



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XC980]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the U.S. Army Corps of Engineers Unalaska (Dutch Harbor) Channel Deepening Project

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 United States Army Corps of Engineers (Alaska District) (USACE) for authorization to take marine mammals incidental to Unalaska (Dutch Harbor) Channel Deepening in Iliuliuk Bay, Unalaska, Alaska.

DATES: This Authorization is effective from January 1, 2024 through December 31, 2024.

ADDRESSES: 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/action/incidental-take-authorization-us-army-corps-engineers-unalaska-dutch-harbor-channel>. In case of problems accessing these documents, please call the contact listed below.

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

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the “take” of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed IHA is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On October 31, 2022, NMFS received a request from the United States Army Corps of Engineers – Alaska District (USACE) for an IHA to take marine mammals incidental to deepening the entrance to Iliuliuk Bay, adjacent to Dutch Harbor, Alaska. Following NMFS’ review of the application, USACE submitted supplemental information on November 28, 2022 and January 5, 2023. The application was deemed

adequate and complete on March 2, 2023. The notice of the proposed IHA and request for comments was published on April 11, 2023 (88 FR 21630). USACE's request is for take of harbor seals (*Phoca vitulina richardsi*), Steller sea lions (*Eumetopias jubatus*), harbor porpoise (*Phocoena phocoena*), and humpback whales (*Megaptera novaengliae*) by Level A harassment and Level B Harassment. Neither USACE nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of the Specified Activity

The USACE plans to deepen the entrance channel of Iliuliuk Bay by means of dredging and (if necessary) confined blasting of a 42-foot (ft) (12.8 meter (m)) deep "bar" which currently restricts access to the port of Dutch Harbor, Alaska. Dutch Harbor is the only deep draft, year-round ice-free port along the 1,200-mile (1,931 km) Aleutian Island chain, providing vital services to vessels operating in both the North Pacific and the Bering Sea, and the depth of the bar currently restricts access for large vessels that may need to enter the port, particularly during extreme weather. The purpose of the project is to increase navigational safety and improve economic efficiencies into and out of Dutch Harbor via Iliuliuk Bay.

Removal of the bar will involve dredging (via clamshell dredge or long-reach excavator) an area approximately 600 ft (182.9 m) by 600 ft (182.9 m), moving approximately 182,000 cubic yards (139,150 cubic meters) of sediment. Dredged material will be placed in the water immediately adjacent to the inside of the bar in approximately 100 ft (33.3 m) of water. If required to enable dredging, confined blasting (hereafter "blasting") involving drilled boreholes and multiple charges with microdelays between blasts will be used to break up the sediment.

Safety restrictions impose some limits on blasting activity and potential mitigations available to protect marine mammals. The explosives cannot "sleep" after

being placed for longer than 24 hours without becoming a risk to private property and human health, and they cannot be detonated in the dark. If a marine mammal enters the blast area following the emplacement of charges, detonation will be delayed as long as possible. All other legal measures to avoid injury will be utilized; however, the charges will be detonated when delay is no longer feasible. As discussed in the mitigation section, in order to minimize the chances the charges need to be detonated while animals are present in the vicinity, the IHA includes a mitigation measure requiring explosives to be set as early in the day as possible, and detonated as soon as the pre-clearance zone is clear for 30 minutes.

Sounds resulting from confined blasting may result in the incidental take of marine mammals by Level A and Level B harassment in the form of slight injury (auditory and non-auditory) and behavioral harassment. Dredging and disposal of dredged material are not expected to result in either Level A or Level B harassment due to the low source level and mid-channel location of the dredging activities. If dredging is sufficient to deepen the channel to the required depth, reduced or no blasting may be necessary. The notice for the proposed IHA (88 FR 21630, April 11, 2023) analyzed a conservative scenario requiring blasting approximately 50 percent of the bar area, resulting in approximately 1,800 drilled boreholes and up to 24 total blasting events.

A detailed description of the planned project is provided in the **Federal Register** notice for the proposed IHA (88 FR 21630, April 11, 2023). 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 detailed description of the specific activity.

Comments and Responses

A notice of NMFS' proposal to issue an IHA to the USACE was published in the Federal Register on April 11, 2023 (88 FR 21630). That notice described, in detail,

USACE's planned activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorization, and any other aspect of the notice of proposed IHA, and requested that interested persons submit relevant information, suggestions, and comments. This proposed notice was available for a 30-day public comment period.

NMFS received two non-substantive comments on the proposed IHA: one from the U.S. Geological Survey stating no objections to the project, and one from a private citizen opposed to offshore wind, which is not related to this action.

Changes from the Proposed IHA to Final IHA

Since the **Federal Register** notice of the proposed IHA was published (88 FR 21630, April 11, 2023), NMFS published the final 2022 Alaska and Pacific Stock Assessment Reports (SARs), which describe revised stock structures under the MMPA for humpback whales. In the notice of proposed IHA, we explained that although we typically consider updated peer-reviewed data provided in draft SARs to be the best available science, and use the information accordingly, we make exception for proposed revised stock structures. Upon finalization of these revised stock structures, we have made appropriate updates, including description of the potentially affected stocks (see table 1), attribution of take numbers to stock (see **Estimated Take**), and by updating our analyses to ensure the necessary determinations are made for the new stocks (see **Negligible Impact Analysis and Determination and Small Numbers**).

Additionally, between the publication of the proposed IHA (88 FR 21630, April 11, 2023) and this notice, the USACE requested that the effective dates of the authorization be shifted from November 1, 2023 through October 31, 2024 to January 1, 2024 through December 31, 2024 due to logistical constraints. The analysis presented in the proposed IHA remains valid because the estimated takes were based on year-round

monitoring data at the project location. The change to the effective dates of the authorization is reflected in the **Dates** section, above.

Description of Marine Mammals in the Area of Specified Activities

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

Table 1 lists all species or stocks for which take is expected and authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance

estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Alaska and Pacific Ocean SARs. All values presented in table 1 are the most recent available at the time of publication and are available online at:

www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments.

Table 1 -- Species Likely Impacted by the Specified Activities¹

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ²	Stock abundance (CV, N _{min} , most recent abundance survey) ³	PBR	Annual M/SI ⁴
Order Artiodactyla – Infraorder Cetacea – Mysticeti (baleen whales)						
<i>Family Balaenopteridae (rorquals)</i>						
Humpback Whale ⁵	<i>Megaptera novaeangliae</i>	Hawai'i	-, -, N	11,278 (0.56, 7,265, 2020)	127	27.09
		Mexico – North Pacific	T, D, Y	918 (0.217, UNK, 2006)	UND	0.57
		Western North Pacific	E, D, Y	1,084 (0.088, 1,007, 2021)	3.4	5.82
Odontoceti (toothed whales, dolphins, and porpoises)						
<i>Family Phocoenidae (porpoises)</i>						
Harbor porpoise	<i>Phocoena phocoena</i>	Bering Sea ⁵	-, -, Y	UNK (UNK, N/A, 2008)	UND	0.4
		Gulf of Alaska	-, -, Y	31,046 (0.21, N/A, 1998)	UND	72
Order Carnivora – Pinnipedia						
<i>Family Otariidae (eared seals and sea lions)</i>						
Steller Sea Lion	<i>Eumetopias jubatus</i>	Western	E, D, Y	52,932 (N/A, 52,932, 2019)	318	254
		Eastern	-, -, N	43,201 (N/A, 43,201, 2017)	2592	112
<i>Family Phocidae (earless seals)</i>						
Harbor Seal	<i>Phoca vitulina</i>	Aleutian Islands	-, -, N	5,588 (N/A, 5,366, 2018)	97	90

¹ Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (<https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/>; Committee on Taxonomy (2022)).

² Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

³ NMFS marine mammal stock assessment reports online at: www.nmfs.noaa.gov/pr/sars/. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable due to lack of recent surveys allowing for accurate assessment of stock abundance.

⁴ These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (e.g., commercial fisheries, 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.

⁵The best available abundance estimate and Nmin are likely an underestimate for the entire stock because it is based upon a survey that covered only a small portion of the stock's range. PBR for this stock is undetermined due to this estimate being older than 8 years.

A detailed description of the of the species likely to be affected by the Unalaska Channel Deepening 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 (88 FR 21630, April 11, 2023); 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. Not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound

was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in table 2.

Table 2 -- 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, <i>Kogia</i> , river dolphins, Cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i>)	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>i.e.</i> , 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 <i>et al.</i> , 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 *et al.*, 2013).

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

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from USACE's construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the blasting area. The notice of proposed IHA (88 FR 21630, April 11, 2023) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from confined blasting activities 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 (88 FR 21630, April 11, 2023).

Estimated Take of Marine Mammals

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

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

Authorized takes would primarily be by Level B harassment, as use of the explosive source (*i.e.*, confined blasting) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury and tissue damage (Level A harassment) to result, primarily for cetaceans (humpback whale and harbor porpoise) and phocids because predicted auditory injury zones are larger than for otariids. The mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. While blasting has the potential to result in mortality, when the isopleths within which mortality could occur were calculated, the zones were sufficiently small that the risk of mortality is considered discountable. Below we describe how the take numbers were estimated.

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

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment). Thresholds have also been developed to identify the pressure levels above which animals may incur different types of tissue damage (non-acoustic Level A harassment or mortality) from exposure to pressure waves from explosive detonation.

Level A harassment – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive (including explosives) or non-impulsive). These thresholds are provided in table 3, below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at:

Explosive sources – Based on the best available science, NMFS uses the acoustic and pressure thresholds indicated in tables 3 and 4 to predict the onset of behavioral harassment, PTS, TTS, tissue damage, and mortality.

For explosive activities using single detonations (*i.e.*, no more than one detonation within a day), such as those described in the planned activity, NMFS uses TTS onset thresholds to assess the likelihood of behavioral harassment, rather than the Level B Harassment threshold for multiple detonations indicated in table 3. While marine mammals may also respond behaviorally to single explosive detonations, these responses are expected to typically be in the form of a startle reaction, rather than a more meaningful disruption of a behavioral pattern. On the rare occasion that a single detonation might result in a behavioral disturbance that qualifies as Level B harassment, it would be expected to be in response to a comparatively higher received level. Accordingly, NMFS considers the potential for these responses to be quantitatively accounted for through the application of the TTS threshold, which, as noted above, is 5 dB higher than the behavioral harassment threshold for multiple explosives.

Table 3 -- Explosive Thresholds for Marine Mammals for PTS, TTS, and Behavior (multiple detonations)

Hearing Group	PTS Impulsive Thresholds	TTS Impulsive Thresholds	Behavioral Threshold (multiple detonations)
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{p,0-pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{p,0-pk,flat}$: 213 dB $L_{E,LF,24h}$: 168 dB	<i>Cell 3</i> $L_{E,LF,24h}$: 163 dB
Mid-Frequency (MF) Cetaceans	<i>Cell 4</i> $L_{p,0-pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	<i>Cell 5</i> $L_{p,0-pk,flat}$: 224 dB $L_{E,MF,24h}$: 170 dB	<i>Cell 6</i> $L_{E,MF,24h}$: 165 dB
High-Frequency (HF) Cetaceans	<i>Cell 7</i> $L_{p,0-pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	<i>Cell 8</i> $L_{p,0-pk,flat}$: 196 dB $L_{E,HF,24h}$: 140 dB	<i>Cell 9</i> $L_{E,HF,24h}$: 135 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 10</i> $L_{p,0-pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	<i>Cell 11</i> $L_{p,0-pk,flat}$: 212 dB $L_{E,PW,24h}$: 170 dB	<i>Cell 12</i> $L_{E,PW,24h}$: 165 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 13</i> $L_{p,0-pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	<i>Cell 14</i> $L_{p,0-pk,flat}$: 226 dB $L_{E,OW,24h}$: 188 dB	<i>Cell 15</i> $L_{E,OW,24h}$: 183 dB

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS/TTS onset.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 μ Pa, and cumulative sound exposure level (L_E) has a reference value of 1 μ Pa²s. In this table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, ANSI defines peak sound pressure 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 overall marine mammal 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.

Table 4 -- Lung and GI Tract Injury Thresholds for Underwater Explosives

Hearing Group	Mortality (Severe lung injury)*	Slight Lung Injury*	GI Tract Injury
All Marine Mammals	<i>Cell 1</i> Modified Goertner model; Equation 1	<i>Cell 2</i> Modified Goertner model; Equation 2	<i>Cell 3</i> $L_{p,0-pk,flat}$: 237 dB

* Lung injury (severe and slight) thresholds are dependent on animal mass (Recommendation: table C.9 from DON 2017 based on adult and/or calf/pup mass by species).

Note: Peak sound pressure (L_{pk}) has a reference value of 1 μ Pa. In this table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, ANSI defines peak sound pressure 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 overall marine mammal generalized hearing range.

Modified Goertner Equations for severe and slight lung injury (pascal-second)

$$\text{Equation 1: } 103M^{1/3}(1 + D/10.1)^{1/6} \text{ Pa-s}$$

$$\text{Equation 2: } 47.5M^{1/3}(1 + D/10.1)^{1/6} \text{ Pa-s}$$

M animal (adult and/or calf/pup) mass (kg) (table C.9 in DoN 2017)

D animal depth (meters)

Ensonified Area

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

NMFS computed cumulative sound exposure impact zones from the blasting information provided by the USACE. Peak source levels of the confined blasts were calculated based on Hempen *et al.* (2007), and scaled using a distance of 10 ft (3 m) and a weight of 95 lbs (43.1 kg) for a single charge. The total charge weight is defined as the product of the single charge weight and the number of charges. In this case, the number of charges is 75. Explosive energy was then computed from peak pressure of the single maximum charge, using the pressure and time relationship of a shock wave (Urick, 1983). Due to time and spatial separation of each single charge by a distance of 10 ft (3m), the accumulation of acoustic energy is added sequentially, assuming the transmission loss follows cylindrical spreading within the matrix of charges. The sound exposure level (SEL) from each charge at its source can then be calculated, followed by the received SEL from each charge. Since the charges will be deployed in a grid of 10 ft (3 m) by 10 ft (3 m) apart, the received SELs from different charges to a given point will vary depending on the distance of the charges from the receiver. Without specific information regarding the layout of the charges, the modeling assumes a grid of 8 by 9 charges with an additional three charges located in three peripheral locations. Among the various total SELs calculated (one at a receiver location corresponding to each perimeter charge), the largest value, SEL_{total} (max) is selected to calculate the impact range. Using the pressure versus time relationship above, the frequency spectrum of the explosion can be computed by taking the Fourier transform of the pressure (Weston, 1960), and subsequently be used to produce hearing range weighted metrics.

Frequency specific transmission loss of acoustic energy due to absorption is computed using the absorption coefficient, α (dB/km), summarized by François and Garrison (1982a, b). Seawater properties for computing sound speed and absorption coefficient were based on NMFS Alaska Fisheries Science Center report of mean measurements in Auke Bay (Sturdevant and Landingham, 1993) and the 2022 average

seawater temperature from Unalaska (NOAA, 2023). Transmission loss was calculated using the sonar equation:

$$TL = SEL_{total(m)} - SEL_{threshold}$$

where $SEL_{threshold}$ is the Level A harassment threshold. The distances, R, where such transmission loss is achieved were computed numerically by combining both geometric transmission loss, and transmission loss due to frequency-specific absorption. A spreading coefficient of 20 is assumed to account for acoustic energy loss from the sediment into the water column. The outputs from this model are summarized in table 5, below.

Table 5 -- Model Results of Impact Zones for Blasting in Meters (m)

Species	Mortality	Slight lung injury	GI Tract	PTS: SELcum	PTS: SPLpk	TTS: SELcum	TTS: SPLpk
Low frequency cetacean	4.0	9.2	25.8	344.66*	205.29	1,918*	409.62
High frequency cetacean	20.3	47.5	25.8	1,213.79	1,453.37*	4,435.57*	2,899.86
Otariid	13.8	32.3	25.8	40.00	91.92*	249.76*	183.40
Phocid	18.2	42.5	25.8	164.84	230.34*	909.10*	459.60

*For the dual criteria of SELcum and SPLpk, the largest of the two calculated distances for each species group was used in our analysis. The PTS and TTS distances for Steller sea lions resulting from the model seemed uncharacteristically small when compared to the other thresholds resulting from the model and were doubled to 92 m and 230 m respectively for take estimation, mitigation, and monitoring.

Marine Mammal Occurrence

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

Reliable densities are not available for Iliuliuk Bay, and generalized densities for the North Pacific are not applicable given the high variability in occurrence and density at specific areas around the Aleutian Island chain. Therefore, the USACE consulted previous survey data in and around Iliuliuk Bay and Dutch Harbor to arrive at a number of animals expected to occur within the project area per day. Figure 4-8 and table 4-3 in

the IHA application provide further detail on observations of humpback whales, Steller sea lions, and harbor seals in and around Iliuliuk Bay. Harbor porpoise were not addressed in the IHA application; however, NMFS has authorized takes of harbor porpoise take out of an abundance of caution, based on the 2017 sighting of porpoises in the action area by USACE biologists.

Take Estimation

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

Since reliable densities are not available, the USACE requested take based on the maximum number of animals that may occur in the blasting area per day multiplied by the number of days of the activity. The applicant varied these calculations based on certain factors. Because of the nature of the planned blasting (i.e., no more than one blasting event per day), the behavioral thresholds associated with the activity are the same as for the onset of TTS for all species. Both behavioral disturbance and TTS may occur.

Humpback whale – Humpback whales are commonly sighted outside the mouth of Iliuliuk Bay, and were most common in August and September between 2 and 8 km from the survey site outside the mouth of the bay. Humpbacks were also spotted within Iliuliuk Bay in much lower numbers (maximum daily sightings within the bay: 4; outside the bay: 47) (USACE 2022). Based on the previous monitoring efforts in and around Iliuliuk Bay, USACE and NMFS estimated that a maximum of two animals may be present within the Level B harassment threshold for each blasting event. While NMFS expects that the monitoring and mitigation described later in this document will be effective at preventing injurious take of marine mammals, we recognize that humpback whales are common in the area, that animals may enter the blasting area after charges have been set, and that there is a limit on the amount of time detonation may be safely

delayed. Humpback whales are highly visible, and their presence would likely be known before charges are laid on a blasting day. We therefore conservatively estimate up to 10 percent of the blasting events may include a humpback whale within the Level A harassment isopleth. With a maximum take of 2 animals per day, multiplied by a maximum of 24 days of blasting, we have authorized up to 48 takes by Level B harassment and up to 3 takes by Level A harassment of humpback whales.

Harbor porpoise – Harbor porpoise were not included in the IHA application. This species typically travels alone or in pairs, but may occasionally be sighted in larger groups. Based on the USACE's observation of a group of eight individuals in the project area in 2017, and other infrequent sightings of harbor porpoise in and around Iliuliuk Bay, NMFS conservatively estimated that two animals may occur within the Level B harassment threshold on up to 25 percent of blasting days. Out of an abundance of caution, and because this species is both very sensitive to noise (meaning the Level A harassment zone is comparatively larger), including explosions (von Benda-Beckmann *et al.*, 2015), and difficult to see in the field, NMFS also proposed that up to two harbor porpoise could be within the Level A harassment threshold for up to 10 percent of the blasting events. Given 24 days of blasting, we have authorized up to 12 harbor porpoise takes by Level B harassment, and up to 5 harbor porpoise takes by Level A harassment over the course of the activity.

Steller sea lion – During previous monitoring efforts, Steller sea lions were sighted most frequently inside of Iliuliuk Bay, within 4 km of the project area. The maximum number of sightings in a single day was 32, though it is unclear whether this includes multiple sightings of the same large group of 10 to 12 individuals (USACE 2022). Steller sea lions in this area are known to congregate around and follow fishing vessels that regularly transit into and out of Dutch Harbor. Given the previous monitoring data, USACE and NMFS conservatively estimated that a maximum of two animals may

be within the Level B harassment threshold for each blast. While NMFS expects that the monitoring and mitigation described later in this document will be effective at preventing injurious take of marine mammals, we recognize that Steller sea lions are common in the area, that animals may enter the blasting area after charges have been set, and that there is a limit on the amount of time detonation may be safely delayed. Steller sea lions may be difficult for observers to detect before charges are laid on a blasting day, and we therefore conservatively estimated up to two Steller sea lions may be within the Level A harassment isopleth for up to 20 percent of the blasting events. With a maximum take of 2 animals per day, multiplied by a maximum of 24 days of blasting, we have authorized up to 48 takes by Level B harassment and up to 5 takes by Level A harassment of Steller sea lions.

Harbor seal – Previous monitoring efforts documented harbor seals close to the shoreline Ulatka Head, on the northeastern side of Iliuliuk Bay between 1 and 4 km from the project area, but they were sighted throughout Iliuliuk Bay in all survey months (April – October) (USACE 2022). They were most frequently sighted in the summer months, with up to 43 sightings on a single day. Based on the high rate of sightings within a few hundred meters of the Level B harassment isopleth in the previous data, USACE and NMFS conservatively assumed a maximum of 10 seals within the Level B harassment threshold for each blast. While NMFS expects that the monitoring and mitigation described later in this document will be effective at preventing injurious take of marine mammals, we recognize that harbor seals are common in the area, that animals may enter the blasting area after charges have been set, and that there is a limit on the amount of time detonation may be safely delayed. Harbor seals were frequently sighted close to the Level B threshold distance and may be difficult for observers to detect before charges are laid on a blasting day. We therefore conservatively estimated up to two harbor seals may be within the Level A harassment isopleth for up to 20 percent of the

blasting events. With a maximum take of 10 animals per day, multiplied by a maximum of 24 days of blasting, we have authorized up to 240 takes by Level B harassment and up to 5 takes by Level A harassment of harbor seals.

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, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat, 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 and impact on operations.

In addition to the measures described later in this section, the USACE will employ the following standard mitigation measures:

- Conduct a briefing between construction supervisors and crews and the marine mammal monitoring team prior to the start of construction, and when new personnel join the work, to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures;
- For in-water and over-water heavy machinery work, if a marine mammal comes within 10 m, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions;
- Work may only occur during daylight hours, when visual monitoring of marine mammals can be conducted; and
- If take reaches the authorized limit for an authorized species, the blasting activity will be stopped as these species approach the Monitoring zones (table 6) to avoid additional take of them.

Table 6 -- Monitoring and Pre-Clearance Zones for Blasting Activities for Species with Authorized Take

	Pre-Clearance Zones (m)		Monitoring Zones (m)
	Level A Harassment Thresholds (PTS)	Level B Harassment Thresholds (TTS)	
Humpback whale	345	1,918	2,500
Harbor Porpoise	1,214	4,500	5,000
Steller sea lion	92	250	2,500
Harbor seal	231	910	2,500

The USACE will implement the following mitigation requirements:

Establishment of Pre-clearance and Monitoring Zones — The USACE and NMFS have identified pre-clearance zones associated with the distances within which Level A harassment and Level B harassment are expected to occur. Additionally, monitoring zones that extend beyond the pre-clearance zones have been established. Monitoring zones provide utility for observing by establishing monitoring protocols for

areas adjacent to the pre-clearance zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project area outside the Level B harassment pre-clearance zone and thus prepare for a potential cessation of activity should the animal enter the Level A harassment zone (table 6).

Pre-monitoring and Delay of Activities- Prior to the start of daily in-water activity, or whenever a break in activity of 30 minutes or longer occurs, the observers will observe the pre-clearance and monitoring zones for a period of 30 minutes. Pre-clearance zones will be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If any marine mammal is observed within the Level A pre-clearance zone, activity cannot proceed until the animal has left the zone or has not been observed for 15 minutes. If marine mammals are observed within the Level B pre-clearance or monitoring zones but outside of the Level A pre-clearance zones, work may proceed in good visibility conditions. If work ceases for more than 30 minutes, the pre-activity monitoring of both the monitoring zones and pre-clearance zones will commence.

In the event that a large whale for which take is not authorized is sighted within either the monitoring or the Level A or Level B pre-clearance zones during monitoring prior to placement of charges on a planned blast day, USACE will evaluate whether environmental conditions allow for blasting to be delayed to the following day. If charges have already been laid before the whale is sighted, blasting will not commence until the whale has been positively observed outside of the monitoring zone, subject to the safety restrictions discussed below.

Charges for blasting will not be laid if marine mammals are within the Level A pre-clearance zone or appear likely to enter the Level A pre-clearance zone. However, once charges are placed, they cannot be safely left undetonated for more than 24 hours. For blasting, the monitoring and pre-clearance zones will be monitored for a minimum of

30 minutes prior to detonating the blasts. If a marine mammal is sighted within the Level A or Level B pre-clearance zones following the emplacement of charges, detonation will be delayed until the zones are clear of marine mammals for 30 minutes. This will continue as long as practicable within the constraints of the blasting design but not beyond sunset on the same day as the charges cannot lay dormant for more than 24 hours, which may force the detonation of the blast in the presence of marine mammals. All other legal measures to avoid injury will be utilized; however, the charges will be detonated when delay is no longer feasible.

Charges will be laid as early as possible in the morning and stemming procedures will be used to fill the blasting holes to potentially reduce the noise from the blasts. Blasting will only be planned to occur in good visibility conditions, and at least 30 minutes after sunrise and at least one hour prior to sunset. The zones will also be monitored for 1 hour post-blasting.

If a detonation occurs when a marine mammal is known to be within the Level A or Level B pre-clearance zones, USACE will observe the blast area for two hours after the blasting event, or until visibility or safety conditions decline to the point that monitoring is no longer feasible, to determine as much as possible about the behavior and physical status of the marine mammal affected by the blasting event.

Based on our evaluation of the applicant's planned measures, as well as other measures considered by NMFS, NMFS has determined that the listed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses.

Monitoring and Reporting

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

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

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

- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,

- Mitigation and monitoring effectiveness.

Visual Monitoring

Monitoring will be conducted 30 minutes before, during, and 30 minutes after construction activities. In addition, observers must record all incidents of marine mammal occurrence, regardless of distance from activity, and must document any behavioral reactions in concert with distance from construction activities.

Protected Species Observers (PSOs) will be land- and boat-based. For blasting, three PSOs will be required (two land-based and one boat-based). Observers will be stationed at locations that provide adequate visual coverage for shutdown and monitoring zones. Potential observation locations are depicted in Figure 3-1 of the applicant's Marine Mammal Monitoring and Mitigation Plan. During blasting, pre-blast monitoring, and post-blast monitoring, three observers will be on duty. Optimal observation locations will be selected based on visibility and the type of work occurring. All PSOs will be trained in marine mammal identification and behaviors and are required to have no other project-related tasks while conducting monitoring. In addition, monitoring will be conducted by qualified observers, who will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable. Monitoring of construction activities must be conducted by qualified PSOs (see below), who must have no other assigned tasks during monitoring periods. The applicant must adhere to the following conditions when selecting observers:

- Independent PSOs must be used (*i.e.*, not construction personnel);
- At least one PSO must have prior experience working as a marine mammal observer during construction activities;

- Other PSOs may substitute education (degree in biological science or related field) or training for experience;
- Where a team of three 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; and
- The applicant must submit PSO curriculum vitae for approval by NMFS.

The applicant must ensure that observers 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.

At least 24 hours prior to blasting, the USACE will notify the Office of Protected Resources, NMFS Alaska Regional Office, and the Alaska Regional Stranding Coordinator that blasting is planned to occur, as well as notify these parties within 24 hours after blasting that blasting actually occurred. If a marine mammals is known to be

within the Level A or Level B pre-clearance zones during a detonation, USACE will report the following information within 24 hours of the blasting event:

- Description of the blasting event;
- PSO positions and monitoring effort for the 24 hours preceding the blast;
- Environmental conditions (*e.g.*, Beaufort sea state, visibility);
- Description of all marine mammal observations in the 24 hours preceding

the incident;

- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

A draft marine mammal monitoring report will be submitted to NMFS within 90 days after the completion of construction activities. It will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Date and time that monitored activity begins or ends;
- Construction activities occurring during each observation period;
- Weather parameters (*e.g.*, percent cover, visibility);
- Water conditions (*e.g.*, sea state, tide state);
- Species, numbers, and, if possible, sex and age class of marine mammals;
- Description of any observable marine mammal behavior patterns,

including bearing and direction of travel and distance from construction activity;

- Distance from construction activities to marine mammals and distance from the marine mammals to the observation point;

- Locations of all marine mammal observations; and
- Other human activity in the area.

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.

In the unanticipated event that the specified activity likely causes the take of a marine mammal in a manner prohibited by the IHA (if issued), such as a serious injury or mortality, the USACE will immediately cease the specified activities and report the incident to the Office of Protected Resources, NMFS Alaska Regional Office, and the Alaska Regional Stranding Coordinator. The report will include the following information:

- Description of the incident;
- Environmental conditions (*e.g.*, Beaufort sea state, visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

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

In the event that the USACE discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition as described in the next paragraph), the USACE will immediately report the incident to the Office of Protected Resources, NMFS Alaska Regional Office, and the Alaska Regional Stranding Coordinator. The report will include the same information identified in the paragraph

above. Activities will be able to continue while NMFS reviews the circumstances of the incident. NMFS will work with the USACE to determine whether modifications in the activities are appropriate.

In the event that the USACE discovers an injured or dead marine mammal and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the USACE will report the incident to the Office of Protected Resources, NMFS Alaska Regional Office, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinator, within 24 hours of the discovery. The USACE will provide photographs, video footage (if available), or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Coordinator.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989

preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to all the species listed in table 1, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity.

As stated in the mitigation section, pre-clearance zones equal to or exceeding Level A isopleths shown in table 6 for blasting will be implemented for all species. Serious injury or mortality is not anticipated nor authorized.

Behavioral disturbances of marine mammals to blasting, if any, are expected to be mild and temporary due to the short-term duration of the noise produced by the source and the fact that only a single blasting event will occur on a given day. Additionally, blasting events will not occur on consecutive days. Given the short duration of noise-generating activities per day and that blasting events would occur on a maximum of 24 days, any harassment would be temporary. For all species except humpbacks, there are no known biologically important areas near the project zone that will be impacted by the construction activities. The project area occupies a small percentage of the humpback whale feeding BIA and Critical Habitat areas, and there is sufficient similar habitat nearby. Acoustic impacts will be short-term and temporary in duration. The region of Iliuliuk Bay where the project will take place is located in a highly trafficked commercial port area with regular marine vessel traffic.

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 any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;
- Authorized Level A harassment will be very small amounts and of low degree;
- The intensity of anticipated takes by Level B harassment is relatively low for all stocks. Level B harassment will be primarily in the form of behavioral disturbance, resulting in avoidance of the project areas around where blasting is occurring, with some TTS that may limit the detection of acoustic cues for relatively brief amounts of time;
- While a feeding BIA and Critical Habitat for humpback whales exist in the action area, the planned activity occupies a small percentage of the total BIA and of the Critical Habitat, and would occur on a short term, temporary basis.
- The USACE will implement mitigation measures, such as pre-clearance zones, for all in-water and over-water activities; and
- Monitoring reports from similar work in Alaska have documented little to no effect on individuals of the same species impacted by the specified activities (USACE, 2020).

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

Table 7 presents the number of animals that could be exposed to received noise levels that may result in take by Level A or Level B harassment for the construction at Iliuliuk Bay, Unalaska. Our analysis shows that less than one-third of the best available population estimate of each affected stock could be taken. Therefore, the numbers of animals authorized to be taken for all species would be considered small relative to the relevant stocks or populations even if each estimated taking occurred to a new individual—an extremely unlikely scenario. For harbor seals and Steller sea lions occurring in the vicinity of the project site, there will almost certainly be some overlap in individuals present day-to-day, and these takes are likely to occur only within some small portion of the overall regional stock.

Table 7 -- Summary of Authorized Instances of Level A and Level B Harassment

Species	DPS/Stock	Number of Takes by Level B Harassment by Stock	Number of Takes by Level A Harassment by Stock	Stock Abundance	Percent of Population
Humpback whale	Western North Pacific	0.96	0	1,107	0.1
	Mexico – North Pacific	3.36	0	4,973	0.1
	Hawaii	43.68	3	10,103	0.5
Harbor seal	Aleutian Island Stock	240	5	5,588	4.4

Harbor porpoise ¹	Bering Sea	12	5	31,046	0.05
	Gulf of Alaska				
Steller sea lion	Western DPS	48	5	52,932	0.1

¹ There is not enough information available to determine takes for separate stocks for harbor porpoise. Calculations have been based on the best available stock abundance for the Gulf of Alaska stock, as there are no available data for the Bering Sea stock. This number is conservative, because it represents a minimum value of both stocks.

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

Unmitigable Adverse Impact Analysis and Determination

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.

Subsistence activities in Unalaska have historically included the harvest of pinnipeds and sea otters. However, subsistence harvests of marine mammals declined between 1994 and 2008 (the last year for which data are available) (ADF&G 2022). Additionally, a ban on firearm discharge within the city limits of the City of Unalaska means that current subsistence harvesting typically occurs from skiffs in areas outside of Dutch Harbor and Iliuliuk Bay, including Wide Bay, Kalekta Bay, Bishop Point, Wislow Island, and Beaver Inlet. The planned activity would not impact these areas.

Any impacts to marine mammals from the planned activity are likely to be short-term and temporary, and limited to the area around the blasting site. While a limited number of individuals may experience PTS, there are no expected impacts to the availability of marine mammals for subsistence uses due to the blasting activity.

Based on the description of the specified activity, and the mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from USACE's construction activities.

Endangered Species Act

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

There are two marine mammal species (western DPS Steller sea lion and humpback whale (Mexico and Western North Pacific DPSs)) with confirmed occurrence in the project area that are listed as endangered under the ESA. The NMFS Alaska Regional Office Protected Resources Division issued a Biological Opinion on November 16, 2023 under section 7 of the ESA, on the issuance of an IHA to USACE under section 101(a)(5)(D) of the MMPA by the NMFS Permits and Conservation Division. The Biological Opinion concluded that the action is not likely to jeopardize the continued existence of Western DPS Steller sea lions or humpback whales from either the Mexico or Western North Pacific DPSs, and is not likely to destroy or adversely modify humpback whale critical habitat.

National Environmental Policy Act

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

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

Authorization

As a result of these determinations, NMFS has issued an IHA to the USACE for conducting confined blasting in Iliuliuk Bay, Unalaska between January 1, 2024 and December 31, 2024, incorporating the previously mentioned mitigation, monitoring, and reporting requirements. The IHA can be found at:

<https://www.fisheries.noaa.gov/action/incidental-take-authorization-us-army-corps-engineers-unalaska-dutch-harbor-channel>.

Dated: November 20, 2023.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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