Fisheries and Protected Resources'' in the subject line of the message.

Instructions: Response to this request for information (RFI) is voluntary. Respondents may comment on fisheries, protected resources or both. For all submissions, clearly indicate which issue(s) are being addressed. Email attachments will be accepted in plain text, Microsoft Word, or Adobe PDF formats only. Each individual or institution is requested to submit only one response. The Department of Commerce may post responses to this RFI, without change, on a Federal website. NOAA, therefore, requests that no business proprietary information, copyrighted information, or personally identifiable information be submitted in response to this RFI. Please note that the U.S. Government will not pay for response preparation, or for the use of any information contained in the response.

FOR FURTHER INFORMATION CONTACT: Heather Sagar, *heather.sagar@noaa.gov,* 301–427–8019.

SUPPLEMENTARY INFORMATION: On January 27, 2021, the President signed a new Executive Order on Tackling the Climate Crisis at Home and Abroad. Section 216(c) of the Executive Order requires the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, to collect input from fishermen, regional ocean councils, fishery management councils, scientists, and other stakeholders on how to make fisheries and protected resources more resilient to climate change, including changes in management and conservation measures, and improvements in science, monitoring, and cooperative research.

Dated: February 24, 2021.

Benjamin Friedman,

Deputy Under Secretary for Operations, Performing the Duties of Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XA810]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Berth III New Mooring Dolphins Project in Ketchikan, Alaska

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to the City of Ketchikan, Alaska (COK) to incidentally harass, by Level A and B harassment, marine mammals during construction activities associated with the Berth III New Mooring Dolphins Project in Ketchikan, AK.

DATES: This Authorization is effective for a period of one year, from October 1, 2021 through September 30, 2022.

FOR FURTHER INFORMATION CONTACT: Robert Pauline, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.* In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions, sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are 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 in shorthand as ''mitigation''); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On May 14, 2020, NMFS received a request from COK for an IHA to take marine mammals incidental to construction activities associated with the Berth III Mooring Dolphin Project in Ketchikan, Alaska. After several revisions, the application was deemed adequate and complete on September 22, 2021. COK's request is for take of nine species of marine mammals by harassment, including Level A harassment of three of these species. Neither COK nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of the Specified Activity

COK plans to make improvements to Berth III, in order to accommodate a new fleet of large cruise ships (*i.e.* Bliss class) and to meet the needs of the growing cruise ship industry and its vessels in Southeast Alaska. Expansion activities include vibratory pile removal, vibratory pile driving, impact pile driving and down-the-hole (DTH) pile installation. Underwater sound generated by these in-water activities may result in harassment including Level B harassment and Level A harassment of marine mammal species. In-water work is scheduled to occur over approximately 120 days between October 1, 2021 and March 13, 2022 although the IHA would be effective until September 30, 2022.

The proposed project would install three new mooring dolphins (MD) with one at the north end of Berth III (MD#2) and two at the south end (MD#3 & MD#4) as shown in Figure 2 in COK's IHA application (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/*

incidental-take-authorizations-construction-activities). A total of 20 piles will be installed. Eight of the piles are temporary template piles and would be removed as shown in Table 1. Pile driving will be conducted from an anchored barge, utilizing vibratory and impact hammers to install and remove piles and DTH pile installation to position rock sockets and tension anchors. Rock socketing is a process where a pile is driven by conventional vibratory and impact hammers until reaching solid bedrock. If at that point the pile cannot support the needed load, a hole can be drilled into the rock with a DTH system to allow the pile to be anchored up to 10 or more feet into the solid rock. Tension anchoring involves creating an anchor hole that is smaller in diameter than the pile. The holes extend 10 to 20 feet or more below the bottom of the pile. A steel bar or other anchoring structure (*e.g.,* rebar frame) is then grouted or cemented in place from the bottom of the anchor hole and extending up to the top of the pile. Attaching the anchor bar or frame to the pile then helps anchor the pile in place to support the required project loads.

TABLE 1—PROJECT PILE TYPES AND QUANTITIES

Location	Item	Size and type	Qty
MD#2	Dolphin and Fender Piles	48-inch (1.22 m) steel pipe piles	6
	Temporary Template Piles	30-inch (0.76 m) steel pipe piles	8
MD#3	Dolphin Piles	36-inch (0.9 m) steel pipe piles	3
MD#4	Dolphin Piles	36-inch (0.9 m) steel pipe piles	3

A detailed description of the planned Berth III New Mooring Dolphins Project is provided in the **Federal Register** notice for the proposed IHA (85 FR 71612; November 10, 2020). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

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

Comments and Responses

A notice of NMFS's proposal to issue an IHA to COK was published in the **Federal Register** on November 12, 2020 (85 FR 71612). That notice described, in detail, COK's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (Commission). Please see the Commission's letter for full details regarding their recommendations and rationale. The letter is available online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-berth-iii-new-mooring-dolphins-project-ketchikan-alaska.* A summary of the Commission's recommendations as well as NMFS' responses is below.

Comment 1: The Commission inquired about the methodology used to extrapolate the source level for DTH installation of 48-inch piles and recommended that NMFS publish a revised authorization for public comment that fully describes its extrapolation method before issuing any final authorization to COK.

Response: The extrapolation technique and software packages employed by NMFS and described below are commonly used and widely accepted by the scientific community. In summary, NMFS ran regressions in the R programming language (version 3.5.1) using the R Commander Graphical User Interface. Data were average source levels from recordings of single piles and available covariates (*e.g.,* water depth, pile depth, hole size, distance of sound source measurement) where NMFS had access to published and unpublished DTH monitoring data. The Generalized Linear Model routine in R Commander was used to assess the fit of linear and non-linear multiple regression models of the data. Model assumptions were assessed graphically and mathematically and the best fit of models that fit statistical assumptions and retained statistically significant covariates was chosen mathematically. The best fit model was used to calculate the source level for the extrapolated hole size. The calculated source level was then rounded to the next highest integer decibel for use in this action. NMFS does not concur that the notice of proposed authorization needs to be re-published given that a re-published notice would utilize the same extrapolation methodology and arrive at the same source level for DTH installation of 48-inch piles.

Comment 2: The Commission recommended that NMFS use a repetition rate of 13 strikes/second and the proxy source level of 146 dB re 1 µPa2-sec at 10 m from Guan and Miner (2020) to re-estimate the Level A harassment and shutdown zones for DTH pile installation of 12-inch piles.

Response: NMFS did utilize a proxy source level of 146 dB re 1 µPa2-sec for DTH pile installation of 12-inch piles. NMFS does not agree with the recommendation to use a strike rate of 13 strikes per second as strike rates can be highly variable. While it appears that strike rates may decrease as hole sizes become smaller, there is no specific strike rate data available for 12-inch piles. Therefore, NMFS used a strike rate across all DTH activities of 10 strikes per second.

Comment 3: The Commission recommended that NMFS require COK to conduct sound source and sound propagation measurements of DTH pile installation.

Response: NMFS agrees that there would be value in conducting sound source testing on some of the piles for which DTH installation data is not available. However, the City of Ketchikan has not budgeted for sound source verification and propagation measurements and a requirement of this nature would not be practicable. Therefore, NMFS does not concur with the Commission's recommendation.

Comment 4: The Commission recommended that NMFS employ alternate methodologies to estimate take of harbor seals. They recommended either basing take estimates on survey data from a local haulout location or on observations made during a COK-sponsored rock blasting project (84 FR 36891; July 30, 2019).

Response: There are a number of ways to estimate take in the absence of density data. NMFS based take on observed harbor seal group size near the project area. This methodology has previously been employed by NMFS at other locations in Ketchikan (84 FR 36891; July 30, 2019 and 85 FR 673; January 7, 2020). Applying the available haulout data would likely overestimate take since it assumed that all 83 seals at the haulout would be taken during each day of construction. NMFS did use the data from the COK-sponsored rock blasting project but interpreted the results differently than the Commission. Given that harbor seals are known to

follow fishing vessels into the marina, COK and NMFS assumed that more seals would be found in or near the harbor, while the Commission assumed that the animals would be evenly distributed across the entire 12.5-km Level B harassment zone. Since NMFS believes seal concentrations are likely to be greater near the harbor, we do not concur with the Commission's recommendation.

Comment 5: The Commission recommended that NMFS revise condition 6(b)(ix) in the final authorization to require COK to report the number of individuals of each species detected within the Level A and B harassment zones, and estimates of number of marine mammals taken by Level A and B harassment, by species. The Commission recommended NMFS include requirements that COK include in its monitoring report (1) the estimated percentages of the Level A and B harassment zones that were not visible, (2) an extrapolation of the estimated takes by Level A and B harassment based on the number of observed exposures within the Level A and B harassment zones and the percentages of the Level A and B harassment zones that were not visible (*i.e.,* extrapolated takes) consistent with other authorizations, and (3) the total number of Level A and B harassment takes based on both the observed and extrapolated takes for each species.

Response: We do not fully concur with the Commission's recommendation and do not adopt it as stated. NMFS agrees with the recommendation to require COK to report the number of individuals of each species detected within the harassment zones and has included this requirement in both the proposed and final authorizations. (See condition 6(b)(ix).) NMFS does not agree with the recommendation to require COK to report estimates of the numbers of marine mammals taken by Level B harassment. The Commission does not explain why it believes this requirement is necessary, nor does it provide recommendations for methods of generating such estimates in a manner that would lead to credible results. NMFS does agree COK should report the estimated percentage(s) of the Level B harassment zones that were not visible, and has included this requirement in both the proposed and final authorizations. (See condition 6(b)(iii).) These pieces of information—numbers of individuals of each species detected within the harassment zones and the estimated percentage(s) of the harassment zones that were not visible—may be used to glean an approximate understanding of whether COK may have exceeded the amount of take authorized. Although the Commission does not explain its reasoning for offering these recommendations, NMFS recognizes the basic need to understand whether an IHA-holder may have exceeded its authorized take. The need to accomplish this basic function of reporting does not require that NMFS require applicants to use methods we do not have confidence in to generate estimates of ''total take'' that cannot be considered reliable.

Comment 6: The Commission recommended that NMFS include in the final authorization an additional table that specifies the extents of the Level A harassment zones that exceed the shut-down zones, particularly for HF cetaceans and phocids.

Response: The table described by the Commission has been used very infrequently and only in situations with there are limited pile types, pile sizes, and/or pile installation methods employed. Such a table would be cumbersome and unwieldy in this instance given the numerous pile types, pile sizes and pile installation methods planned for use in which different Level A harassment isopleths are dependent on either varying duration or strike rate for both impact and DTH installation. The information that the Commission desires is readily available in Table 7 and Table 10.

Comment 7: The Commission recommended that NMFS reinforce that COK must keep a running tally of the total Level A and B harassment takes, both observed and extrapolated, for each species consistent with condition 4(g) of the final authorization.

Response: The IHA indicates the number of takes authorized for each species. We agree that COK must ensure they do not exceed authorized takes, but do not concur with the Commission's repeated recommendations regarding the need for NMFS to oversee IHA-holders' compliance with issued IHAs, including the use of a ''running tally'' of takes. Regardless of the Commission's substitution of the word ''reinforce'' for the word ''ensure,'' as compared with its prior recommendations for other actions, compliance with the terms of an issued IHA remains the responsibility of the IHA-holder.

Comment 8: The Commission recommended that NMFS refrain from issuing a renewal for any authorization unless it is consistent with the procedural requirements specified in section 101(a)(5)(D)(iii) of the MMPA.

Response: In prior responses to comments about IHA Renewals (*e.g.,* 84 FR 52464; October 02, 2019 and 85 FR 53342, August 28, 2020), NMFS has explained how the Renewal process, as implemented, is consistent with the statutory requirements contained in section 101(a)(5)(D) of the MMPA, provides additional efficiencies beyond the use of abbreviated notices, and, further, promotes NMFS' goals of improving conservation of marine mammals and increasing efficiency in the MMPA compliance process. Therefore, we intend to continue implementing the Renewal process.

Changes From the Proposed IHA to Final IHA

NMFS increased authorized take of harbor porpoise from 40 to 80 and authorized take of minke whale from 2 to 8 based on informal comments from the Commission. Authorized take of humpback whales was also increased from 68 to 119 due to the daily occurrence of a single humpback whale in Tongass Narrows after the notice of proposed IHA (85 FR 71612; November 12, 2020) had published in the **Federal Register**. These changes are described in detail in the Estimated Take section. The source level for DTH installation of 12-inch anchors was reduced from 166.2 dB to 162 dB based on data from Guan and Miner (2020) where 18-inch piles were measured. Anchor holes for COK will be 12-inch. Therefore, it is more accurate to use the 18-inch SL as the proxy sound source level for 12-inch anchors compared to 30-, 36- and 48-inch piles from Reyff & Heyvaert (2019), Reyff (2020), and Denes et al. (2019) which were used to derive 166.2 dB SL value. Therefore, the Level B harassment isopleth for DTH installation of 12-inch anchors was reduced from 12,023 m to 6,310 m. In the Monitoring and Reporting section, NMFS has added language stating that PSOs must work in rotating shifts of 4 hours and individual PSOs must not perform duties for more than 12 hours in a 24-hour period. New language has also been added requiring PSOs to use elevated platforms at observation points to the extent practicable.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species

(*e.g.,* physical and behavioral descriptions) may be found on NMFS's website (*https://www.fisheries.noaa.gov/find-species).*

Table 2 lists all species or stocks for which take is expected and authorized for this action, 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 (2020). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. Alaska SARs (Muto *et al.* 2020). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2019 SARs (Muto *et al.,* 2020) and draft 2020 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

TABLE 2—MARINE MAMMALS THAT COULD OCCUR IN THE PROJECT AREA

Common name	Scientific name	MMPA stock	ESA/ MMPA status; strategic (Y/N) [1]	Stock abundance Nbest (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
Family Balaenidae						
Humpback whale	*Megaptera novaeangliae*	Central North Pacific	-, -,Y	10,103 (0.3; 7,891; 2006)	83	25
Minke whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N.A.	N.A.	0
Order Cetartiodactyla—Cetacea—Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Killer whale	*Orcinus orca*	Alaska Resident	-, -, N	2,347 (N.A.; 2,347; 2012)	24	1
		West Coast Transient	-, -, N	243 (N.A, 243, 2009)	2.4	0
		Northern Resident	-, -, N	302 (N.A.; 302, 2018)	2.2	0.2
		Gulf of Alaska, Aleutian Islands, and Bering Sea Transient.	-, -, N	587 (N.A.; 587; 2012	5.87	1
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	North Pacific	-, -, N	26,880 (N.A.; N.A.; 1990)	N.A.	0
Family Phocoenidae						
Harbor porpoise	*Phocoena phocoena*	Southeast Alaska	-, -, Y	1,354 (0.10; 896; 2012)	8.95	34
Dall's porpoise	*Phocoenoides dalli*	Alaska	-, -, N	83,400 (0.097; N.A.; 1991	N.A.	38
Order Carnivora—Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
Steller sea lion	*Eumetopias jubatus*	Eastern U.S.	-, -, N	43,201 (N.A.; 43,201; 2017) ..	2,592	112
Family Phocidae (earless seals)						
Harbor seal	*Phoca vitulina richardii*	Clarence Strait	-, -, N	27,659 (N.A.; 24,854; 2015) ..	746	40

[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 online at: *https://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 (N.A.).

[3] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

As indicated above, all nine species (with 12 managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we are authorizing it.

A detailed description of the of the species likely to be affected by the project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (85 FR 71612); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts.

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 based on 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). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.,* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 3.

TABLE 3—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

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

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

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

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Nine mammal species (seven cetacean and two pinniped (one otariid and one phocid) species) have the reasonable potential to co-occur with the planned survey activities. Of the cetacean species that may be present, three are classified as low-frequency cetaceans (*i.e.,* all mysticete species), two are classified as mid-frequency cetaceans (*i.e.,* all delphinid and ziphiid species and the sperm whale), and two are classified as high-frequency cetaceans (*i.e.,* porpoise *spp.*).

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

The effects of underwater noise from pile removal activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the survey area. The notice of proposed IHA (85 FR 71602; November 10, 2020) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from WSDOT's vibratory pile removal on marine mammals and their habitat. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of proposed IHA (85 FR 71602; November 10, 2020).

Estimated Take

This section provides an estimate of the number of incidental takes authorized through this IHA, which will inform both NMFS' consideration of ''small numbers'' and the negligible impact determination.

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

Authorized takes would primarily be by Level B harassment, as use of the acoustic sources (*i.e.,* vibratory or impact pile driving or DTH pile installation) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for high frequency cetacean species and phocid pinnipeds. Auditory injury is unlikely to occur in low-frequency and mid-frequency cetacean species and otariid pinnipeds. The planned mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

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

Acoustic Thresholds

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

Level B Harassment for non-explosive sources—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (*e.g.,* hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 µPa (rms) for continuous (*e.g.,* vibratory pile-driving, drilling) and above 160 dB re 1 µPa (rms) for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources.

COK's planned activity includes the use of continuous (vibratory pile driving, DTH pile installation) and impulsive (impact pile driving), sources, and therefore the 120 and 160 dB re 1 µPa (rms) criteria are applicable.

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

These thresholds are provided in Table 4. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

TABLE 4—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

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

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

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

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

Vibratory hammers produce constant sound when operating, and produce vibrations that liquefy the sediment surrounding the pile, allowing it to penetrate to the required seating depth. An impact hammer would then generally be used to place the pile at its intended depth through rock or harder substrates. An impact hammer is a steel device that works like a piston, producing a series of independent strikes to drive the pile. Impact hammering typically generates the loudest noise associated with pile installation. The actual durations of each installation method vary depending on the type of pile, size of the pile, and substrate characteristics (*e.g.* bedrock).

In order to calculate distances to the Level A harassment and Level B harassment sound thresholds for piles of various sizes being used in this project, NMFS used acoustic monitoring data from other locations to inform selection of representative source levels (see Table 5).

Sound source levels for vibratory installation of 30-inch steel piles were obtained by Denes *et al.* (2016) during the installation of 30-inch steel pipe piles at the Ketchikan Ferry Terminal. Vibratory removal of 30-inch piles is expected to be quieter than installation, so this value is used as a proxy. Sound levels for vibratory installation of 48-inch steel piles were obtained by Austin *et al.* (2016) during the installation of test piles at the Port of Anchorage. The applicant elected to conservatively employ sound source levels for the 48-inch piles as a proxy to calculate harassment isopleths for 36-inch piles.

Sound levels for impact installation of 30-inch steel piles were taken from Denes *et al.* (2016) during the installation of piles at the Ketchikan Ferry Terminal. Sound levels for impact installation of 48-inch steel piles were obtained by Austin *et al.* (2016) during the installation of test piles at the Port of Anchorage. Overall median levels were not reported for peak and single strike SEL values. Therefore, the highest values reported for peak and single strike SEL were used. The highest levels reported were a peak of 213.2 dB re: 1 µPa at 14 m and a single strike SEL of 186.7 dB re: 1 µPa2–sec on pile IP5 at

11 m (Austin *et al.* 2016). Sound source levels for 48-inch piles are used as a proxy to calculate harassment isopleths for 36-inch piles.

DTH pile installation includes drilling (non-impulsive sound) and hammering (impulsive sound) to penetrate rocky substrates (Denes *et al.* 2016; Denes *et al.* 2019; Reyff and Heyvaert 2019). DTH pile installation was initially thought be a primarily non-impulsive noise source. However, Denes *et al.*(2019) concluded from their study in Virginia that DTH should be characterized as impulsive based on a >3 dB difference in sound pressure level in a 0.035-second window (Southall *et al.* 2007) compared to a 1-second window. Therefore, DTH pile installation is treated as both an impulsive and non-impulsive noise source. In order to evaluate Level A harassment, DTH pile installation activities are evaluated according to the impulsive criteria and the User Spreadsheet may be employed. Level B harassment isopleths are determined by applying non-impulsive criteria and using the 120 dB threshold which is also used for vibratory driving. This approach ensures that the largest ranges to effect for both Level A and Level B harassment are accounted for in the take estimation process.

The source level employed to derive Level B harassment isopleths for DTH pile installation (socketing) of all pile sizes was derived from the Denes *et al.* (2016) study at Kodiak, Alaska. The reported median source value for drilling was determined to be 166.2 dB RMS.

For DTH anchoring of 12-inch holes, COK used a sound source level from 18-inch piles from Guan and Miner (2020) as a proxy (146 dB SEL) for Level A harassment calculations. For DTH installation of 30 and 36-inch sockets, source levels from 42-inch holes from Reyff & Heyvaert (2019), Reyff (2020), and Denes *et al.* (2019) were employed.

TABLE 5—ESTIMATES OF MEAN UNDERWATER SOUND LEVELS GENERATED DURING VIBRATORY PILE REMOVAL, VIBRATORY PILE INSTALLATION, IMPACT PILE INSTALLATION, AND DTH PILE INSTALLATION

Method and pile type	Sound source level at 10 meters			Literature source
	SPL rms	SPL_{PK}	SS_{SEL}	
Vibratory Hammer				
30-inch steel piles	161.9	.....	.....	Denes *et al.* 2016.
36-and 48-inch steel piles	168.2	.....	.....	Austin *et al.* 2016.
Impact Hammer				
30-inch diameters	195	208.5	180.7	Denes *et al.* 2016.
36- and 48-inch [1]	198.6	213.2 [2]	186.7 [3]	Austin *et al.* 2016.
DTH Pile Installation				
DTH Sockets (48-inch) [4]	166.2	.....	168	Extrapolated from DTH SSV studies listed below; Denes *et al.* (2016).
DTH Sockets (30-, 36-inch) [4]	166.2	194	164	Reyff & Heyvaert (2019); Reyff (2020); Denes *et al.* (2016, Denes *et al.* 2019).
DTH Anchors (12-inch) [5]	162	172	146	Guan and Miner (2020).

[1] Sound source levels for 48-inch piles are used as a proxy to calculate harassment isopleths for 36-inch piles.
[2] Represents maximum value measured at 14 m.
[3] Represents maximum value measured at 11 m.
[4] DTH drilling source levels for 24-inch piles from Denes et al. (2016) was used as a proxy for 30-inch to 48-inch piles. SL was revised to 166.2 dB from 166 dB utilized in notice of proposed IHA to more accurately reflect averaged results of DTH installation of 30-, 36- and 48-inch piles from Reyff & Heyvaert (2019); Reyff (2020); Denes *et al.* (2019).
[5] The pile/hole size from Guan and Miner (2020) measured 18-inches and anchor holes for COK will be 12-inches. Therefore, it is more accurate to use the 18-inch SL as the proxy sound source level for 12-inch anchors.
SS SEL = single strike sound exposure level; dB peak = peak sound level; rms = root mean square.

Level A harassment Zones

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources such as impact driving, vibratory driving and DTH pile installation example from project, NMFS User Spreadsheet predicts the distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would incur PTS.

Inputs used in the User Spreadsheet (Table 6) and the resulting isopleths are reported below (Table 7). Level A harassment thresholds for impulsive sound sources (impact pile driving, DTH pile installation) are defined for both SELcum and Peak SPL, with the threshold that results in the largest modeled isopleth for each marine mammal hearing group used to establish the effective Level A harassment isopleth. Note that the peak SPL for DTH installation of 48-inch piles is unknown as no sound source verification testing has been conducted

on piles of that size. The single strike SEL was extrapolated using data points measured for smaller piles during DTH installation. In this project, Level A harassment isopleths based on SELcum were always larger than those based on Peak SPL.

TABLE 6—PARAMETERS OF PILE DRIVING AND DRILLING ACTIVITY USED IN USER SPREADSHEET

Equipment type	Vibratory pile driver (installation/ removal of 30-inch steel piles)	Vibratory pile driver (installation of 36 and 48-inch steel piles)	Impact pile driver (30-inch steel piles)	Impact pile driver (36 and 48-inch steel piles)	DTH sockets		DTH anchor (12-inch steel piles) [2]
					30-, 36-in [1]	48-in	
Source Level	161.9 RMS	168.2 RMS	180.7 SS SEL	186.7 SS SEL	164 SS SEL/ 194 SPLpk.	168 SS SEL	146 SS SEL/ 172 SPLpk.
Weighting Factor Adjustment (kHz).	2.5	2.5	2	2	2		2.
(a) Activity duration (time) within 24 hours.	(a) Up to 6 hrs OR >6–8 hrs(c) 1.	(a) Up to 6 hrs OR >6–8 hrs (c) 1.	(a) 1–10 minutes (b) Up to 500 strikes (c) 1.	(a) 1–10 minutes (b) Up to 500 strikes (c) 1.	(a) Up to 3 hrs OR >3–6 hrs.	(a) Up to 2 hrs OR >2–3 hrs OR >3–4 hrs.	(a) Up to 6 hrs OR >6–8 hrs.
(b) Number of strikes per pile (impact) OR number of strikes per second (DTH).	.....	.....	(a) >10–20 minutes. (b) 501–1,000 strikes (c) 1.	(a) >10–20 minutes. (b) 501–1,000 strikes (c) 1.	(b) 10 strike/ sec.	(b) 10 strike/ sec.	(b) 10 strikes/ sec.
(c) Number of piles per day.	.....	.....	(a) >20–30 minutes (b) 1,001–1,500 strikes (c) 1.	(a) >20–30 minutes (b) 1,001–1,500 strikes (c) 1.	(c) 1	(c) 1	(c) 1.
Propagation (xLogR).	15	15	15	15	15		15.
Distance of source level measurement (meters).	10	10	10	11	10		10.

[1] DTH drilling source levels for 42-inch piles from Reyff and Heyvaert (2019), (Reyff 2020), and Denes et al. (2019) were used as a proxy for 30- and 36-inch piles.

[2] DTH drilling source levels for 18-inch piles from Guan and Miner (2020) were used as a proxy for 12-inch piles.

TABLE 7—CALCULATED DISTANCES TO LEVEL A HARASSMENT ISOPLETHS (m) DURING VIBRATORY PILE INSTALLATION/ REMOVAL, IMPACT INSTALLATION AND DTH PILE INSTALLATION FOR EACH HEARING GROUP

Source	Daily duration	PTS onset isopleth (m)				
		Cetaceans			Pinnipeds	
		Low-frequency	Mid-frequency	High-frequency	Phocid	Otariid
30-inch Vibratory (Installation or Removal)	Up to 6 hours	25.9	2.3	38.3	15.7	1.1
	7 to 8 hours	31.4	2.8	46.4	19.1	1.3
36- and 48-inch Vibratory	Up to 6 hours	68.1	6	100.7	41.4	2.9
	7 to 8 hours	82.5	7.3	122	50.1	3.5
Down-the-Hole Socket (30-, 36-inch)	Up to 3 hours	1,225.6	43.6	1,459.9	655.9	47.8
	4 to 6 hours	1,945.5	69.3	2,317.4	1,041.2	75.8
Down-the-Hole Socket (48-inch)	Up to 2	1,728.3	61.5	2,058.7	924.9	67.3
	>2 to 3 hours	2,264.8	80.5	2,697.7	1,212	88.2
	>3 to 4 hours	2,743.6	97.6	3,268	1,468.2	106.9
Down the Hole Anchor (12-inch)	Up to 6 hours	122.8	4.4	146.2	65.7	4.8
	7 to 8 hours	148.7	5.3	177.1	79.6	5.8
30-inch Diesel Impact	Up to 500 strikes (1–10 minutes).	442	15.7	526.4	236.5	17.2
	501–1,000 strikes (11–20 minutes).	701.6	25	835.7	375.4	27.3
	1,001–1,500 strikes (21–30 minutes).	919.3	32.7	1,095	492	35.8
36- and 48-inch Diesel Impact	Up to 500 strikes (1–10 minutes).	1,221.2	43.4	1,454.6	653.5	47.9
	501–1,000 strikes (11–20 minutes).	1,938.5	68.9	2,309	1,037.4	75.5

TABLE 7—CALCULATED DISTANCES TO LEVEL A HARASSMENT ISOPLETHS (m) DURING VIBRATORY PILE INSTALLATION/REMOVAL, IMPACT INSTALLATION AND DTH PILE INSTALLATION FOR EACH HEARING GROUP—Continued

Source	Daily duration	PTS onset isopleth (m)				
		Cetaceans			Pinnipeds	
		Low-frequency	Mid-frequency	High-frequency	Phocid	Otariid
	1,001–1,500 strikes (21–30 minutes).	2,540.1	90.3	3,025.7	1,359.4	99

Level B Harassment Zones

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

TL = B * Log10 (R1/R2),

Where

TL = transmission loss in dB
B = transmission loss coefficient; for practical spreading equals 15
R1 = the distance of the modeled SPL from the driven pile, and
R2 = the distance from the driven pile of the initial measurement

The recommended TL coefficient for most nearshore environments is the, practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for COK's planned activity.

Using the practical spreading model, COK determined underwater noise would fall below the behavioral effects threshold of 120 dB rms for marine mammals at a maximum radial distance of 16,343 m for vibratory pile driving of 36 and 48-inch diameter piles. Other activities, including rock anchoring and impact pile driving, have smaller Level B harassment zones. All Level B harassment isopleths are reported in Table 8 below. It should be noted that based on the geography of Tongass Narrows and the surrounding islands, sound will not reach the full distance of the Level B harassment isopleth. The largest Level B Harassment isopleth will be truncated by land masses at approximately 12,500 m to the southeast and approximately 3,590 m northwest of the project area. Constraining land masses include Revillagigedo Island, Gravina Island, Pennock Island and Spire Island.

TABLE 8—CALCULATED LEVEL B HARASSMENT ISOPLETHS

Source	Behavioral disturbance isopleth (m) 120 dB
30-inch Vibratory (Installation or Removal)	6,213
36- and 48-inch Vibratory	16,343
DTH installation [1] (Socket)	12,023
DTH installation (anchor) [2]	6,310
30-inch Diesel Impact	2,154
36- and 48-inch Diesel Impact	3,744

[1] SL of 166.2 dB was used for socket installation instead of 166 as used in notice of proposed IHA.

[2] SL of 162 dB (Guan and Miner 2020) was used for 12-inch anchor installation.

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. Note that there is no density data for any of the species near the Berth III mooring dolphin project area, therefore the take estimate is informed by qualitative data.

The number of marine mammals that may be exposed to harassment thresholds is calculated by estimating the likelihood of a marine mammal being present within a harassment zone during the associated activities. Estimated marine mammal abundance is determined by reviewing local and regional reports, surveys, permits and observations of abundance and frequency near the planned project action. For example, for species that are common with the potential to occur daily, the take calculations are based on the group size multiplied by the projected number of days of underwater noise activities. For species that are less common, take estimates are based on group size multiplied by the frequency (*e.g.* weekly, monthly). The estimated number of takes are based upon reasonable ranges from the best information currently available for these species near the project area.

Authorization of Level A harassment takes was requested by COK for harbor seal, harbor porpoise, and Dall's porpoise. Harbor seals are habituated to fishing vessels and may follow vessels that enter the marina. Dall's and harbor porpoises' small size and speed make it possible that these animals could occur within the Level A harassment zones and potentially incur injury prior to detection.

Humpback Whale

Humpback whales occur frequently in Tongass Narrows and the adjacent Clarence Strait during summer and fall months to feed, but are less common during winter and spring. The average group size during the fall surveys was two whales according to Dalheim *et al.* (2009). Local reports of humpback whale group size in Tongass Narrows are similar, with the typical size being between 1 and 3. During the spring months, humpback whales tend to congregate in areas outside of the Ketchikan area, such as Lynn Canal and Fredrick Sound. Therefore, it is assumed that the occurrence of humpback whales in the project area is two individuals twice per week throughout the project. A group size of two was also assumed in the Biological Opinion provided to the US Army Corp of Engineers (USACE) for the Alaska Department of Transportation & Public Ferries (ADOT&PF) Berth improvement project in Tongass Narrows (NMFS 2019).

In the notice of proposed IHA (85 FR 71612; November 12, 2020) NMFS estimated that up to 2 individuals could be exposed to underwater noise twice a week during the 17 weeks of the project's in-water work, for a total of 68 incidents of take from the Central North Pacific stock. Wade et al. (2016) determined that 6.1 percent of all humpback whales in Southeast Alaska and northern British Columbia were members of the Mexico DPS, while all others are assumed to be members of the Hawaii DPS. Therefore, NMFS had proposed to authorize 68 incidents of take by Level B harassment from the Central North Pacific Stock with 64

instances from the Hawaii DPS and four instances from the endangered Mexico DPS. However, NMFS has increased authorized take by Level B harassment due to the daily presence of a single humpback whale close to Ketchikan during the month of November (USA Today, December 1, 2020). NMFS assumed that one whale would be present in the project area daily throughout the duration of the project. Based on the recent occurrence information, we estimate that one humpback whale will be within the Level B harassment zone daily for 17 weeks.

Therefore:

(7 × 17) = 119 exposures of Central North Pacific stock humpback whales to Level B harassment

As described above, an estimated 6.1 percent of humpback whales in Southeast Alaska are from the Mexico DPS (Wade *et al.* 2016). Therefore, of the 119 animals potentially exposed to Level B harassment due to Berth III pile driving activities, 6.1 percent or 7 of these 119 exposures would be ESA-listed Mexico DPS humpback whales, and the remaining 112 would most likely from the non-listed Hawaii DPS.

Take by Level A harassment is not expected for humpback whales because of the expected effectiveness of the monitoring and mitigation measures. While calculated Level A harassment zones are up to 2,800 m, multiple protected species observers (PSOs) will monitoring Tongass Narrows which is < less than 600 m in width and represents a much smaller effective Level A harassment zone. Humpbacks are usually readily visible, therefore, shutdown measures can be implemented prior to any humpback whales incurring PTS within Level A harassment zones.

Steller Sea Lion

Steller sea lion abundance in the Tongass Narrows area is not well known and no systematic studies of Steller sea lions have been conducted in or near the Tongass Narrows area. However, sea lions are known to occur in the Tongass Narrows area throughout the year with peak numbers March through September (ADOT 2019). Sea lions may be present during salmon and herring runs and are known to visit hatcheries and fish processing facilities in the vicinity.

Group sizes are generally 6 to 10 individuals (Freitag 2017) but have been reported to reach 80 animals (Freitag 2017). COK assumed one large group of 10 individuals could be present each day in the project vicinity based on HDR (2019) and Freitag (2017) (as cited in 83 FR 22009; May 11, 2018). NMFS agrees that this daily estimate is appropriate and therefore has authorized up to 1,200 takes by Level B harassment.

Take by Level A harassment is not expected for Steller sea lions because of the relatively small Level A harassment zones for otariids (Table 7) and the expected effectiveness of the monitoring and mitigation measures discussed below.

Harbor Seal

Harbor seal densities in the Tongass Narrows area are not well known. No systematic studies of harbor seals have been conducted in or near Tongass Narrows. Seals are known to occur year-round with little seasonal variation in abundance (Freitag 2017) and local experts estimate that there are about 1 to 3 harbor seals in Tongass Narrows every day, in addition to those that congregate near the seafood processing plants and fish hatcheries. COK conducted pinnacle rock blasting in December 2019 and January 2020 near the vicinity of the planned project and recorded a total of 21 harbor seal sightings of 24 individuals over 76.2 hours of pre- and post-blast monitoring (Sitkiewicz 2020). Harbor seals were observed in groups ranging from 1–3 animals throughout the 0.70-mile (1.12-kilometer) observation zone. Based on this knowledge, COK assumed an average group size in Tongass Narrows of three individuals. They anticipated that three groups of three harbor seals per group could be exposed to project-related underwater noise each day for 120 days of in-water work. Given that harbor seals are known to follow fishing vessels into the marina and may be difficult to detect, COK assumed that one group of three seals could be taken by Level A harassment daily, resulting in 360 Level A harassment takes. NMFS agreed with these assumptions and, therefore, has authorized 720 takes by Level B harassment and 360 takes by Level A harassment.

Dall's Porpoise

The mean group size of Dall's porpoise in Southeast Alaska is estimated at approximately three individuals (Dahlheim *et al.,* 2009; Jefferson *et al.,* 2019). However, in the Ketchikan vicinity, Dall's porpoises are reported to typically occur in groups of 10–15 animals, with an estimated maximum group size of 20 animals (Freitag 2017, as cited in 83 FR 22009, May 11, 2018). Overall, sightings of Dall's porpoise are infrequent near Ketchikan, but they could be present on any given day during the construction period.

COK assumed that a maximum group size of 20 Dall's porpoise could occur in the project area each month. NMFS concurs with this assessment and has authorized 80 takes of Dall's porpoise over the anticipated four-month project duration.

Given the large size of the Level A harassment zone associated with impact pile driving for high-frequency cetaceans, it is possible Dall's porpoises may enter the Level A harassment zone undetected. Therefore, NMFS has authorized a total of 60 takes of Dall's porpoise by Level B harassment and 20 takes by Level A harassment over the course of the project.

Harbor Porpoise

Harbor porpoises are non-migratory; therefore, occurrence estimates are not dependent on season. Freitag (2017 as cited in 83 FR 37473; August 1, 2018) observed harbor porpoises in Tongass Narrows zero to one time per month. Harbor porpoises observed in the project vicinity typically occur in groups of one to five animals with an estimated maximum group size of eight animals (83 FR 37473, August 1, 2018, Solstice 2018). Based on this previous information from the Ketchikan Berth IV Expansion project and the AKDOT Tongass Narrows project, COK estimated that two groups of five harbor porpoise may enter the Tongass Narrows twice per month. NMFS agrees with this estimate and, therefore, has authorized 80 takes of harbor porpoise during the duration of the project.

Given that harbor porpoises are stealthy, having no visible blow and a low profile in the water making the species difficult for monitors to detect (Dahlheim *et al.* 2015), COK requested that a total of 20 takes of harbor porpoises by Level A harassment be authorized. Therefore, NMFS has authorized 20 takes of harbor porpoise by Level A harassment and 60 takes by Level B harassment. The number of proposed takes in the proposed IHA (40) was incorrect due to a mathematical error.

Killer Whale

Typical pod sizes observed within the project vicinity range from 1 to 10 animals. COK assumed that the frequency of killer whales passing through the action area is estimated to be once per month and also conservatively assumed a pod size of 10.

Therefore, NMFS has authorized 40 takes of killer whales by Level B harassment.

Take by Level A harassment is not expected for killer whales because of the small Level A harassment zones for mid-frequency cetaceans and the expected effectiveness of the monitoring and mitigation measures discussed below.

Gray Whale

Gray whales have not been reported within the Tongass Narrows; however, their presence cannot be entirely discounted. Since the largest Level B harassment zone extends beyond Tongass Narrows, COK assumed that up to two gray whales may be taken per month. Therefore, NMFS has authorized up to 8 takes of gray whale by Level B harassment.

Due to the unlikely occurrence of gray whales and the ability to shut down pile driving activities prior to a whale entering the Level A harassment zone, no Level A harassment takes of gray whales were requested or are authorized.

Minke Whale

There are no known occurrences of minke whales within the project area although they may be present in Tongass Narrows and Clarence Strait year-round. Their abundance throughout Southeast Alaska is low. However, minke whales are distributed throughout a wide variety of habitats and could occur near the project area. Minke whales are generally sighted as individuals (Dahlheim *et al.* 2009).

NMFS had proposed to authorize two minke whale takes by Level B harassment in the proposed IHA. However, based on an informal comment from the Commission, NMFS has increased to eight the authorized take of minke whales (two takes per month) since they are at least if not more likely to occur in Tongass Narrows compared to gray whales, which have never been observed in Tongass Narrows. No Level A harassment takes of minke whales are anticipated due to the very limited occurrence of minke whales and the ability to shut down pile driving activities prior to a whale entering the Level A harassment zone.

Pacific White-Sided Dolphin

Pacific white-sided dolphins have not been reported within the Tongass Narrows; however, the dolphin is within its range and thus its presence cannot be discounted. Pacific white-sided dolphin group sizes generally range from between 20 and 164 animals. For the purposes of this assessment, COK assumed one group of 30 dolphins may be present within the Level B harassment zone every tenth day, or about every other week, similar to what was estimated for a prior IHA (84 FR 36891; July 30, 2019). Therefore, NMFS has authorized 360 takes of Pacific white-sided dolphin by Level B harassment.

No Level A takes are expected due to the relatively small size of Level A harassment zone for mid-frequency cetaceans which can be readily monitored.

Table 9 below summarizes the authorized take for all the species described above as a percentage of stock abundance.

TABLE 9—AUTHORIZED TAKE BY LEVEL A AND B HARASSMENT AND AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Level B takes	Level A takes	Stock abundance	Percent of stock
Humpback whale [1]	119	N/A	10,103	1.18
Steller sea lion eDPS	1,200	N/A	43,201	2.78
Harbor seal	720	360	27,659	3.90
Dall's porpoise	60	20	83,400	0.09
Harbor porpoise	60	20	1,354	5.90
Killer whale [2]				
AK resident	40	N/A	2,347	1.70
West coast transient	.....	.....	243	16.46
Northern resident	.....	.....	302	13.25
Gulf of Alaska, Aleutian Islands, and Bering Sea transient	.....	.....	587	6.81
Gray whale	8	N/A	26,960	0.03
Pacific white-sided Dolphin	360	N/A	26,880	1.34
Minke whale	8	N/A	N/A	N/A

[1] Assumes that 6.1 percent of humpback whales exposed are members of the Mexico DPS (Wade *et al.* 2016). Distribution of take by ESA status is 112 Level B takes for Hawaii DPS and 7 Level B take for Mexico DPS.

[2] These percentages assume all takes come from the same killer whale stock, thus the percentage should be adjusted down if multiple stocks are actually affected.

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

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

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

(2) The practicability of the measures for applicant implementation, which

may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The following mitigation measures are required for this IHA:

- For in-water heavy machinery work other than pile driving, if a marine mammal comes within 10 m, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include the following activities: (1) Movement of the barge to the pile location; or (2) positioning of the pile on the substrate via a crane (*i.e.,* stabbing the pile);
- Briefings must be conducted between construction supervisors and crews and the marine mammal monitoring team prior to the start of all pile driving activity and when new personnel join the work, to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures;
- For those marine mammals for which take has not been authorized, in-water pile installation and removal will shut down immediately if such species are observed within or entering the Level A or Level B harassment zone; and
- If take reaches the authorized limit for an authorized species, pile installation and removal will be stopped as these species approach the Level A or Level B harassment zone to avoid additional take.
- COK is required to implement all mitigation measures described in the biological opinion (issued on DATE).

The following mitigation measures would apply to COK's in-water construction activities.

- *Establishment of Shutdown Zones*—COK will establish shutdown zones for all pile driving and removal activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones will vary based on the activity type and marine mammal hearing group (Table 10). Due to sediment characteristics and variation in pile sizes, COK does not know how much time will be required for vibratory driving/removal and DTH installation at each pile or how many strikes will be required for impact installation. Given this uncertainty, COK will utilize a tiered system to identify and monitor appropriate shutdown zones based on activity duration or the number of strikes required for pile installation or removal. During vibratory driving/removal and DTH pile installation, the shutdown zone size will initially be set at the lowest tier, which represents the least amount of active installation/removal time. Shutdown zones will be expanded to the next largest zone after Tier 1 time period has elapsed. For those activities with three specified tiers (*i.e.,* impact driving, DTH socketing), the shutdown zone will be expanded to the largest isopleths identified in Tier 3 if the activity extends beyond the Tier 2 active time period. During impact driving, the shutdown zones associated with 0–500 strikes will be monitored until 500 strikes have occurred. The shutdown zones will increase to the next tier between 501–1,000 strikes. After 1,000 strikes the shutdown zones will subsequently be increased to the largest zone sizes.
- If a marine mammal is entering or is observed within an established shutdown zone, pile driving must be halted or delayed. Pile driving 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 subsequent detections of small cetaceans and pinnipeds; or 30 minutes have passed without subsequent detections of large cetaceans.
- The placement of PSOs during all pile driving and removal activities (described in detail in the *Monitoring* and *Reporting* section) will ensure that the entire shutdown zone is visible during pile installation. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (*e.g.,* fog, heavy rain), pile driving and removal must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.
- *PSOs*—COK will employ PSOs who will be able to fully monitor Level A harassment zones. Placement of PSOs will allow observation of marine mammals within the large segments of the Level B harassment zones. However, due to the large size of some of the Level B harassment zones (Table 8), PSOs will not be able to effectively observe the entire zone.
- *Pre-activity Monitoring*—Prior to the start of daily in-water construction activity, or whenever a break in pile driving/removal of 30 minutes or longer occurs, PSOs will observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone will be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zone, a soft-start cannot proceed until the animal has left the zone or has not been observed for 15 minutes. When a marine mammal for which take is authorized is present in the harassment zone, activities may begin. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will commence.
- *Soft Start*—Soft-start procedures are believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, COK will be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a thirty-second waiting period. This procedure will be conducted three times before impact pile driving begins. Soft start will 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.
- *Scheduling*—Pile driving or removal activities must occur during daylight hours. If poor environmental conditions restrict visibility of the shutdown zones (*e.g.,* from excessive wind or fog, high Beaufort state), pile installation may not be initiated. Work that has begun with a fully cleared Level B harassment zone may continue during inclement weather (*e.g.,* fog, heavy rain) or periods of limited visibility.

TABLE 10—SHUTDOWN AND MONITORING ZONES FOR EACH DRIVING/REMOVAL ACTIVITY

Pile size	Low frequency cetacean shutdown area (m)	Mid frequency cetacean shutdown area (m)	High frequency shutdown area (m) (harbor porpoise, dall's porpoise) [1]	Phocid pinniped shutdown area (m) (harbor seal)	Otariid pinniped shutdown area (m) (steller sea lion)	Level B harassment zone (m)
Vibratory Pile Driving/Removal:						
30-inch piles up to 8 hrs	40	10	50	10		6,300
36- and 48-inch piles up to 8 hrs	90	10	50	10		[1] 12,500
Impact Pile Driving:						
30-inch piles up to 500 strikes	500	40	50	10	40	2,200
30-inch piles 501 to 1,000 strikes	700					
30-inch piles 1,001 to 1,500 strikes	1,000					
36- and 48-inch piles up to 500 strikes	1,300	50	50	10	50	3,800
36- and 48-inch piles 501 to 1,000 strikes	2,000	70			80	
36- and 48-inch piles 1,001 to 1,500 strikes	2,600	90			100	
DTH Socket:						
30-, 36-inch piles up to 3 hrs	1,300	50	50	10	50	12,500
30-, 36-inch piles 3 hrs—6 hrs	2,000	70				
48-inch piles up to 2 hours	1,750	65			70	
48-inch piles >2 to 3 hrs	2,300	85			100	
48-inch piles >3 to 4 hours	2,750	100			110	
DTH Anchor:						
12-inch hole up to 8 hours	150	10	50	10		6,350

[1] Represents largest Level B Harassment isopleth. Note that isopleth is truncated by land masses at 12,500 meters.

To minimize impacts to marine mammals and their prey vibratory installation will be used as the primary methods of pile installation. Impact driving will be minimized and used only as needed to seat the pile in its final position or to penetrate material that is too dense for a vibratory hammer.

Based on our evaluation of the applicant's planned measures, as well as other measures considered by NMFS, we have determined that the required measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

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

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

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) Action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the 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 other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

Visual Monitoring

Monitoring must be conducted 30 minutes before, during, and 30 minutes after pile driving and removal activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Marine mammal monitoring during pile driving and removal must be conducted by NMFS-approved PSOs in a manner consistent with the following:

- Independent PSOs (*i.e.,* not construction personnel) who have no other assigned tasks during monitoring periods must be used;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience;
- Where a team of two or more PSOs are required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction;
- COK must submit PSO Curriculum Vitae for approval by NMFS prior to the onset of pile driving;

• PSOs must work in rotating shifts of 4 hours and individual PSOs must not perform duties for more than 12 hours in a 24-hour period; and

• PSOs must use elevated platforms at observation points to the extent practicable.

PSOs should have the following additional qualifications:

• Ability to conduct field observations and collect data according to assigned protocols;

• Experience or training in the field identification of marine mammals, including the identification of behaviors;

• Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

• Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and

• Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

A minimum of three onshore observers will be stationed along Tongass Narrows at locations that provide optimal visual coverage for shutdown and monitoring zones. To maximize the visual coverage of shutdown and monitoring zones, observers will use elevated platforms at observation points to the extent practicable. Observers will be in contact with each other via two-way radio and with a cellular phone used as back-up communications. The primary purpose of this observer is to implement the shutdown zones and monitor the Level B harassment zones. PSOs must be positioned in order to focus on monitoring these zones. PSOs would scan the waters using binoculars, and/or spotting scopes, and would use a handheld global positioning system (GPS) or range-finder device to verify the distance to each sighting from the project site.

Monitoring will be conducted 30 minutes before, during, and 30 minutes after pile driving/removal activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

Reporting

A draft marine mammal monitoring report would be submitted to NMFS within 90 days after the completion of pile driving and removal activities, or 60 days prior to a requested date of issuance of any future IHAs for projects at the same location, whichever comes first. It will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated marine mammal observation data sheets. Specifically, the report must include:

• Dates and times (begin and end) of all marine mammal monitoring;

• Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.,* impact or vibratory);

• Weather parameters and water conditions during each monitoring period (*e.g.,* wind speed, percent cover, visibility, sea state) and estimated observable distance (if less than the harassment zone distance).

• The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting;

• Age and sex class, if possible, of all marine mammals observed;

• PSO locations during marine mammal monitoring;

• Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting);

• Description of any marine mammal behavior patterns during observation, including direction of travel and estimated time spent within the Level A and Level B harassment zones while the source was active;

• Number of individuals of each species (differentiated by month as appropriate) detected within the harassment zones,;

• Detailed information about any implementation of any mitigation triggered (*e.g.,* shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any;

• Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals; and

• Submit all PSO datasheets and/or raw sighting data (in a separate file from the Final Report referenced immediately above).

If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the IHA-holder shall report the incident to the Office of Protected Resources (OPR) (301–427–8401), NMFS and to the Alaska regional stranding coordinator (907–586–7209) as soon as feasible. If the death or injury was clearly caused by the specified activity, the IHA-holder must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHA. The IHA-holder must not resume their activities until notified by NMFS.

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'' through harassment, NMFS considers other factors, such as the likely nature

of any responses (*e.g.,* intensity, duration), the context of any responses (*e.g.,* critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS'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, or ambient noise levels).

Vibratory pile removal, vibratory pile driving, impact pile driving, and DTH pile installation have the potential to disturb or displace marine mammals. Specifically, these planned project activities may result in take, in the form of Level A harassment and Level B harassment. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway. No mortality is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals.

The Level A harassment zones identified in Table 7 are based upon an animal exposed to vibratory pile driving, impact pile driving, and DTH pile installation for periods of time ranging from 30 minutes for impact driving, up to 8 hours for vibratory driving, up to 6 hours for DTH socketing and 8 hours for DTH anchoring. Exposures of this length are unlikely for vibratory driving/removal and DTH pile installation scenarios given marine mammal movement throughout the area. Even during impact driving scenarios, an animal exposed to the accumulated sound energy would likely experience only limited PTS at the lower frequencies where pile driving energy is concentrated.

Behavioral responses of marine mammals to pile driving at the project site, if any, are expected to be mild and temporary. Given that the installation of 12 permanent piles and eight temporary piles would occur over 4 months, any harassment would be temporary and intermittent. 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) (Southall *et al.* 2007, ABR 2016). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving. These reactions and behavioral changes are expected to subside quickly when the exposures cease.

The potential for harassment is minimized through the implementation of the required mitigation measures. During all impact driving, implementation of soft start procedures and monitoring of established shutdown zones shall be required, significantly reducing any possibility of injury. Given sufficient notice through use of soft start (for impact driving), marine mammals are expected to move away from an irritating sound source prior to it becoming potentially injurious. To reduce the severity of in-water noise, vibratory pile driving will be the primary installation method for the project and impact hammers will only be used to seat pile tips into fractured bedrock ahead of the hammering operations or if material is encountered that is too dense to penetrate with a vibratory hammer.

The planned project is located within an active marine commercial and industrial area with no known pinniped haulouts or rookeries near the project area. While construction of mooring dolphins at Berth III would have some permanent removal of habitat available to marine mammals, the area lost is relatively small and not of particular importance to any marine mammals.

Any impacts on prey that would occur during in-water construction would have at most short-terms effects on foraging of individual marine mammals, and likely no effect on the populations of marine mammals as a whole. Therefore, effects on marine mammal prey during the construction are expected to be minimal and, therefore, are unlikely to cause substantial effects on marine mammals at the individual or population level.

In addition, it is unlikely that minor noise effects in a small, localized area of habitat would have any effect on the stocks' ability to recover. 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.

For all species except humpback whales, there are no known BIAs near the project zone that would be impacted by COK's planned activities. For humpback whales, the whole of Southeast Alaska is a seasonal BIA from spring through late fall (Ferguson *et al.,* 2015). However, Tongass Narrows and Clarence Strait are not important portions of this habitat due to development and human presence. Tongass Narrows is also a small passageway and represents a very small portion of the total available habitat for humpback whales. Finally, there is no ESA-designated critical habitat for humpback whales.

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

- No mortality is anticipated or authorized;
- Authorized Level A harassment would be limited and of low degree;
- Mitigation measures such as employing vibratory driving to the maximum extent practicable, soft-starts, and shut downs will be implemented;
- Impacts to marine mammal habitat are anticipated to be minimal;
- The project area is located in an industrialized and commercial marina;
- The project area does not include any rookeries, or known areas or features of special significance for foraging or reproduction; and
- The anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior.

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 required monitoring and mitigation measures, NMFS finds that the total marine mammal take from the planned activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be

taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The number of instances of take for each species or stock authorized to be taken as a result of this project is included in Table 9. Our analysis shows that less than one-third of the best available population abundance estimate of each species or stock could be taken by harassment. The number of animals authorized to be taken for each authorized stock would be considered small relative to the relevant stock's abundances even if each estimated taking occurred to a new individual, which is an unlikely scenario.

The west coast transient stock of killer whales represents the highest percentage of a single stock (<17 percent) that is authorized take. This take percentage also assumes that all authorized killer whale takes would be from this stock, which is highly unlikely given the expansive range of the stock.

A lack of an accepted stock abundance value for the Alaska stock of minke whale did not allow for the calculation of an expected percentage of the population that would be affected. The most relevant estimate of partial stock abundance is 1,232 minke whales in coastal waters of the Alaska Peninsula and Aleutian Islands (Zerbini *et al.,* 2006). Given that two takes by Level B harassment are authorized for the stock, comparison to the best estimate of stock abundance shows less than 0.2 percent of the stock is expected to be impacted.

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

Unmitigable Adverse Impact Analysis and Determination

In order to issue an IHA, NMFS must find that the specified activity will not have an ''unmitigable adverse impact'' on the subsistence uses of the affected marine mammal species or stocks by Alaskan Natives. NMFS has defined ''unmitigable adverse impact'' in 50 CFR 216.103 as an impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

Alaska Native hunters in the Ketchikan vicinity do not traditionally harvest cetaceans (Muto *et al.* 2020). Harbor seals are the most commonly targeted marine mammal that is hunted by Alaska Native subsistence hunters within the Ketchikan area. In 2012 an estimated 595 harbor seals were taken for subsistence uses, with 22 of those occurring in Ketchikan (Wolfe *et al.* 2012). This is the most recent data available. The harbor seal harvest per capita in both communities was low, at 0.02 for Ketchikan. ADF&G subsistence data for Southeast Alaska shows that from 1992 through 2008, plus 2012, from zero to 19 Steller sea lions were taken by Alaska Native hunters per year with typical harvest years ranging from zero to five animals (Wolfe *et al.* 2013) In 2012, it is estimated nine sea lions were taken in all of Southeast Alaska and only from Hoonah and Sitka. There are no known haulout locations in the project area. Both the harbor seal and the Steller sea lion may be temporarily displaced from the action area. However, neither the local population nor any individual pinnipeds are likely to be adversely impacted by the planned action beyond noise-induced harassment or slight injury. The planned project is anticipated to have no long-term impact on Steller sea lion or harbor seal populations, or their habitat no long term impacts on the availability of marine mammals for subsistence uses is anticipated.

Based on the description of the specified activity, the measures described to minimize adverse effects on the availability of marine mammals for subsistence purposes, and the required mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from COK's planned activities.

National Environmental Policy Act

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

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

Endangered Species Act

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

There is one marine mammal species (Mexico DPS humpback whale) with confirmed occurrence in the project area that is listed as endangered under the ESA. The NMFS Alaska Regional Office Protected Resources Division issued a Biological Opinion under section 7 of the ESA, on the issuance of an IHA to the City of Ketchikan under section 101(a)(5)(D) of the MMPA by the NMFS Permits and Conservation Division. The Biological Opinion concluded that the issuance of an IHA to COK is not likely to jeopardize the continued existence of Mexico DPS humpback whales or adversely modify critical habitat because none exists in the area.

Authorization

NMFS has issued an IHA to the City of Ketchikan for in-water construction activities associated with the Berth III Expansion Project in Ketchikan, Alaska between October 1, 2021 and September 30, 2022, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: February 26, 2021.

Donna S. Wieting,

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

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