (SAR) and may be at carrying capacity, although more data are needed to verify that determination (Carretta et al. 2013). Because different age and sex classes are not all ashore at any given time, the population assessment is based on an estimate of the number of births and number of pups in relation to the known population. The current population estimate is derived from visual surveys, conducted in 2007, of the different

age and sex classes observed ashore at the primary rookeries and haul-out sites in southern and central California, coupled with an assessment done in 2008 of the number of pups born in the southern California rookeries (Carretta et al. 2013). California sea lions are present year-round in Monterey Bay, with generally lower numbers during the summer months when some individuals return to southern California to breed.

California sea lions do not avoid areas with heavy or frequent human activity, but rather may approach certain areas to investigate. This species typically does not flush from a buoy or haulout if approached.

California sea lions are not listed under the ESA.

Harbor Seal

Harbor seals are members of the true seal family (Phocidae). For management purposes, differences in mean pupping date (Temte 1986), movement patterns (Jeffries 1985; Brown 1988), pollutant loads (Calambokidis et al. 1985), and fishery interactions have led to the recognition of three separate harbor seal stocks along the west coast of the continental U.S. (Boveng 1988). The three distinct stocks are: (1) Inland waters of Washington State (including Hood Canal, Puget Sound, Georgia Basin and the Strait of Juan de Fuca out to Cape Flattery), (2) outer coast of Oregon and Washington, and (3) California (Carretta et al. 2011). Harbor seals found in the vicinity of the proposed action area belong to the California stock.

Pacific harbor seals display year-round site fidelity, though they have been known to swim several hundred miles to find food or suitable breeding habitat. Although generally solitary in the water, harbor seals come ashore at haul-outs that are used for resting, thermoregulation, birthing, and nursing pups. Haul-out sites are relatively consistent from year to year (Kopec and Harvey 1995), and females have been recorded returning to their own natal

haul-out when breeding (Green et al. 2006). In the vicinity of the proposed action area, Pacific harbor seals are not known to regularly use the Jetty as a haul-out site, but may use beaches or other relatively low-gradient areas to haul-out in the project area, and in areas north such as beaches along Cannery Row.

Pacific harbor seals are present year-round in Monterey Bay and would be expected in the project area, though in much lower numbers than California sea lions (Lowry 2012). There are no known pupping sites in the vicinity of the project area, so Pacific harbor seal pups are not expected to be present during pile driving.

Harbor seals are not listed under the ESA.

Harbor Porpoise

The harbor porpoise is a member of the Phocoenidae family. In the eastern North Pacific, harbor porpoise are found in coastal and inland waters from Point Conception, California to Alaska and along at least the eastern Aleutian chain and eastern Bering Sea (Leatherwood et al. 1988). Along the west coast of the United States, harbor porpoise appear to have much less extensive home range and movement when compared to the same species in the east coast (Calambokidis and Barlow 1991). Recent genetic analyses of harbor porpoise population structure along the eastern North Pacific indicate that there is small scale subdivision within the U.S. portion of this range (Chivers et al. 2002). They are typically found in waters less than 80 m deep within bays, estuaries, and harbors. They generally occur in groups of two to five individuals, and are considered to be shy, nonsocial animals.

For management purposes, harbor porpoise found in Monterey Bay is treated as a separate stock (Monterey Bay stock). Harbor porpoises may be present year-round in Monterey Bay, but in relatively low numbers. Harbor porpoises are found in shallow sandy bottom regions

of the Monterey Bay shelf (Monterey Bay Whale Watch 2012) often within 300 m of shore (Sekiguchi 1995). They tend to be more abundant in areas north of Monterey Bay (Barlow 1988).

Harbor porpoises are not listed under the ESA.

Killer Whale

The West coast transient and the eastern North Pacific offshore stocks of killer whale may be found near the project site. Nevertheless, killer whales are relatively uncommon, migratory inhabitants of Monterey Bay. It would be extremely rare that killer whales would venture into shallow waters close to the project area, particularly within the harbor to the south of the jetty. They have been included here because in June 2011, four killer whales were sighted in the harbor by local fishermen (NBC Bay Area 201), though the article reported that an occurrence such as this, so close to shore, was extremely rare.

None of these two killer whale stock is listed under the ESA.

Gray Whale

During the winter and spring, the entire Eastern North Pacific stock of gray whale population migrates along the coast, generally within 3 km of the Monterey Bay coastline, traveling to their summer feeding grounds in the Bering Sea and to their winter breeding grounds in Baja California. It is expected that gray whales would very rarely venture into the shallow waters of the project area, particularly into Monterey Harbor south of the jetty.

The Eastern North Pacific stock of gray whale is not listed under the ESA.

Potential Effects of the Specified Activity on Marine Mammals

This section includes a summary and discussion of the ways that the types of stressors associated with the specified activity (in-water pile driving and pile removal) have been observed

to impact marine mammals. This discussion may also include reactions that we consider to rise to the level of a take and those that we do not consider to rise to the level of a take (for example, with acoustics, we may include a discussion of studies that showed animals not reacting at all to sound or exhibiting barely measurable avoidance). This section is intended as a background of potential effects and does not consider either the specific manner in which this activity will be carried out or the mitigation that will be implemented, and how either of those will shape the anticipated impacts from this specific activity. The "Estimated Take by Incidental Harassment" section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The "Negligible Impact Analysis" section will include the analysis of how this specific activity will impact marine mammals and will consider the content of this section, the "Estimated Take by Incidental Harassment" section, the "Proposed Mitigation" section, and the "Anticipated Effects on Marine Mammal Habitat" section to draw conclusions regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

Acoustic Impacts

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms have been derived using auditory evoked potentials, anatomical modeling, and other data, Southall et al. (2007) designate "functional hearing groups" for marine mammals and estimate the lower and upper frequencies of functional hearing of the groups. The functional groups and the associated frequencies are indicated below (though animals are less sensitive to sounds at the outer edge of their functional

range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their functional hearing range):

- Low frequency cetaceans (13 species of mysticetes): functional hearing is estimated to occur between approximately 7 Hz and 22 kHz (however, a study by Au et al. (2006) of humpback whale songs indicate that the range may extend to at least 24 kHz);
- Mid-frequency cetaceans (32 species of dolphins, six species of larger toothed whales, and 19 species of beaked and bottlenose whales): functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High frequency cetaceans (eight species of true porpoises, six species of river dolphins, Kogia, the franciscana, and four species of cephalorhynchids): functional hearing is estimated to occur between approximately 200 Hz and 180 kHz; and
- Pinnipeds in Water: functional hearing is estimated to occur between approximately 75 Hz and 75 kHz, with the greatest sensitivity between approximately 700 Hz and 20 kHz.

As mentioned previously in this document, five marine mammal species (three cetacean and two pinniped species) are likely to occur in the proposed seismic survey area. Of the three cetacean species likely to occur in USCG's proposed project area, the gray whale is classified as a low-frequency cetacean, the killer whale is classified as a mid-frequency cetacean, and harbor porpoise is classified as a high-frequency cetacean (Southall et al. 2007). A species functional hearing group is a consideration when we analyze the effects of exposure to sound on marine mammals.

USCG and NMFS determined that in-water pile removal and pile driving during the Station Monterey waterfront repair project has the potential to result in behavioral harassment of marine mammal species and stocks in the vicinity of the proposed activity.

Marine mammals exposed to high intensity sound repeatedly or for prolonged periods can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Kastak et al. 1999; Schlundt et al. 2000; Finneran et al. 2002; 2005). TS can be permanent (PTS), in which case the loss of hearing sensitivity is unrecoverable, or temporary (TTS), in which case the animal's hearing threshold will recover over time (Southall et al. 2007). Since marine mammals depend on acoustic cues for vital biological functions, such as orientation, communication, finding prey, and avoiding predators, hearing impairment could result in the reduced ability of marine mammals to detect or interpret important sounds. Repeated noise exposure that leads to TTS could cause PTS.

Experiments on a bottlenose dolphin (Tursiops truncates) and beluga whale (Delphinapterus leucas) showed that exposure to a single watergun impulse at a received level of 207 kPa (or 30 psi) peak-to-peak (p-p), which is equivalent to 228 dB (p-p) re 1 μPa, resulted in a 7 and 6 dB TTS in the beluga whale at 0.4 and 30 kHz, respectively. Thresholds returned to within 2 dB of the pre-exposure level within 4 minutes of the exposure (Finneran et al. 2002). No TTS was observed in the bottlenose dolphin. Although the source level of pile driving from one hammer strike is expected to be much lower than the single watergun impulse cited here, animals being exposed for a prolonged period to repeated hammer strikes could receive more noise exposure in terms of SEL than from the single watergun impulse (estimated at 188 dB re 1 μPa^2-s) in the aforementioned experiment (Finneran et al. 2002).

Chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark et al. 2009). Masking can interfere with detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired.

Masking occurs at the frequency band which the animals utilize. Therefore, since noise generated from in-water vibratory pile driving and removal is mostly concentrated at low frequency ranges, it may have less effect on high frequency echolocation sounds by odontocetes (toothed whales). However, lower frequency man-made noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. It may also affect communication signals when they occur near the noise band and thus reduce the communication space of animals (e.g., Clark et al. 2009) and cause increased stress levels (e.g., Foote et al. 2004; Holt et al. 2009).

Unlike TS, masking can potentially impact the species at population, community, or even ecosystem levels, as well as individual levels. Masking affects both senders and receivers of the signals and could have long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels have increased by as much as 20 dB (more than 3 times in terms of SPL) in the world's ocean from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). All anthropogenic noise sources, such as those from vessels traffic and pile driving and removal, contribute to the elevated ambient noise levels, thus intensify masking.

Nevertheless, the sum of noise from the proposed USCG Station Monterey waterfront repair construction activities is confined in an area that is largely bounded by jetty and landmass, therefore, the noise generated is not expected to contribute to increased ocean ambient noise. Due to shallow water depths near the jetty, underwater sound propagation for low-frequency sound (which is the major noise source from pile driving) is expected to be poor.

Finally, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson et al. 1995), such as: changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities, changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping), avoidance of areas where noise sources are located, and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries).

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification could be expected to be biologically significant if the change affects growth, survival, and reproduction. Some of these significant behavioral modifications include:

- Drastic change in diving/surfacing patterns (such as those thought to be causing beaked whale stranding due to exposure to military mid-frequency tactical sonar);
- Habitat abandonment due to loss of desirable acoustic environment; and
- Cease feeding or social interaction.

The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography), and is also difficult to predict (Southall et al. 2007).

The proposed project area is not a prime habitat for marine mammals, nor is it considered an area frequented by marine mammals. Therefore, behavioral disturbances that could result from anthropogenic noise associated with USCG waterfront repair activities are expected to affect only a small number of marine mammals on an infrequent basis.

Visual Disturbance

The activities of workers in the project area may also cause behavioral reactions of marine mammals, such as pinnipeds flushing from the jetty or pier, or moving farther from the disturbance to forage. The jetty is partially accessible for public use and experiences moderate to heavy foot traffic from fishermen and tourists along the western portion of the jetty. The California sea lions use the fenced-off eastern portion of the jetty and the area beneath the pier as haul-out sites and appear to be well habituated to human activity, often tolerating humans at a distance of just a few feet beyond the fences or dock areas that separate humans from the hauled-out animals.

Observations made by Harvey and Hoover (2009) during previous repairs of the pier indicated very little disturbance of marine mammals, particularly on the eastern portion of the jetty. They concluded that the animals did not seem to be behaviorally modified by the presence of the construction activities. The only potential disturbance seemed to occur during diving operations, which may have startled some individuals. The presence of workers is likely to affect only animals within close proximity to the workers and is not expected to affect animals on the jetty outside of the work area. The presence of workers would not result in population level impacts or affect the long-term fitness of the species.

Anticipated Effects on Marine Mammal Habitat

No permanent impacts to habitat are proposed to or would occur as a result of the proposed project. The USCG's proposed Station Monterey waterfront repair activity would not increase the pier's existing footprint, and no new structures would be installed that would result in the loss of additional habitat. Therefore, no restoration of the habitat would be necessary. A temporary, small-scale loss of foraging habitat may occur for marine mammals if marine mammals leave the area during pile extraction and driving activities.

Acoustic energy created during pile replacement work would have the potential to disturb fish within the vicinity of the pile replacement work. As a result, the affected area could temporarily lose foraging value to marine mammals. During pile driving, high noise levels may exclude fish from the vicinity of pile driving. Hastings and Popper (2005) identified several studies that suggest fish will relocate to avoid areas of damaging noise energy. The acoustic frequency and intensity ranges that have been shown to negatively impact fish (FHWG 2008) and an analysis of potential noise output of the proposed project, indicate that the distance from underwater pile driving at which noise has the potential to cause temporary hearing loss in fish over a distance of approximately 42 meters from pile driving activity, or approximately 0.003 km^2 inside the harbor south of the jetty. Therefore, if fish leave the area of disturbance, pinniped foraging habitat may have temporarily decreased foraging value when piles are driven using impact hammering.

The duration of fish avoidance of this area after pile driving stops is unknown. However, the affected area represents an extremely small portion of the total area within foraging range of marine mammals that may be present in the project area.

Monterey Bay is classified as Essential Fish Habitat (EFH) under the Magnuson-Stevens Fisheries Conservation and Management Act, as amended by the Sustainable Fisheries Act. The

EFH provisions of the Sustainable Fisheries Act are designed to protect fisheries habitat from being lost due to disturbance and degradation. The act requires implementation of measures to conserve and enhance EFH. The Monterey Bay is classified as an EFH for 118 species of commercially important fish, 30 of which have potential to occur within the project area. Some of these species are likely prey to pinnipeds and occasionally southern sea otters. In addition to EFH designations, portions of the Monterey Bay are designated as a Habitat Area of Particular Concern (HAPC) for various fish species within the Pacific Groundfish, Pacific Coast Salmon, Highly Migratory Species, and Coastal Pelagic Fisheries management plans. These HAPC areas include kelp forest and rocky reef habitats, both of which occur in and adjacent to the Project Area.

Given the short daily duration of increased underwater and airborne noise levels associated with the project, the relatively small areas being affected, and the impact avoidance and minimization measures, the proposed project is not likely to have a permanent, adverse effect on EFH. Therefore, the project is not likely to have a long term adverse effect on marine mammal foraging habitat.

Because of the short duration and relative small area of the habitat that may be affected, the impacts to marine mammals and the food sources that they utilize are not expected to cause significant or long-term consequences for individual marine mammals or their populations.

Proposed Mitigation

In order to issue an incidental take authorization (ITA) under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable 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 (where relevant).

For the proposed USCG Station Monterey waterfront repair activities, USCG worked with NMFS and proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity. The primary purpose of these mitigation measures is to detect marine mammals within or about to enter designated exclusion zones corresponding to NMFS current injury thresholds and to initiate immediate shutdown or power down of the piling hammer, making it very unlikely potential injury or TTS to marine mammals would occur, and to reduce Level B behavioral of marine mammals would be reduced to the lowest level practicable.

Use of Noise Attenuation Devices

Noise attenuation systems (i.e., bubble curtains) will be used during all impact pile driving to interrupt the acoustic pressure and reduce the impact on marine mammals. By reducing underwater sound pressure levels at the source, bubble curtains would reduce the area over which both Level A and B harassment would occur, thereby potentially reducing the numbers of marine mammals affected.

With the bubble curtain system in place, the exclusion zone within which marine mammal injury could occur is eliminated.

Time Restriction

Work would occur only during daylight hours when visual monitoring of marine mammals can be implemented.

Establishment of Level B Harassment Zones of Influence

Before the commencement of in-water pile driving activities, USCG shall establish Level B behavioral harassment zones of influence (ZOIs) where received underwater sound pressure levels (SPLs) are higher than 160 dB (rms) and 120 dB (rms) re 1 μPa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively. The modeled maximum isopleths for ZOIs are listed in Table 2.

Table 2. Modeled Level B harassment zones of influence for various pile driving activities

Pile Driving Activities	Distance to 120 dB re 1 μPa (rms) (m)	Distance to 160 dB re 1 μPa (rms) (m)
Vibratory pile driving	2,400	NA
Impact pile driving (with bubble curtain)	NA	465

Once the underwater acoustic measurements are conducted during initial test pile driving, USCG shall adjust the size of the ZOIs, and monitor these zones as described under the Proposed Monitoring section below.

NMFS-approved protected species observers (PSOs) shall conduct initial survey of the exclusion zones to ensure that no marine mammals are seen within the zones before impact pile driving of a pile segment begins. If marine mammals are found within the exclusion zone, impact pile driving of the segment would be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes for pinnipeds and harbor porpoise and 30 minutes for gray and killer whales. If no marine mammals are seen by the observer in that time it can be assumed that the animal has moved beyond the exclusion zone. This 15-minute criterion is based on scientific evidence that harbor seals in San Francisco Bay dive for a mean time of 0.50 minutes to 3.33 minutes (Harvey and Torok, 1994), and the mean diving duration for harbor porpoises ranges from 44 to 103 seconds (Westgate et al., 1995).

Soft Start

A "soft-start" technique is intended to allow marine mammals to vacate the area before the pile driver reaches full power. For vibratory hammers, the contractor will initiate the driving for 15 seconds at reduced energy, followed by a 1 minute waiting period when there has been downtime of 30 minutes or more. This procedure shall be repeated two additional times before continuous driving is started. This procedure would also apply to vibratory pile extraction.

For impact driving, an initial set of three strikes would be made by the hammer at 40 percent energy, followed by a 1 minute waiting period, then two subsequent three-strike sets before initiating continuous driving.

Shutdown Measures

Although no marine mammal exclusion zone exists due to the implementation of noise attenuation devices (i.e., bubble curtain), USCG shall discontinue pile driving or pile removal activities if a marine mammal within the ZOI appears disturbed by the work activity. Work may not resume until the animal leaves the ZOI, or 30 minutes have passed before the disturbed animal is last sighted.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals

- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(1.) Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

(2.) A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of pile driving and pile removal or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

(3.) A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of pile driving and pile removal, or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

(4.) A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of pile driving, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).

(5.) Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically

important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

(6.) For monitoring directly related to mitigation – an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

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

Proposed Monitoring and Reporting

In order to issue an ITA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth, "requirements pertaining to the monitoring and reporting of such taking." The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. USCG submitted a marine mammal monitoring plan as part of the IHA application. It can be found at http://www.nmfs.noaa.gov/pr/permits/incidental.htm. The plan may be modified or supplemented based on comments or new information received from the public during the public comment period.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

(1.) An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;

(2.) An increase in our understanding of how many marine mammals are likely to be exposed to levels of pile driving that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS;

(3.) An increase in our understanding of how marine mammals respond to stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival) through any of the following methods:

- Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

(4.) An increased knowledge of the affected species; and

(5.) An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

Proposed Monitoring Measures

USCG shall employee NMFS-approved PSOs to conduct marine mammal monitoring for its Station Monterey waterfront repair project.

Before the start of the waterfront repair work, baseline biological monitoring shall be conducted to survey the potential Level A and B harassment zones on 2 separate days within 1 week before the first day of construction. Biological information collected during baseline monitoring will be used for comparison with results of monitoring during pile driving and removal activities.

Monitoring of marine mammals around the construction site shall be conducted using high-quality binoculars (e.g., Zeiss, 10 x 42 power).

Marine mammal visual monitoring shall be conducted from the best vantage point available, including the USCG pier, jetty, adjacent docks within the harbor, to maintain an excellent view of the exclusion zone and adjacent areas during the survey period. Monitors would be equipped with radios or cell phones for maintaining contact with work crews.

Vessel-based visual marine mammal monitoring within the 120 dB and 160 dB ZOIs shall be conducted during 10% of the vibratory pile driving and removal and impact pile driving activities, respectively.

Data collection during marine mammal monitoring will consist of a count of all marine mammals by species, a description of behavior (if possible), location, direction of movement, type of construction that is occurring, time that pile replacement work begins and ends, any acoustic or visual disturbance, and time of the observation. Environmental conditions such as weather, visibility, temperature, tide level, current and sea state would also be recorded.

Reporting Measures

USCG would be required to submit weekly monitoring reports that summarize the monitoring results, construction activities and environmental conditions to NMFS.

A final report would be submitted to NMFS within 90 days after completion of the proposed project.

In addition, NMFS would require USCG to notify NMFS' Office of Protected Resources and NMFS' Stranding Network within 48 hours of sighting an injured or dead marine mammal in the vicinity of the construction site. USCG shall provide NMFS with the species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that an injured or dead marine mammal is found by USCG that is not in the vicinity of the Station Monterey construction site, USCG would report the same information as listed above as soon as operationally feasible to NMFS.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, 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].

As discussed above, in-water pile driving (vibratory and impact) and pile removal generate loud noises that could potentially harass marine mammals in the vicinity of the USCG's proposed Station Monterey waterfront repair.

Currently NMFS uses 120 dB re 1 µPa and 160 dB re 1 µPa at the received levels for the onset of Level B harassment for non-impulse (vibratory pile driving and removal) and impulse sources (impact pile driving) underwater, respectively. For airborne noises, NMFS uses 90 dB re 20 µPa and 100 dB re 20 µPa at the received levels for the onset of Level B harassment for harbor seal and all pinnipeds except harbor seal, respectively. Table 3 summarizes the current NMFS marine mammal take criteria.

Table 3. Current Acoustic Exposure Criteria for Non-explosive Sound

Criterion	**Criterion Definition**	**Threshold**
Underwater Noise		
Level A Harassment (Injury)	Permanent Threshold Shift (PTS) (Any level above that which is known to cause TTS)	180 dB re 1 µPa (cetaceans) / 190 dB re 1 µPa (pinnipeds) root mean square (rms)
Level B Harassment	Behavioral Disruption (for impulse noises)	160 dB re 1 µPa (rms)
Level B Harassment	Behavioral Disruption (for non-impulse noise)	120 dB re 1 µPa (rms)
Airborne Noise		
Level B Harassment	Behavioral Disruption (for harbor seal)	90 dB re 20 µPa
Level B Harassment	Behavioral Disruption (for pinnipeds other than harbor seal)	100 dB re 20 µPa

The take calculations presented here relied on the best data currently available for marine mammal populations at the jetty and in the nearby waters of Monterey Bay. The population data used are discussed in each species take calculation subsection below. The formula below was developed for calculating take due to pile driving and is applied to each group-specific noise impact threshold. The formula is founded on the following assumptions:

- All piles to be installed would have a noise disturbance distance equal to the pile that causes the greatest noise disturbance (i.e., the piling furthest from shore, in this case the farthest east pile along the jetty).

- It is estimated that an average of two or three piles will be installed and removed per day. The best estimate of the number of days during which pile driving would occur is 10 days, and this was used in all modeling calculations.
- Mitigation (e.g., a noise attenuation system such as a bubble curtain) would be used during impact pile driving.
- An individual animal can only be taken once per method of installation during a 24 hour period.

The calculation for marine mammal take uses the following formula:

Take Estimate = (n × ZOI) × 10 days of activity

Where:

n (number of animals per unit area) = The density estimate used for each species. The unit of area is km^2.

ZOI (zone of influence) = the area encompassed by all locations where the sound pressure levels equal or exceed the threshold being evaluated.

Multiplying n × ZOI produces an estimate of the abundance of animals that could be present in the area of exposure per day. The final take estimate must be a whole number; therefore, values are rounded up to the next whole number.

The ZOI impact is the estimated range of noise impact for a given threshold. Because the work will be conducted near the jetty, underwater noise is not expected to spread spherically from the source. Underwater noise contours were therefore modeled using SoundPlan. The contours were then imported to ArcGIS to calculate the area within the contours and determine the AOI for each threshold. The ZOI for vibratory pile driving encompasses the area out to the 120 dB isopleth (Level B threshold), while the ZOI for impact driving encompasses the area out

to the 160 dB isopleth (Level B threshold). It is assumed that an underwater noise attenuation system, such as a bubble curtain with an estimated 10 dB attenuation, would be used as a mitigation measure. However, the actual attenuation that will be achieved in the field is unknown and would likely vary with each installation.

Airborne noise would spread spherically from the source; therefore, the ZOI for airborne impacts was calculated as the area within a circle (Area = pi × radius^2).

Although 10 days of total in-water work are proposed, pile extraction or driving would only occur periodically in that time, as described in earlier in this document. An average work day (beginning 2 hours after sunrise and ending 2 hours before sunset) is approximately 8 to 9 hours, depending on the month. Although it is anticipated that only 30 to 70 minutes would be spent pile driving per day, to take into account deviations from the estimated times for pile installation and extraction—and to account for the additional use of the impact pile driver in case of failure of the vibratory hammer to reach the desired embedment depth—the potential impacts were modeled as if the entire day could be spent pile driving.

The exposure assessment methodology estimates the number of individuals that would be exposed, because of pile extraction and driving activities, to noise levels that exceed established NMFS thresholds. Results of the acoustic impact exposure assessments should be regarded as conservative estimates that are strongly influenced by limited biological data. Although the numbers generated from the pile driving exposure calculations provide estimates of marine mammal exposures for consideration by NMFS, the short duration and limited extent of the repairs would limit actual exposures.

Based on the modeling results presented above, it is estimated that up to 2,095 Level B harassment takes of various species due to underwater and airborne noise from impact pile

driving operations, and up to 2,760 Level B harassment takes of various species from vibratory pile driving and removal due to underwater and airborne noise. A summary of the take estimates is provided in Table 4.

Table 4. Summary of potential marine mammal takes and percentage of stocks affected.

	Estimated Density	Estimated Take by Level B Harassment	Abundance of Stock	Percentage of Stock Potentially Affected	Population Trend
California sea lion	At-sea: 8.62 per km^2 Haul-out: 250	4,231	396,750	1.06%	Stable
Harbor seal	0.965 pre km^2	70	30,196	0.20%	Stable
Harbor porpoise	0.05 pre km^2	4	1,492	0.27%	Stable
Killer whale (Eastern North Pacific offshore)	Rare	6	240	2.50%	Stable
Killer whale (west coast transient)	Rare	6	354	1.70%	Stable
Gray whale	Rare	6	19,126	0.03%	Stable

Analysis and Preliminary Determinations

Negligible Impact

Negligible impact is "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 Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to

considering estimates of the number of marine mammals that might be "taken" through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, and effects on habitat.

The USCG's proposed Station Monterey waterfront repair project would conduct pile driving and pile removal activities. Elevated underwater noises are expected to be generated as a result of pile driving and pile removal. However, USCG would use noise attenuation devices (i.e., bubble curtain) during the impact pile driving, thus eliminating potential for injury (PTS) and TTS. For vibratory pile driving and pile removal, noise levels are not expected to reach to the level that may cause TTS, injury (PTS included), or mortality to marine mammals. Therefore, NMFS does not expect that any animals would experience Level A (including injury) harassment or Level B harassment in the form of TTS from being exposed to in-water pile driving and pile removal associated with USCG construction project.

In addition, the USCG's proposed activities are localized and of short duration. The entire project area is limited to the USCG's Station Monterey pier and jetty. The entire waterfront repair project would replace 17 timber piles with relative small 14-inch steel pipe piles. The entire duration for pile driving is expected to be fewer than 10 days, assuming driving two piles per day. The duration for driving each pile would be about 20 to 25 minutes (vibratory or impact). These low intensity, localized, and short-term noise exposures may cause brief startle reactions or short-term behavioral modification by the animals. These reactions and behavioral changes are expected to subside quickly when the exposures cease. Additionally, no important feeding and/or reproductive areas for marine mammals are known to be near the

proposed action area. Therefore, the take resulting from the proposed Station Monterey waterfront repair project is not reasonably expected to, and is not reasonably likely to, adversely affect the marine mammal species or stocks through effects on annual rates of recruitment or survival. Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from USCG Station Monterey waterfront repair will have a negligible impact on the affected marine mammal species or stocks.

Small Number

Based on analyses provided above, it is estimated that approximately 4,231 California sea lions, 70 Pacific harbor seals, 4 harbor porpoises, 6 Eastern North Pacific offshore or West coast transient killer whales (or a combination of both stocks), and 6 gray whales could be exposed to received noise levels that could cause Level B behavioral harassment from the proposed construction work at the USCG Station Monterey. These numbers represent approximately 0.03% - 2.5% of the stocks and populations of these species that could be affected by Level B behavioral harassment.

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 mitigation and monitoring measures, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the populations 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 this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not

have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

No species listed under the ESA are expected to be affected by these activities. Therefore, NMFS has determined that a section 7 consultation under the ESA is not required.

National Environmental Policy Act (NEPA)

In July 2013, the USCG prepared a Draft Environmental Assessment for Waterfront Repairs at United States Coast Guard Station Monterey, Monterey, California (draft EA). This draft EA has been posted on NMFS' website http://www.nmfs.noaa.gov/pr/permits/incidental.htm. NMFS will review the draft EA and decide either to adopt it or prepare its own NEPA document before making a determination on the issuance of an IHA, which will be completed prior to the issuance or denial of this proposed IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to USCG for conducting waterfront repair at its Station Monterey, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The proposed IHA language is provided next.

This section contains a draft of the IHA itself. The wording contained in this section is proposed for inclusion in the IHA (if issued).

(1.) This Authorization is valid from July 15, 2014, through July 14, 2015.

(2.) This Authorization is valid only for activities associated with waterfront repair project at the USCG's Monterey Station in Monterey, California.

(3.) (A) The species authorized for incidental harassment takings, Level B harassment only, are: Pacific harbor seal (Phoca vitulina richardsi), California sea lion (Zalophus californianus), harbor porpoise (Phocoena phocoena), transient and offshore killer whales (Orcinus orca), and gray whale (Eschrichtius robustus).

(B) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:

- Impact and vibratory pile driving;
- Pile removal; and
- Work associated with above piling activities.

(C) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the West Coast Regional Administrator (562) 980-4000, National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401, or his designee (301-427-8401).

(4.) The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of activities identified in 3(b) (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible).

(5.) Prohibitions

(A) The taking, by incidental harassment only, is limited to the species listed under condition (3.)(A) above and by the numbers listed in Table 4. The taking by Level A harassment, injury or death of these species or the taking by harassment, injury or death of any

other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

(B) The taking of any marine mammal is prohibited whenever the required protected species observers (PSOs), required by condition 7(a), are not present in conformance with condition 7(a) of this Authorization.

(6.) Mitigation

(A) Use of Noise Attenuation Devices

Pile driving energy attenuator (such as air bubble curtain system) shall be used for all impact pile driving.

(B) Time Restriction

In-water construction work shall occur only during daylight hours when visual monitoring of marine mammals can be implemented.

(C) Establishment of Level B Harassment Zones of Influence

(i) Before the commencement of in-water pile driving activities, USCG shall establish Level B behavioral harassment zones of influence (ZOIs) where received underwater sound pressure levels (SPLs) are higher than 160 dB (rms) and 120 dB (rms) re 1 μPa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively. The modeled isopleths for ZOIs are listed in Table 5.

Table 5. Modeled Level B harassment zones of influence for various pile driving activities

Pile Driving Activities	Distance to 120 dB re 1 μPa (rms) (m)	Distance to 160 dB re 1 μPa (rms) (m)
Vibratory pile driving	2,400	NA
Impact pile driving (with bubble curtain)	NA	465

(ii) Once the underwater acoustic measurements are conducted during initial test pile driving, USCG shall adjust the size of the ZOIs, and monitor these zones as described under the Proposed Monitoring section below.

(D) Monitoring for marine mammal presence shall take place 30 minutes before and 30 minutes after pile driving.

(E) Soft Start

(i) For vibratory hammers, the contractor shall initiate the driving for 15 seconds at reduced energy, followed by a 1 minute waiting period when there has been downtime of 30 minutes or more. This procedure shall be repeated two additional times before continuous driving is started. This procedure shall also apply to vibratory pile extraction.

(ii) For impact driving, an initial set of three strikes would be made by the hammer at 40 percent energy, followed by a 1 minute waiting period, then two subsequent three-strike sets before initiating continuous driving.

(f) Shutdown Measures

Although no marine mammal exclusion zone exists due to the implementation of noise attenuation devices (i.e., bubble curtain), USCG shall discontinue pile driving or pile removal activities if a marine mammal within the ZOI appears disturbed by the work activity. Work may resume until the animal leaves the ZOI, or 30 minutes have passed before the disturbed animal is last sighted.

(7.) Monitoring:

(A) Protected Species Observers

USCG shall employee NMFS-approved protected species observers (PSOs) to conduct marine mammal monitoring for its Station Monterey waterfront repair project.

(B) Baseline Biological Monitoring

(i) Baseline biological monitoring shall be conducted to survey the potential Level A and B harassment zones on 2 separate days within 1 week before the first day of construction.

(ii) Biological information collected during baseline monitoring will be used for comparison with results of monitoring during pile driving and removal activities.

(C) Monitoring of marine mammals around the construction site shall be conducted using high-quality binoculars (e.g., Zeiss, 10 x 42 power).

(D) Marine mammal visual monitoring shall be conducted from the best vantage point available, including the USCG pier, jetty, adjacent docks within the harbor, to maintain an excellent view of the exclusion zone and adjacent areas during the survey period. Monitors would be equipped with radios or cell phones for maintaining contact with work crews.

(E) Vessel-based visual marine mammal monitoring within the 120 dB and 160 dB ZOIs shall be conducted during 10% of the vibratory pile driving and removal and impact pile driving activities, respectively.

(F) Data collection during marine mammal monitoring shall consist of a count of all marine mammals by species, a description of behavior (if possible), location, direction of movement, type of construction that is occurring, time that pile replacement work begins and ends, any acoustic or visual disturbance, and time of the observation. Environmental conditions such as weather, visibility, temperature, tide level, current and sea state would also be recorded.

(8.) Reporting:

(A) USCG shall submit weekly monitoring reports that summarize the monitoring results, construction activities and environmental conditions to NMFS.

(B) USCG shall provide NMFS with a draft monitoring report within 90 days of the conclusion of the construction work. This report shall detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed.

(C) If comments are received from the NMFS West Coast Regional Administrator or NMFS Office of Protected Resources on the draft report, a final report shall be submitted to NMFS within 30 days thereafter. If no comments are received from NMFS, the draft report will be considered to be the final report.

(D) In the unanticipated event that the construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization (if issued), such as an injury, serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), USCG shall immediately cease all operations and immediately report the incident to the Supervisor of Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the following information:

(i) time, date, and location (latitude/longitude) of the incident;

(ii) description of the incident;

(iii) status of all sound source use in the 24 hours preceding the incident;

(iv) environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility, and water depth);

(v) description of marine mammal observations in the 24 hours preceding the incident;

(vi) species identification or description of the animal(s) involved;

(vii) the fate of the animal(s); and

(viii) photographs or video footage of the animal (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with WSF to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. USCG may not resume their activities until notified by NMFS via letter, email, or telephone.

(E) In the event that USCG discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), USCG will immediately report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with WSF to determine whether modifications in the activities are appropriate.

(F) In the event that USCG discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), USCG shall report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators, within 24 hours of the discovery. WSF shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. USCG can continue its operations under such a case.

(9.) This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein or if the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.

(10.) A copy of this Authorization must be in the possession of each contractor who performs the waterfront repair work at USCG Station Monterey.

Request for Public Comments

NMFS requests comment on our analysis, the draft authorization, and any other aspect of the Notice of Proposed IHA for USCG. Please include with your comments any supporting data or literature citations to help inform our final decision on USCG request for an MMPA authorization.

Dated: March 5, 2014.

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Donna S. Wieting,
Director,
Office of Protected Resources,
National Marine Fisheries Service.

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