



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XD165]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Skagway Ore Terminal Redevelopment Project in Skagway, 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 Municipality of Skagway (MOS) to incidentally harass marine mammals during construction associated with the Ore Terminal redevelopment project in Skagway, Alaska.

DATES: This authorization is effective from October 1, 2023 through September 30, 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-municipality-skagways-skagway-ore-terminal-redevelopment>. In case of problems accessing these documents, please call the contact listed below.

FOR FURTHER INFORMATION CONTACT: Jenna Harlacher, 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 August 9, 2022, NMFS received a request from MOS for an IHA to take marine mammals incidental to Ore Terminal redevelopment in Skagway, Alaska. Following NMFS’ review of the application and subsequent revised versions, MOS submitted a final application that was deemed adequate and complete on February 23, 2023. The proposed IHA published for public comment on April 18, 2023 (88 FR 23627). MOS’s request is for take of 7 species (including 11 stocks) by Level B and

Level A harassment. Neither MOS nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Activity

MOS plans to redevelop the Skagway Ore Terminal in Skagway, Alaska. The project will cover construction from fall 2023 through spring 2024 to avoid construction during cruise ship season with a maximum of 196 days of pile installation and removal. While the total number of estimated pile driving days is 213, some days will include both impact and vibratory pile driving, reducing the maximum number of workdays to 196 (Table 1). This project involves installation and removal of 36 temporary steel pile guides, removal of 692 piles, and installation of 244 permanent steel piles. The IHA would be effective from October 1, 2023 through September 30, 2024. MOS will conduct a total of 142 days of vibratory pile installation and removal and 71 days of impact pile driving, which was updated to reflect a more accurate number of days from the proposed notice of IHA. Sounds resulting from pile installation and removal may result in the incidental take of marine mammals by Level A and Level B harassment in the form of auditory injury or behavioral harassment.

Table 1 -- Pile Installation Methods and Durations⁺

Pile size, Method	Number of piles	Duration/Strikes per pile	Piles Driven /Day	Estimated Days ¹
36-in to 48-in steel pile**, Impact Installation	74	1800 strikes	2	34
24-in steel pile, Impact Installation	170	700 strikes	5	37
Up to 30-in steel pile*, Vibratory Installation and Removal	511	45 min	5	103
36-in to 48 in steel pile**, Vibratory Installation	74	45 min	5	15
14-in timber pile, Vibratory Removal	423	21 min	18	24

*Includes pile sizes: 10.75-in, 14-in, 16-in, 20-in, 24-in, 28-in, and 30-in.

**Includes pile sizes: 36-in, 42-in, and 48-in.

¹Estimated days are based on individual days of work, in reality work could occur on the same day reducing the total number of workdays to 196

[†]Changes were made to this table from proposed to final including: MOS updating their estimated work days and including temporary pile installation and removal in the up to 30-in steel piles.

A further detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (88 FR 23627, April 18, 2023). Please refer to that **Federal Register** notice for the description of the specified activity.

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

Comments and Responses

A notice of NMFS' proposal to issue an IHA to MOS was published in the **Federal Register** on April 18, 2023 (88 FR 23627). That notice described, in detail, MOS activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. During the 30-day public comment period only non-substantive comments were received and are not discussed further.

Changes from the Proposed IHA to Final IHA

Changes were made between publication of the notice of proposed IHA and this notice of final IHA. Changes have been made to correct typographical errors in pile numbers in the proposed **Federal Register** notice. The effective dates of the IHA, the maximum number of days of pile driving activity, and the Protected Species Observer (PSO) monitoring locations have been updated at the request of MOS. Harbor porpoise stock abundance was corrected and language limiting monitoring to a specific Beaufort sea state was removed. Additionally, take by Level B and Level A harassment has been updated for harbor porpoise, Dall's porpoise, harbor seal, and Steller sea lion to reflect the updated number of workdays and correct mistakes in ensonified area calculations.

Since the **Federal Register** notice of the proposed IHA was published (88 FR 23627, April 18, 2023), NMFS published the final 2022 Alaska and Pacific Stock Assessment Reports (SARs), which describe revised stock structures under the MMPA for humpback whales and southeast Alaska harbor porpoise (Carretta *et al.*, 2023; Young

et al., 2023). 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 2), 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**).

Description of Marine Mammals in the Area of Specified Activities

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

Table 2 lists all species or stocks for which take is expected and authorized to be authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or 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' 2021 Alaska Marine Mammal SARs. All values presented in Table 2 are the most recent available at the time of publication (including from the draft 2022 SARs) and are available online at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

Table 2 -- Species Likely Impacted by the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ¹	Stock abundance (CV, Nmin, most recent abundance survey) ²	PBR	Annual M/SI ³
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Balaenopteridae (rorquals)						
Humpback whale	<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)	UNK	0.57
Minke whale	<i>Balaenoptera acutorostrata</i>	Alaska	-, -, N	UNK	NA	0
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Killer whale	<i>Orca orcinus</i>	Eastern North Pacific, Norther Residents, Southeast Alaska	-, -, N	302 (N/A, 302, 2018)	2.2	0.2

		Eastern North Pacific Alaska Residents	-,-,N	1,920 (N/A, 1,920, 2019)	19	1.3
		West Coast Transients	-,-,N	349 (N/A, 349, 2018)	3.5	0.4
		Gulf, Aleutian, Bering Transients	-,-,N	587 (N/A, 587, 2020)	5.9	0.8
Family Phocoenidae (porpoises)						
Harbor Porpoise	<i>Phocoena phocoena</i>	Northern Southeast Alaska Inland Waters	-,-,N	1,619 (0.26, 1,250, 2019)	13	5.6
Dall's porpoise ⁴	<i>Phocoenoides dalli</i>	Alaska	-,-,N	15,432 (0.28, 13, 110, 2021)	131	37
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
		Western Stock	E,D,Y	52,932 (N/A, 52,932, 2019)	318	254
Steller sea lion	<i>Eumetopias jubatus</i>	Eastern Stock	-,-,N	43,201 (N/A, 43,201, 2017)	2,592	112
Family Phocidae (earless seals)						
Harbor seal	<i>Phoca vitulina richardii</i>	Alaska- Lynn Canal/Stephens Passage	-,-,N	13,388 (N/A, 11,867, 2016)	214	50
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-assessment-reports. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. 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. 4 – Previous abundance estimates covering the entire stock's range are no longer considered reliable and the current estimates presented in the SARs and reported here only cover a portion of the stock's range. Therefore, the calculated Nmin and PBR is based on the 2015 survey of only a small portion of the stock's range. PBR is considered to be biased low since it is based on the whole stock whereas the estimate of mortality and serious injury is for the entire stock's range.						

As indicated above, all 7 species (with 11 managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and for which we have authorized.

A detailed description of the species likely to be affected by MOS's construction 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 23627, April 18, 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. However, there was a mistake in the harbor porpoise stock abundance listed in the notice for the proposed IHA, and the value was updated in this notice of final IHA. Please refer to that **Federal Register** notice for these descriptions. Please also refer to the 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 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, <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 and Holt, 2013).

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

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

The effects of underwater noise from the MOS's pile driving activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the project area. The notice of the proposed IHA (88 FR 23627, April 18, 2023) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the MOS's pile driving 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 the proposed IHA (88 FR 23627, April 18, 2023).

Estimated Take of Marine Mammals

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 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 acoustic sources (*i.e.*, vibratory and impact pile driving) 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. 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. Below, we describe how the take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can

contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the 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 permanent threshold shift (PTS) of some degree (equated to Level A harassment).

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007, 2021, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 μ Pa)) for continuous (*e.g.*, vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μ Pa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these behavioral

harassment thresholds are expected to include any likely takes by temporary threshold shift (TTS) as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

MOS's activity includes the use of continuous (vibratory pile driving) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μ Pa are applicable.

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

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>.

Table 4 -- Thresholds Identifying the Onset of Permanent Threshold Shift.

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$: 199 dB

Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$: 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. <u>Note:</u> Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of 1 μPa²s. 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>i.e.</i>, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.		

Ensonified Area

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

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

In order to calculate distances to the Level A harassment and Level B harassment thresholds for the methods and piles being used in this project, NMFS used acoustic monitoring data from other locations to develop source levels for the various pile types, sizes and methods (Table 5).

Table 5 – Observed Source Levels for Pile Installation and Removal

Pile size, Method	Peak SPLs (dB)	RMS SPLs (dB)	SELss (dB)	Source
36-in to 48-in steel pile**, Impact Installation	210	193	183	Caltrans 2020
24-in steel pile, Impact Installation	203	189	177	Caltrans 2020
Up to 30-in steel pile*, Vibratory Installation and Removal	196	159	NA	Caltrans 2020
36-in to 48-in steel pile**, Vibratory Installation	180	170	NA	Caltrans 2015
14-in timber pile, Vibratory Removal	NA	158	NA	Greenbusch 2018

Note: SPLs = single strike sound pressure level; RMS = root mean square.

*Includes pile sizes: 10.75-in, 14-in, 16-in, 20-in, 24-in, 28-in, and 30-in.

**Includes pile sizes: 36-in, 42-in, and 48-in.

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:

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

Where:

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R_1 = the distance of the modeled SPL from the driven pile, and

R_2 = the distance from the driven pile of the initial measurement.

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 MOS's planned activities. The Level B harassment zones for the planned activities are shown in Table 6.

Level A Harassment Zones

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources, such as pile installation or removal, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur PTS. The isopleths generated by the User Spreadsheet used the same TL coefficient as the Level B harassment zone calculations (*i.e.*, the practical spreading value of 15). Inputs used in the User Spreadsheet (*e.g.*, number of piles per day, duration and/or strikes per pile, source levels) are presented in Table 1 and Table 5. The resulting isopleths are reported in Table 6.

Table 6 -- Level A and Level B Harassment Isopleths and Areas for Impact and Vibratory Pile Driving

Activity	Level A harassment zone (m) / Area ensonified (km ²) ¹					Level B harassment zone (m) / Area ensonified (km ²)
	LF cetacean	MF cetacean	HF cetacean	Phocids	Otariids	
36-in to 48-in steel pile**, Impact Installation	2,345.7 / 5.85	83.4 / 0.02	2,794.1 / 6.95	1,255.3 / 2.20	91.4 / 0.05	1,584.9 / 3.23
24-in steel pile, Impact Installation	1,245.8 / 2.16	44.3 / 0.01	1,483.9 / 2.88	666.7 / 0.88	48.5 / 0.01	857.7 / 1.23
Up to 30-in steel pile*, Vibratory Installation and Removal	12.1 / < 0.01	1.1 / < 0.01	17.9 / < 0.01	7.4 / < 0.01	0.5 / < 0.01	3,981 / 9.08
36-in to 48-in steel pile**, Vibratory Installation	65.6 / 0.01	5.8 / < 0.01	97 / 0.03	39.9 / 0.01	2.8 / < 0.01	21,544 / 20.36
14-in timber pile, Vibratory Removal	14.7 / < 0.01	1.3 / < 0.01	21.7 / < 0.01	8.9 / < 0.01	0.6 / < 0.01	3,414.5 / 8.06

*Includes pile sizes: 10.75-in, 14-in, 16-in, 20-in, 24-in, 28-in, and 30-in.

**Includes pile sizes: 36-in, 42-in, and 48-in.

¹Ensonified areas were updated from proposed to final to correct a mistake.

Marine Mammal Occurrence

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

For marine mammal density information in the Skagway area we use data from the Pacific Navy Marine Species Density Database (U.S. Navy, 2021) and sources specific to the Skagway area to estimate take for marine mammals. The Marine Species Density Database incorporates analyzed literature and research for marine mammal density estimates per season for the Gulf of Alaska and the Western Behm Canal. The Western Behm Canal is closer to the Project site and geographically more similar (an

inlet compared to open ocean); therefore, density estimates for Western Behm Canal are used as proxies. Density estimates specific to Taiya Inlet or Lynn Canal are not available for any of the species addressed in this application, and therefore takes must be estimated based on the nearest available and most appropriate density estimates, plus site-specific knowledge and professional judgement. Table 7 density estimates are calculated based on winter density estimates of Western Behm Canal.

Table 7 -- Density of Marine Mammal Species in the Project Area

Species	Density (per km ²)
Humpback whale	0.0081
Minke Whale	0.0017
Dall's Porpoise	0.1210
Harbor Porpoise	0.0473
Killer Whale	0.0041
Harbor Seal	1.730
Steller Sea Lion	0.0123

Take Estimation

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

Using the overall area of disturbance generated by pile removal and installation given calculated distances to attenuation below disturbance (Level B harassment) thresholds, incidental take for each activity is estimated by the following equation:

Incidental take estimate = species density * ensonified area* days of pile-related activity

Due to few observational data available for marine mammals in Taiya Inlet and Lynn Canal in the winter, this equation is a reasonable extrapolation for take estimates, which relies on the likelihood that a species is present within the ensonified area on a day

where the activity is occurring. Some species were increased or reduced from the calculated take when it did not align with local sighting data. Steller sea lion take estimates are increased to one potential take per day and killer whale take estimates are increased based on sightings of groups of killer whales four to five times per year. Harbor seal take was reduced as the estimate was high for winter when the work will occur. The estimation of take by Level A harassment is based on the likelihood that marine mammals would enter the Level A harassment zone without detection.

Table 8 -- Authorized Amount of Taking and Percent of Stock

Species	Stock	Take by Level A harassment	Take by Level B harassment	Total Take	Percent of Stock
Humpback whale	Hawaii ³	2	13	15	<1
	Mexico-North Pacific ³	0	1	1	<1
Minke Whale	Alaska	2	6	8	NA ¹
Dall's Porpoise	Alaska	43	193	236 ²	1.8
Harbor Porpoise	Southeast Alaska	17	75	92 ²	5.7
Killer Whale	Eastern North Pacific, Northern Residents, Southeast Alaska + Eastern North Pacific, Alaska Residents + West Coast Transients + Gulf, Aleutian, Bering Transients	2	90	92	2.91
Harbor Seal	Alaska – Lynn Canal/Stephens Passage	193	2,760	2,953 ²	22.1
Steller Sea Lion	Eastern US + Western US	2	196	198 ²	<1

¹ Alaska SAR does not have an estimated population size for the Alaska stock of minke whales due only a portion of the stock's range being surveyed and such few whales seen during stock abundance surveys.

²Take was updated to reflect updated workdays and corrected ensonified areas

³Take was updated and allocated for the revised stock structure in the 2022 SARs

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.

NMFS requires the following mitigation measures be implemented for MOS's pile installation and removal activities.

Mitigation Measures

MOS must follow mitigation measures as specified below:

- Ensure that construction supervisors and crews, the monitoring team, and relevant MOS staff are trained prior to the start of all pile driving activity, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work;
- Employ PSOs and establish monitoring locations as described in the application and the IHA. MOS must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. For all pile driving and removal, at least one PSO must be used. The PSO will be stationed as close to the activity as possible;
- The placement of the PSOs during all pile driving and removal activities will ensure that the entire shutdown zone is visible during pile driving activities. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone will 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;
- Monitoring must take place from 30 minutes prior to initiation of pile driving activity (*i.e.*, pre-clearance monitoring) through 30 minutes post-completion of pile driving activity;
- Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated in Table 9 are clear of marine mammals. Pile driving may commence following 30

minutes of observation when the determination is made that the shutdown zones are clear of marine mammals;

- MOS must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer;
- If a marine mammal is observed entering or within the shutdown zones indicated in Table 9, pile driving must be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone (Table 9) or 15 minutes have passed without re-detection of the animal; and
- As planned by MOS, in water activities will take place only between civil dawn and civil dusk and for a limited duration after dusk with lighting when PSOs can effectively monitor for the presence of marine mammals; when the entire shutdown zone and adjacent waters are visible (*e.g.*, monitoring effectiveness in not reduced due to rain, fog, snow, *etc.*).

Shutdown Zones

MOS will establish shutdown zones for all pile driving activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones would be based upon the Level A harassment zone for each pile size/type and driving method where applicable, as shown in Table 9.

For in-water heavy machinery activities other than pile driving, if a marine mammal comes within 10 meters (m), work generating underwater noise will stop and vessels will reduce speed to the minimum level required to maintain steerage and safe working conditions. A 10 m shutdown zone would also serve to protect marine mammals from physical interactions with project vessels during pile driving and other construction activities, such as barge positioning or drilling. If an activity is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone indicated in Table 9 or 15 minutes have passed without re-detection of the animal. Construction activities must be halted upon observation of a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met entering or within the harassment zone.

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

MOS will also establish shutdown zones for all marine mammals for which take has not been authorized or for which incidental take has been authorized but the authorized number of takes has been met. These zones are equivalent to the Level B harassment zones for each activity. If a marine mammal species not covered under this IHA enters the shutdown zone, all in-water activities will cease until the animal leaves the zone or has not been observed for at least 15 minutes, and NMFS will be notified about species and precautions taken. Pile driving will proceed if the non-IHA species is observed to leave the Level B harassment zone or if 15 minutes have passed since the last observation.

If shutdown and/or clearance procedures would result in an imminent safety concern, as determined by MOS or its designated officials, the in-water activity will be allowed to continue until the safety concern has been addressed, and the animal will be continuously monitored.

The large HF shutdown zones will be effectively monitored from the Kasidaya land based monitoring station and vessel traversing the south end of the largest Level B harassment zone. See the figures in MOS application for further details.

Table 9 -- Shutdown Zones and Monitoring Zones

Activity	Minimum shutdown zone					Harassment Zone
	Low-Frequency (LF) Cetaceans	Mid-Frequency (MF) Cetaceans	High-Frequency (HF) Cetaceans	Phocid	Otariid	
36-in to 48-in steel pile**, Impact Installation	2,350	85	2,795	1,260	95	1,585
24-in steel pile, Impact Installation	1,250	45	1,485	670	50	860
Up to 30-in steel pile*, Vibratory Installation and Removal	15	10	20	10	10	3,985
36-in to 48-in steel pile**, Vibratory Installation	70	10	100	40	10	16,300 ¹
14-in timber pile, Vibratory Removal	15	10	25	10	10	3,415

*Includes pile sizes: 10.75-in, 14-in, 16-in, 20-in, 24-in, 28-in, and 30-in.

**Includes pile sizes: 36-in, 42-in, and 48-in.

¹Shoreline of Taiya Inlet obstructs sound transmission and limits the extent of the Level B harassment zone

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

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

Pre-Activity Monitoring

Prior to the start of daily in-water construction activity, or whenever a break in pile driving 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 zones listed in Table 9, pile driving activity will be delayed or halted. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.*, the entire shutdown zone and surrounding waters must be visible to the naked eye).

Soft Start Procedures

Soft start procedures provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a

30-second waiting period, then two subsequent reduced-energy strike sets. Soft start 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 30 minutes or longer.

Based on our evaluation of MOS's planned measures, as well as other measures considered by NMFS, NMFS has determined that the mitigation 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 while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

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

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

marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);

- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,
- Mitigation and monitoring effectiveness.

Visual Monitoring

Marine mammal monitoring must be conducted in accordance with the conditions in this section and the IHA. Marine mammal monitoring during pile driving activities will be conducted by PSOs meeting the following requirements:

- Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods;
- At least one PSO will 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; and
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator will be designated. The lead observer will be required to have prior experience working as a marine mammal observer during construction.

PSOs must 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.
- MOS must employ up to five PSOs during all pile driving activities depending on the size of the monitoring and shutdown zones. A minimum of two PSOs (including the lead PSO) must be assigned to the active pile driving location to monitor the shutdown zones and as much of the Level B harassment zones as possible.
- MOS must establish the following monitoring locations with the best views of monitoring zones as described in the IHA and Application.
- Up to five monitors will be used at a time depending on the size of the monitoring area. PSOs would be deployed in strategic locations around the area of potential effects at all times during in-water pile driving and removal. PSOs will be positioned at locations that provide full views of the vibratory and impact hammering monitoring zones and the shutdown zones. The land based monitoring

locations will be at the Railroad Dock, Yakutania Point, and Kasidaya. The larger monitoring zones will be monitored using PSOs in a mobile vessel traversing the south end of the monitoring zone in addition to the land based locations. All PSOs will have access to high-quality binoculars, range finders to monitor distances, and a compass to record bearing to animals as well as radios or cell phones for maintaining contact with work crews.

Monitoring will be conducted 30 minutes before, during, and 30 minutes after all in water construction activities. In addition, PSOs will record all incidents of marine mammal occurrence, regardless of distance from activity, and will 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.

MOS shall conduct briefings between construction supervisors and crews, PSOs, MOS staff prior to the start of all pile driving activities and when new personnel join the work. These briefings will explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

Acoustic Monitoring

Acoustic monitoring will be conducted during in-water pile installation and removal, for each of the three scenarios (impact installation of steel piles, vibratory installation and removal of steel piles, and vibratory removal of timber piles). Collection of the acoustic data will be accomplished using a minimum of two hydrophones. At least one land-based microphone will also be deployed to record airborne sound levels. For underwater acoustic monitoring, the hydrophones will be placed such that there is a direct line of acoustic transmission through the water column between the impact or vibratory hammer and the hydrophones, without any interposing structures (including other piles)

that could impede sound transfer, when possible. All acoustical recordings will be conducted at least 1 meter below the water surface and 1 meter above the sea floor, or as applicable to optimize sound recordings in the nearshore environment. Background noise recordings (in the absence of pile-related work) will also be made during the study to provide a baseline background noise profile.

All sensors, signal conditioning equipment, and sampling equipment will be calibrated at the start of the monitoring period to National Institute of Standards and Technology standards and will be rechecked at the start of each day.

A stationary two-channel hydrophone recording system will be deployed to record continuous sound associated with pile driving and removal activities during the monitoring period. Key methodological details are as follows:

- Prior to monitoring, water depth measurements will be made to ensure that hydrophones will not drag on the bottom during tidal changes. The hydrophones will be placed at least 1 meter below the surface and 1 meter above the seafloor. The depth with respect to the bottom may vary somewhat due to tidal changes and current effects.
 - One hydrophone will be deployed to maintain a constant distance of approximately 10 meters from the pile-related noise source, and the other would be at a further distance from the pile-related noise source.
 - The hydrophones, signal conditioning, and recording equipment will be configured to acquire maximum source levels without clipping recorded data.
- Post-analysis of underwater sound level signals would include the following:

- Impact Pile Driving:
 1. Determination of the maximum absolute value of the instantaneous pressure within each strike.

2. RMS value for the period of which 90 percent of the energy is represented (RMS_{90} (here forward referred to as SPL_{RMS}), 5 percent to 95 percent) for each absolute peak pile strike.
 3. Mean and standard deviation/error of the SPL_{RMS} percent for all pile strikes of each pile.
 4. Rise time.
 5. Number of strikes per pile and per day.
 6. Sound exposure level (SEL) of the single pile strike with the absolute peak (PK), mean SEL.
 7. Minimum, maximum, mean, and median cumulative SEL (cumulative SEL = single strike SEL + $10 \cdot \text{LOG}_{10}(\text{number of pile strikes})$)).
 8. Frequency spectrum, between 20 hertz (Hz) and 20 kilohertz (kHz), for up to eight successive strikes with similar sound level.
- Vibratory Pile Driving and Removal:
 1. RMS values (median, standard deviation/error, minimum, and maximum) for each recorded pile. The 10-second, RMS-averaged values will be used for determining the source value and extent of the 120 dB underwater isopleth.
 2. Frequency spectra will be provided for each functional hearing group as outlined in NOAA's 2018 guidance (NOAA, 2018).
 - All underwater source levels will be recorded as measured and could additionally be standardized to a reference distance of 10 meters (33 feet).
 - Post-analysis of airborne noise will be presented in an unweighted format, and will include the following:

1. The unweighted RMS values (average, minimum, and maximum) for each recorded pile. The average values will be used for determining the extent of the airborne isopleths relative to species specific criteria.
 2. Frequency spectra will be provided from 10 Hz to 20 kHz for representative pile-related activity.
 3. All airborne source levels will be standardized to a reference distance of approximately 15 meters (50 feet).
- Acoustic monitoring will be performed using a standardized method that will facilitate comparisons with other studies. In the event that pile-related noise trends toward consistently surpassing calculated levels, NMFS will be contacted immediately to revise Shutdown Zones as needed.

Reporting

A draft marine mammal monitoring report will 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 from any future IHAs for projects at the same location, whichever comes first. The report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO 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 the number and type of piles driven or removed and by what method (*i.e.*, impact or vibratory) and the total equipment duration for vibratory removal for each pile or total number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea

state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;

- Upon observation of a marine mammal, the following information:
- Name of PSO who sighted the animal(s) and PSO location and activity at the time of sighting;
- Time of sighting;
- Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentifiable), PSO confidence in identification, and the composition of the group if there is a mix of species;
- Distance and bearing of each marine mammal observed relative to the pile being driven for each sightings (if pile driving was occurring at time of sighting);
- Estimated number of animals (min/max/best estimate);
- Estimated number of animals by cohort (adults, juveniles, neonates, group composition, sex class, *etc.*);
- Animal's closest point of approach and estimated time spent within the harassment zone;
- Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Number of marine mammals detected within the harassment zones and shutdown zones; by species;
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any; and

- If visibility degrades to where PSO(s) cannot view the entire harassment zones, additional PSOs may be positioned so that the entire width is visible, or work will be halted until the entire width is visible to ensure that any humpback whales entering or within the harassment zone are detected by PSOs.

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.

Acoustic Monitoring Report

The Acoustic Monitoring Report must include:

- Type and size of pile being driven, substrate type, method of driving during recordings (*e.g.*, hammer model, energy), and total pile driving duration;
- Whether a sound attenuation device is used and, if so, a detailed description of the device and the duration of its use per pile;
- A description of the sound monitoring equipment, including a detailed description of the depths and locations of the hydrophones relative to the pile being driven;
- For impact pile driving: Number of strikes and strike rate, depth of substrate to penetrate; pulse duration and mean, median, and maximum sound levels (dB re: 1 μ Pa); root mean square sound pressure level (SPL_{RMS}), cumulative sound exposure level (SEL_{cum}), peak sound pressure level (SPL_{peak}), and single strike exposure sound level (SEL_{s-s});
- For vibratory driving/removal (per pile): Duration of driving per pile; mean, median, and maximum sound levels (dB re: 1 μ Pa); Root mean square sound pressure level (SPL_{RMS}), cumulative sound exposure level (SEL_{cum}) (and timeframe over which the sound is averaged);

- One-third octave band spectrum and power spectral density plot for each pile monitored and average spectrum for each type of driving (*i.e.* impact, vibratory of steel, vibratory of timber); and,
- Environmental data, including but not limited to, the following: wind speed and direction, air temperature, humidity, surface water temperature, water depth (at the pile and hydrophone locations), characteristics of the bottom substrate into which the pile was driven, wave height, weather conditions, and other factors that could contribute to influencing the airborne and underwater sound levels (*e.g.*, aircraft, boats, *etc.*).
- Sound measurement data shall be provided to NMFS in tabular spreadsheet format (Microsoft Excel or similar).

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the MOS must immediately cease the specified activities and report the incident to the Office of Protected Resources (OPR) (PR.ITP.MonitoringReports@noaa.gov), NMFS and to the Alaska Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, MOS 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 MOS 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 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, our analysis applies to all species listed in Table 2 for which take could occur, given that NMFS expects the anticipated effects of the pile driving/removal on different marine mammal stocks to be similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated

individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, NMFS has identified species-specific factors to inform the analysis.

Pile driving activities associated with the project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment and Level A harassment from underwater sounds generated by pile driving. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

No serious injury or mortality would be expected, even in the absence of required mitigation measures, given the nature of the activities. Further, limited take by Level A harassment is anticipated for humpback whales, minke whales, killer whales, harbor porpoise, and Steller sea lion due to the application of planned mitigation measures, such as shutdown zones that encompass the Level A harassment zones for these species and the rarity of these species near the action area. The potential for harassment would be minimized through the construction method and the implementation of the planned mitigation measures (see **Mitigation** section).

Take by Level A harassment is authorized for all species, as there is potential for these species to be in the area. There is the possibility that an animal could enter a Level A harassment zone without being detected, and remain within that zone for a duration long enough to incur PTS. However, Level A harassment of these species is authorized to be conservative. Any take by Level A harassment is expected to arise from, at most, a small degree of PTS (*i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by impact pile driving such as the low-frequency region below 2 kHz), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to

higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of PTS.

Further, the amount of take authorized by Level A harassment is low for both marine mammal stocks and species except harbor seals as they are common in the area. If hearing impairment occurs, it is most likely that the affected animal would lose only a few decibels in its hearing sensitivity. Due to the small degree anticipated, any PTS potential incurred would not be expected to affect the reproductive success or survival of any individuals, much less result in adverse impacts on the species or stock.

Additionally, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. However, since the hearing sensitivity of individuals that incur TTS is expected to recover completely within minutes to hours, it is unlikely that the brief hearing impairment would affect the individual's long-term ability to forage and communicate with conspecifics, and would therefore not likely impact reproduction or survival of any individual marine mammal, let alone adversely affect rates of recruitment or survival of the species or stock.

The Level A harassment zones identified in Table 6 are based upon an animal's exposure to pile driving of up to 5 steel piles or 18 timber piles removed per day. Given the short duration to impact drive or vibratory install or extract each pile and breaks between pile installations (to reset equipment and move piles into place), an animal would have to remain within the area estimated to be ensonified above the Level A harassment threshold for multiple hours. This is highly unlikely given marine mammal movement in the area. If an animal was exposed to accumulated sound energy, the resulting PTS would likely be small (*e.g.*, PTS onset) at lower frequencies where pile driving energy is concentrated, and unlikely to result in impacts to individual fitness, reproduction, or survival.

The nature of the pile driving project precludes the likelihood of serious injury or mortality. For all species and stocks, take would occur within a limited, confined area (adjacent to the project site) of the stock's range. Level A and Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein. Further, the amount of take authorized is small when compared to stock abundance.

Behavioral responses of marine mammals to pile driving and removal in Taiya Inlet are expected to be mild, short term, and temporary. Marine mammals within the Level B harassment zones may not show any visual cues they are disturbed by activities or they could become alert, avoid the area, leave the area, or display other mild responses that are not observable, such as changes in vocalization patterns. Given that pile driving and removal would occur for only a portion of the project's duration, any harassment occurring would be temporary. Additionally, many of the species present in region would only be present temporarily based on seasonal patterns or during transit between other habitats. These temporarily present species would be exposed to even smaller periods of noise-generating activity, further decreasing the impacts.

For all species, there are no known Biologically Important Areas (BIAs) near the project area that would be impacted by MOS's planned activities. While there is a Steller sea lion haulout at the end of Taiya inlet at Taiya point, this is approximately 13,300-m from the project site. Additionally, there is a rookery at Gran Point, which is within designated Steller sea lion critical habitat, though this is outside the project area around 24 miles (38.6 km) from Skagway. Lastly, there is a summer feeding ground for humpback whales in Lynn Canal, however this is outside of Taiya Inlet, and approximately 50 miles (80.5 km) from Skagway.

In addition, it is unlikely that minor noise effects in a small, localized area of habitat would have any effect on each stock's 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.

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 serious injury or mortality is anticipated or authorized;
- Authorized Level A harassment would be very small amounts and of low degree;
- For all species, Taiya Inlet is a very small and peripheral part of their range;
- The intensity of anticipated takes by Level B harassment is relatively low for all stocks. Level B harassment would be primarily in the form of behavioral disturbance, resulting in avoidance of the project areas around where impact or vibratory pile driving is occurring, with some low-level TTS that may limit the detection of acoustic cues for relatively brief amounts of time in relatively confined footprints of the activities;
- Effects on species that serve as prey for marine mammals from the activities are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations;
- The ensonified areas are very small relative to the overall habitat ranges of all species and stocks, and would not adversely affect ESA-designated critical habitat for any species or any areas of known biological importance;

- The lack of anticipated significant or long-term negative effects to marine mammal habitat; and
- MOS would implement mitigation measures including soft starts and shutdown zones to minimize the numbers of marine mammals exposed to injurious levels of sound, and to ensure that take by Level A harassment is, at most, a small degree of PTS.

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 activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

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

The amount of take NMFS is authorizing is below one-third of the estimated stock abundance for all species. This is likely a conservative estimate because we assume all takes are of different individual animals, which is likely not the case. Some

individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified.

The most recent estimate for the Alaska stock of Dall's porpoise was 13,110 animals, however this number just accounts for a portion of the stock's range. Therefore, the 183 takes of this stock authorized is believed to be an even smaller portion of the overall stock abundance.

Likewise, there is no current or historical estimate of the Alaska minke whale stock, but minke whale abundance has been estimated to be over 1,000 whales in portions of Alaska (Muto *et al.*, 2022) so the 8 takes proposed for authorization represent small numbers of this stock. Additionally, the range of the Alaska stock of minke whales is extensive, stretching from the Canadian Pacific coast to the Chukchi Sea, and DOT&PF's project area impacts a small portion of this range. Therefore, the eight takes of minke whale proposed for authorization is small relative to estimated survey abundance, even if each proposed take occurred to a new individual.

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.

In the Skagway area, sea lions and harbor seals are available for subsistence harvest authorized under the MMPA. The subsistence areas used by the Hoonah and Angoon communities are in the vicinity of the project area, but will not directly overlap with the project areas. During subsistence harvest in Southeast Alaska in 2012, the most recent year of available data from the Alaska Department of Fish and Game, 595 harbor seals were taken, while only 9 sea lions were taken in the region (Wolfe *et al.*, 2013). The project at worst may cause short-term disturbance to sea lions and harbor seals in the area.

The activity will take place in Taiya Inlet, and no activities overlap with subsistence hunting areas; therefore, there are no relevant subsistence uses of marine mammals adversely impacted by this action. The planned project is not likely to adversely impact the availability of any marine mammal species or stocks that are commonly used for subsistence purposes or to impact subsistence harvest of marine mammals in the region because:

- Construction activities are localized and temporary;
- Mitigation measures will be implemented to minimize disturbance of marine mammals in the action area; and,
- The project will not result in significant changes to availability of subsistence resources.

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 mitigation and monitoring measures, NMFS has determined that there will not be an unmitigable adverse impact on subsistence uses from MOS's 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 plan to authorize take for endangered or threatened species, in this case with the Alaska Regional Office.

NMFS is authorizing take of the Mexico-North Pacific stock of humpback whale and the Western US stock of Steller sea lion, which are listed or include individuals that are listed under the ESA.

The Permit and Conservation Division completed a Section 7 consultation with the Alaska Regional Office for the issuance of this IHA on August 23, 2023. The Alaska Regional Office's biological opinion states that the action is not likely to jeopardize the continued existence of the listed species.

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 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 MOS for the potential harassment of small numbers of 7 marine mammal species incidental to the terminal redevelopment project in Skagway, Alaska that includes the previously explained mitigation, monitoring, and reporting requirements. The final IHA can be found at: <https://www.fisheries.noaa.gov/action/incidental-take-authorization-municipality-skagways-skagway-ore-terminal-redevelopment>.

Dated: August 29, 2023.

Catherine Marzin,

Acting Director, Office of Protected Resources,

National Marine Fisheries Service.

[FR Doc. 2023-19029 Filed: 9/1/2023 8:45 am; Publication Date: 9/5/2023]