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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XG628

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Railroad Dock Dolphin Installation Project, 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 White Pass & Yukon Route (WP&YR) to incidentally take, by Level A and Level B harassment, seven species of marine mammals during the Railroad Dock dolphin installation project in Skagway, Alaska.

DATES: This IHA is valid from February 15, 2019 through February 14, 2020.

FOR FURTHER INFORMATION CONTACT: Wendy Piniak, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the authorization, 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/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

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

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other means of effecting the least practicable adverse impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such 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 such takings are set forth.

The NDAA (Pub. L. 108–136) removed the "small numbers" and "specified geographical region" limitations indicated above and amended the definition of "harassment" as it applies to a "military readiness activity." The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On August 21, 2018, NMFS received a request from WP&YR for an IHA to take marine mammals incidental to the Railroad Dock dolphin installation project in Skagway, Alaska.

WP&YR submitted a revised version of the application on November 9, 2018, which was deemed adequate and complete on November 15, 2018. WP&YR's request is for take of seven species of marine mammals by Level B harassment and Level A harassment incidental to impact pile driving, vibratory pile driving and removal, and down-the-hole drilling activities. Neither WP&YR nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate. In-water activities (pile installation and extraction) associated with the project are scheduled to begin in February, 2019, and be completed April 30, 2019.

Description of Activity

WP&YR requested the authorization of take of small numbers of marine mammals incidental to pile driving/removal and down-the-hole drilling associated with the installation of two new 200-ton pile supported mooring dolphins in Skagway Harbor, Alaska. The new mooring dolphins will provide ample safe moorage when both Norwegian Breakaway and Royal Caribbean Quantum class cruise ship vessels are in port. The existing dolphin infrastructure does not allow for both cruise ships to be moored at the dock at the same time. The additional dolphins will allow for both ships to be docked simultaneously. To facilitate dual mooring, the project includes the installation of two 200-ton dolphins, each comprised of six 42-inch steel permanent piles 300 feet in length. WP&YR will also install and subsequently remove 14 36-inch template (temporary) piles (200 feet in length) at the two dolphin locations which are approximately 100 feet and 200 feet, respectively, south of the existing southernmost mooring dolphin at the WP&YR Railroad Dock. The template and permanent piles are comprised of two to three 100-feet long segments which will be spliced (*i.e.*, welded) together as they are installed. All temporary and permanent piles will require a combination of three pile installation methods: vibratory driving, impact driving, and down-the-hole drilling. Sounds produced by these

activities may result in take, by Level A and Level B harassment, of marine mammals located in Taiya Inlet, Alaska.

In-water activities (pile installation and extraction) associated with the project are scheduled to begin in February, 2019, and be completed April 30, 2019. Pile installation and removal will occur over the course of the three months. WP&YR anticipates up to 10 hours of activity (vibratory driving, impact driving, and down-the-hole drilling) during daylight hours will occur per day.

A detailed description of the planned activities is provided in the **Federal Register** notice announcing the proposed IHA (83 FR 64541; December 17, 2018). Since that time no changes have been made to WP&YR's planned activities. Therefore, a detailed description is not provided here. Please refer to the proposed IHA **Federal Register** notice for a detailed description of the activity.

Comments and Responses

A notice of NMFS' proposal to issue an IHA to WP&YR was published in the **Federal Register** on December 17, 2018 (83 FR 64541). That notice described, in detail, WP&YR's activity, the marine mammal species that may be affected by the activity, the anticipated effects on marine mammals and their habitat, proposed amount and manner of take, and proposed mitigation, monitoring and reporting measures. On January 31, 2019, NMFS received a comment letter from the Marine Mammal Commission (Commission); the Commission's recommendations and our responses are provided here, and the comments have been posted online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*. The Commission

recommended that NMFS issue the IHA, subject to inclusion of the proposed mitigation, monitoring, and reporting measures.

Comment 1: The Commission expressed concern that the renewal process proposed in the **Federal Register** notice is inconsistent with the statutory requirements. The Commission recommended that NMFS refrain from implementing its proposed renewal process and instead use abbreviated **Federal Register** notices and reference existing documents to streamline the incidental harassment authorization process. The Commission further recommended that if NMFS did not pursue a more general route, NMFS should provide the Commission and the public with a legal analysis supporting its conclusion that the process is consistent with the requirements under section 101(a)(5)(D) of the MMPA.

Response 1: The notice of the proposed IHA expressly notifies the public that under certain, limited conditions an applicant could seek a renewal IHA for an additional year. The notice describes the conditions under which such a renewal request could be considered and expressly seeks public comment in the event such a renewal is sought. Additional reference to this solicitation of public comment has recently been added at the beginning of **Federal Register** notices that consider renewals. NMFS appreciates the streamlining achieved by the use of abbreviated **Federal Register** notices and intends to continue using them for proposed IHAs that include minor changes from previously issued IHAs, but which do not satisfy the renewal requirements. However, we believe our proposed method for issuing renewals meets statutory requirements and maximizes efficiency. Importantly, such renewals would be limited to where the activities are identical or nearly identical to those analyzed in the proposed IHA, monitoring does not indicate impacts that were not previously analyzed and authorized, and the mitigation and monitoring requirements remain the same, all of which allow the public to comment on the

appropriateness and effects of a renewal at the same time the public provides comments on the initial IHA. NMFS has, however, modified the language for future proposed IHAs to clarify that all IHAs, including renewal IHAs, are valid for no more than one year and that the agency would consider only one renewal for a project at this time. In addition, notice of issuance or denial of a renewal IHA would be published in the **Federal Register**, as are all IHAs. Last, NMFS will publish on our website a description of the renewal process before any renewal is issued utilizing the new process.

Description of Marine Mammals in the Area of Specified Activities

A detailed description of the species likely to be affected by WP&YR's 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 (83 FR 64541; December 17, 2018). 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 the proposed IHA **Federal Register** notice for these descriptions; we provide a summary of marine mammals that may potentially be present in the project area here (Table 1). Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SAR; *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 1 lists all species with expected potential for occurrence in the Taiya Inlet and larger Lynn Canal and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where

known. For taxonomy, we follow Committee on Taxonomy (2018). 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 mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' 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 SARs (*e.g.*, Muto *et al.* 2018). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2017 SARs (Muto *et al.* 2018) and draft 2018 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

Table 1. Marine mammals potentially present during the specified activity.

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	*Eschrichtius robustus*	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	138
Family Balaenidae						
Humpback whale	*Megaptera novaeangliae*	Central North Pacific	-, -, Y	10,103 (0.3, 7,890, 2006)	83	25
Minke Whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N/A	UND	0

Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Physeteridae						
Family Delphinidae						
Killer whale	*Orcinus orca*	Alaska Resident	-, -, N	2,347 (N/A, 2,347, 2012)[4]	24	1
		Northern Resident	-, -, N	261 (N/A, 261, 2011)[4]	1.96	0
		Gulf of Alaska, Aleutian Islands, Bering Sea Transient	-, -, N	587 (N/A, 587, 2012)[4]	5.87	1
		West Coast Transient	-, -, N	243 (N/A, 243, 2009)[4]	2.4	0
Family Phocoenidae (porpoises)						
Harbor porpoise	*Phocoena phocoena*	Southeast Alaska	-, -, Y	975 (0.12-0.14, 897, 2012)[5]	8.9	34
Dall's porpoise	*Phocoenoides dalli*	Alaska	-, -, N	83,400 (0.097, N/A, 1991)	UND	38
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
Steller sea lion	*Eumetopias jubatus*	Western U.S.	E, D, Y	54,267 (N/A, 54,267, 2017)	326	252
		Eastern U.S.	T, D, Y	41,638 (N/A, 41,638, 2015)	2498	108
Family Phocidae (earless seals)						
Harbor seal	*Phoca vitulina richardii*	Lynn Canal/ Stephens Passage	-, -, N	9,478 (N/A, 8,605, 2011)	155	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-assessments*. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable (N/A).

[3]These values, found in NMFS' 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] N is based on counts of individual animals identified from photo-identification catalogs.

[5] In the SAR for harbor porpoise, NMFS identified population estimates and PBR for porpoises within inland southeast Alaska waters (these abundance estimates have not been corrected for g(0); therefore, they are likely conservative).

Habitat

No Biologically Important Areas (BIAs) or ESA-designated critical habitat overlap with the project area, however there is seasonally important foraging habitat for some species of marine mammal which overlap spatially and temporally with planned project activities. The annual eulachon run (which occurs for approximately three to four weeks during April through May) in Lynn Canal is important to all marine mammals (particularly Steller sea lions, and harbor seals, and humpback whales) for seasonal foraging and many species travel into Taiya Inlet to forage on this prey.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

Underwater noise from impact and vibratory pile driving and down-the-hole drilling activities associated with the planned Railroad Dock dolphin installation project have the potential to result in harassment of marine mammals in the vicinity of the action area. The **Federal Register** notice for the proposed IHA (83 FR 64541; December 17, 2018) included a discussion of the potential effects of such disturbances on marine mammals and their habitat, therefore that information is not repeated in detail here; please refer to the **Federal Register** notice (83 FR 64541; December 17, 2018) for that information.

Estimated Take

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 determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to

disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes will primarily be by Level B harassment, as use of the impact and vibratory hammers and down-the-hole drilling has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for low-frequency cetaceans, high-frequency cetaceans, and/or phocids because predicted auditory injury zones are larger than for mid-frequency cetaceans and otariids. Auditory injury is unlikely to occur for mid-frequency cetaceans and otariids. The planned mitigation and monitoring measures are expected to minimize the severity of such taking to the extent practicable. As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

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

Acoustic Thresholds

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

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

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (NMFS 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). WP&YR's planned activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving/removal and drilling) sources.

These thresholds are provided in Table 2. 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 2. Thresholds identifying the onset of permanent threshold shift (PTS).

	PTS Onset Thresholds* **(Received Level)**	
Hearing Group	**Impulsive**	**Non-impulsive**
Low-Frequency (LF) Cetaceans	$L_{p,0\text{-pk,flat}}$: 219 dB $L_{E,p,\text{LF,24h}}$: 183 dB	$L_{E,p,\text{LF,24h}}$: 199 dB
Mid-Frequency (MF) Cetaceans	$L_{p,0\text{-pk,flat}}$: 230 dB $L_{E,p,\text{MF,24h}}$: 185 dB	$L_{E,p,\text{MF,24h}}$: 198 dB
High-Frequency (HF) Cetaceans	$L_{p,0\text{-pk,flat}}$: 202 dB $L_{E,p,\text{HF,24h}}$: 155 dB	$L_{E,p,\text{HF,24h}}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	$L_{p,0\text{-pk.flat}}$: 218 dB $L_{E,p,\text{PW,24h}}$: 185 dB	$L_{E,p,\text{PW,24h}}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	$L_{p,0\text{-pk,flat}}$: 232 dB $L_{E,p,\text{OW,24h}}$: 203 dB	$L_{E,p,\text{OW,24h}}$: 219 dB

* Dual metric 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 are recommended for consideration.

Note: Peak sound pressure level ($L_{p,0\text{-pk}}$) has a reference value of 1 µPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1µPa^{2}s. In this table, thresholds are abbreviated to be more reflective of International Organization for Standardization standards (ISO 2017). The subscript "flat" is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals (i.e., 7 Hz to 160 kHz). 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 weighted 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 thresholds will be exceeded.

Ensonified Area

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

The sound field in the project area is the existing background noise plus additional construction noise from the planned project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.*, impact pile driving, vibratory pile driving and removal and down-the-hole drilling). The maximum (underwater) ensonification area of 17.9 km^2 due to project activities is governed by the topography of Taiya Inlet (see Figure 6 in the application). The eastern shoreline of the inlet is acoustically shadowed due to land located just south of the project site. Similarly, Yakutania Point and Dyea Point will inhibit transmission of project sounds from reaching Nahku Bay and the upper inlet at the mouth of the Taiya River. Additionally, vessel traffic and other commercial and industrial activities in the project (and ensonified) area may contribute to elevated background noise levels which may mask sounds produced by the project.

In order to calculate distances to the Level A and Level B harassment thresholds for piles of various sizes being used in this project, NMFS used acoustic monitoring data from other pile driving projects in Alaska. Empirical data from recent sound source verification (SSV) studies in Anchorage and Kodiak, Alaska were used to estimate sound source levels (SSLs) for impact pile driving, vibratory pile driving/removal, and down-the-hole drilling installations of the 42-inch steel pipe permanent piles and the 36-inch steel pipe template piles (Austin *et al.* 2016; Denes *et al.* 2016). These Alaskan construction sites were generally assumed to best represent the environmental conditions found in Skagway and represent the nearest available source level data for 42-inch steel piles. Note that piles of differing sizes have different sound source levels.

Table 3 provides the sound source values used in calculating harassment isopleths for each source type. No data are currently available for 42-inch steel pipe piles. For impact and vibratory hammer source levels WP&YR used the median levels (sound exposure level single-

strike (SEL_{S-S}) for impact and SPL rms for vibratory) measured 11 m from the pile by Austin *et al.* (2016) during installation of 48-inch piles at Port of Anchorage (see Table 3). These 48-inch pile impact and vibratory levels are conservatively used for both the 42-inch permanent piles and the 36-inch template piles. Few SSV and SSL data are available for down-the-hole drilling. WP&YR used the 90th percentile source levels measured 10 m from the pile by Denes *et al.* (2016) during drilling down the center of 30-inch piles in Kodiak (see Table 3)).

Table 3. Source levels and anticipated daily durations for underwater sound calculations. Hours or strikes per day represents the maximum duration of any single activity.

Source		Source Type	SPL_{PK} (dB)	SPL_{RMS} (dB)	SEL_{S-S} (dB)	Hours or Strikes per Day
Template Piles	Vibratory Installation/ Removal	Non-impulsive, continuous	n/a	166.8	n/a	3 hours
	Impact Installation	Impulsive, intermittent	212.5	197.9	186.7	2,000 strikes
	Drilling Installation	Non-impulsive, continuous	n/a	171.0	n/a	6 hours
Permanent Piles	Vibratory Installation	Non-impulsive, continuous	n/a	166.8	n/a	8 hours
	Impact Installation	Impulsive, intermittent	212.5	197.9	186.7	2,000 strikes
	Drilling Installation	Non-impulsive, continuous	n/a	171.0	n/a	8 hours

* Impact and vibratory measurements were collected 11m from the source. Drilling measurements were collected 10m from the source.

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

A practical spreading value of fifteen is often used under conditions, such as at the WP&YR Railroad Dock, where water increases with depth as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Practical spreading loss is assumed here.

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources such as pile driving and drilling, NMFS User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance (or greater) the whole duration of the activity, it would not incur PTS. Inputs used in the User Spreadsheet and the resulting isopleths are reported in Tables 4 and 5. As WP&YR will employ two continuous sound sources (vibratory pile driving and drilling) it is necessary to account for accumulation of sound caused by both activities during the full 10-hour work day when

calculating Level A harassment isopleths. As drilling has the higher sound pressure level, the 171 dB re 1 µPa (rms) sound level was used to calculate the Level A harassment isopleths for both drilling and vibratory pile driving activities (Table 4). Therefore, the resulting Level A isopleth distance is precautionary as WP&YR does not intend to drill for 10 hours per day; some hours will be allocated to vibratory pile driving which has a lower source level. For impact pile driving, isopleths calculated using the SEL_{S-S} metric were used as it produces larger isopleths than the sound pressure level peak (SPL_{PK}) and takes into account the duration of each strike. Isopleths for Level B harassment associated with impact pile driving (160 dB) and vibratory pile driving/removal and drilling (120 dB) can be found in Table 5.

Table 4. User spreadsheet input parameters used for calculating harassment isopleths.

Parameter	Impact Pile Driving	Vibratory Pile Driving and Drilling
Spreadsheet Tab Used	E.1) Impact pile driving	A. 1) Drilling/ Vibratory pile driving
Source Level	186.7 dB SEL_{S-S}	171 dB SPL rms
Weighting Factor Adjustment (kHz)	2	2
Number of strikes per day	2,000	N/A
Activity Duration (h) within 24-hourperiod	N/A	10 hours
Propagation (xLogR)	15LogR	15LogR
Distance of source level measurement (meters)	11	10

Table 5. Calculated distances to Level A harassment and Level B harassment isopleths during pile installation and removal and drilling.

Source	Level A Harassment Zone (meters)					Level B Harassment Zone (meters)
	Low-frequency cetacean	Mid-frequency cetacean	High-frequency cetacean	Phocid pinniped	Otariid pinniped	Cetaceans & Pinnipeds
Drilling and Vibratory Installation	148	8.3	129.7	79.2	5.8	13,000[1]

Source	Level A Harassment Zone (meters)					Level B Harassment Zone (meters)
	Low-frequency cetacean	Mid-frequency cetacean	High-frequency cetacean	Phocid pinniped	Otariid pinniped	Cetaceans & Pinnipeds
Impact Installation	3,077.2	109.4	3,665.4	1,646.8	119.9	3,698.8
Source	PTS Onset Isopleth – Peak (meters)					
Impact Installation	4.1	n/a	55.1	4.7	n/a	

[1] Based on maximum distance before landfall. Calculated distance was 25.1 km.

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations, and how this information is brought together to produce a quantitative take estimate.

Density information is not available for marine mammals in the project area in Taiya Inlet. Potential exposures to impact and vibratory pile driving and down-the-hole drilling noise for each threshold for all marine mammals were estimated using published reports of group sizes and population estimates, and anecdotal observational reports from local commercial entities. For several species, it is not currently possible to identify all observed individuals to stock.

Level B harassment calculations

Unless otherwise noted, the estimation of takes by Level B harassment uses the following calculation: Level B harassment estimate = N (number of animals in the ensonified area) * Number of days of noise generating activities.

Humpback Whale

Humpback whales are the most commonly observed baleen whale in Southeast Alaska, particularly during spring and summer months. Humpback whales in Alaska, although not

limited to these areas, return to specific feeding locations such as Frederick Sound, Chatham Strait, North Pass, Sitka Sound, Glacier Bay, Point Adolphus, and Prince William Sound, as well as other similar coastal areas (Wing and Krieger 1983). In Lynn Canal they have been observed in the spring and fall from Haines to Juneau, however scientific surveys have not documented the species within Taiya Inlet (Dahlheim *et al*. 2009).

Local observations indicate that humpback whales are not common in the project action area but, if they are sighted, are generally present during mid to late spring and vacate the area by July to follow large aggregations of forage fish in lower Lynn Canal. Local observers have reported humpback whales in Taiya Inlet, sometimes fairly close to the Skagway waterfront. Due to seasonal migration patterns, the low frequency of humpbacks in the area, and that no humpback whales have been reported during winter months it is anticipated that no humpback whales will be present in the project area in February; therefore, we predict no exposure to noise generated from the project in February. As it is unclear whether humpback whales occur in the inlet in March (for example, should the eulachon run begin very early), it is conservatively estimated that one whale might be found in the inlet during February for five days resulting in five exposures. On average, four to five individuals may occur near Skagway during the spring eulachon run in April and May, after which, only a few individuals are observed throughout the summer. In 2015, only one whale was observed (for several) weeks close to Skagway (K. Gross, personal communication reported in MOS 2016). Based on humpback whale occurrence in the project area and local observations, it is conservatively estimated that four individuals may be present in the action area each day during April, coinciding with 30 days of project activity (120 exposures). In total, NMFS authorized 125 exposures to humpback whales for the planned activity.

Minke Whale

Minke whales are rarely observed in the project area, and scientific surveys have not documented the species within Taiya Inlet (Dahlheim *et al.* 2009). A single minke whale was observed in the inlet in 2015 (K. Gross, Never Monday Charters, personal communication; R. Ford, Taiya Inlet Watershed Council, both personal communications reported in MOS 2016), and is the only known record of a minke whale in Taiya Inlet. However one minke whale was reported by local observers in the action area in 2015. Based on the available information it is very unlikely minke whales will be present in the inlet, however, minke whale presence is possible based on a single sighting and presence of potential prey (eulachon) in the spring. Thus, we estimate a total of two potential exposures of minke whales.

Killer Whale

Although killer whale stocks' ranges include southeast Alaska, they have only been documented as far north as Lynn Canal; therefore, while possible, occurrence north of Lynn Canal into Taiya Inlet is rare. According to local observations, pods of resident killer whales are occasionally seen in Taiya Inlet. Local observations indicate killer whales are observed four or five times a year (between spring and fall) usually in a group of 15 to 20 whales. In 2015 a resident pod was only observed in Taiya Inlet twice, remaining for one to four days per visit (K. Gross, personal communication reported in MOS 2016). There is no evidence of transient whales occurring within Taiya Inlet. While the resident pods remain in Alaska year-round there are no reports of sightings during winter months (January-February) in Taiya Inlet so it is assumed no killer whales will be present in the project area in February. Based on local observations in the project area in the spring, it is assumed that a group of 20 whales may enter the project area once in each of March and April and remain within the inlet for 2.5 days each time, for a total of 100

potential exposures. This is an increase from the proposed IHA to account for the average duration of pod visits according to local observations.

Harbor Porpoise

Harbor porpoises are primarily found in coastal waters, and in the Gulf of Alaska and Southeast Alaska, they occur most frequently in waters less than 100 meters (Dahlheim *et al.* 2009). Dedicated research studies of harbor porpoise in the project area only occur as far north in Lynn Canal as Haines during the summer (Dahlheim *et al.* 2009; 2015), approximately 16 miles south of Skagway. Group sizes were, on average, between 1.37-1.59 animals (less than 2) (Dahlheim *et al.* 2009; 2015). In Lynn Canal, observations were less frequent, primarily in lower Lynn Canal from Chatham Strait to Juneau, though harbor porpoises have been observed as far north as Haines during the summer (Dahlheim *et al.* 2009; 2015).

Despite lack of observations during dedicated surveys, local charter captains indicate that harbor porpoises commonly occur in small groups of two or three in Taiya Inlet, although they are not encountered on a daily basis and are rarely seen in areas close to the waterfront (K. Gross, personal communication reported in MOS 2016). Therefore, it is conservatively estimated that one group of three individuals may be present in the inlet 75 percent of the days during each month for a total of 201 potential exposures.

Dall's Porpoise

Dall's porpoises are widely distributed across the entire North Pacific Ocean. Throughout most of the eastern North Pacific they are present during all months of the year, although there may be seasonal onshore-offshore movements along the west coast of the continental United States and winter movements of populations out of Prince William Sound and areas in the Gulf of Alaska and Bering Sea (Muto *et al.* 2018). Dahlheim *et al.* (2009) observed Dall's porpoise

throughout Southeast Alaska, with concentrations of animals consistently found in Lynn Canal, Stephens Passage, Icy Strait, upper Chatham Strait, Frederick Sound, and Clarence Strait. Dahlheim *et al.* (2009), documented Dall's porpoise in Lynn Canal as far north as Haines, Alaska, about 15 miles south of Skagway.

Local observation indicate that three to six Dall's porpoises may be present in Taiya Inlet during the early spring and late fall. Observations have been occasional to sporadic and do not occur on a daily basis. The species has not been observed during winter months and has not been observed near the waterfront (K. Gross, personal communication reported in MOS 2016). The mean group size of Dall's porpoise in Southeast Alaska is estimated to be 3.7 individuals (Dahlheim *et al.* 2009). Therefore, it is estimated that a group of four Dall's porpoises will be present in the project area every other day in March and April, for a total of 122 potential exposures.

Steller Sea Lion

Several long-term Steller sea lion haulouts are located in Lynn Canal, however none occur in Taiya Inlet. The nearest long-term Steller sea lion haulout is located at Gran Point, south of Haines and 24 mi (38 km) south of the project area. Other year-round haulouts in Lynn Canal are present at Met Point, Benjamin Island, and Little Island, closer to Juneau (Fritz *et al.* 2015). Observations from local charter boat captains and watershed stewards indicate Steller sea lions can be abundant in the action area, particularly in April and May during the eulachon run, but are rarely observed in the project area during the winter (K. Gross, Never Monday Charters, personal communication; R. Ford, Taiya Inlet Watershed Council, personal communication reported in MOS 2016). This is consistent with the National Marine Mammal Laboratory database (Fritz *et al.* 2015), which has identified the largest number of Lynn Canal sea lions during the fall and

winter months at Benjamin Island in the lower reaches of the canal. During surveys conducted in 2002 and 2003, Womble *et al.* (2005) observed a maximum of approximately 400 Steller sea lions in the water at the mouth of the Taiya River feeding on eulachon in 2003, but observed very few in the same area in 2002. Steller sea lions have also been observed in Lutak Inlet, a foraging site closer to both Taiya Point and Gran Point haulouts.

During the spring eulachon run, a seasonal haulout site is located on Taiya Point at the southern tip of Taiya Inlet, approximately 11 mi (18 km) from the project site. Twenty-five to 40 sea lions are estimated to use this haulout for about three weeks during spring run, during which they frequently are observed in the inlet (K. Gross, personal communication reported in MOS 2016). However, most animals leave the inlet shortly after the eulachon run and are rarely observed in the summer. Based on survey data and local observations in the project area, it is estimated that two animals may be present each day in February (56 exposures), 16 animals may be present on each day in March (half of the mean found on Taiya Rocks during the eulachon run, 496 exposures), and 40 animals may be present each day in April (1,200 exposures) for a total of 1,752 potential exposures.

Harbor Seal

No long-term haulout sites have been documented for harbor seals in Taiya Inlet; however, seasonal haulouts are present within six miles of the project area at Seal Cove and at the mouth of the Taiya River. Based on reports from local observers, a few resident harbor seals are expected to occur within Taiya Inlet during the winter months, but during the April and May eulachon run numbers can range from 20 to over 100 (K. Gross and R. Ford, personal communication reported in MOS 2016). Before and after the spawning run, much lower numbers of harbor seals are present.

Based on survey data and local observations in the project area it is assumed that 20 seals (the lower estimate in the range) occur within the project area each day in February through March (560 takes in February and 620 takes in March) and 100 seals (the higher estimate in the range) during April (3,000 takes) for a total of 4,180 potential exposures.

Level A harassment calculations

WP&YR intends to avoid Level A harassment take by shutting down installation activities at approach of any marine mammal to the representative Level A harassment (PTS onset) ensonification zone up to a practical shutdown monitoring distance. As small/cryptic marine mammal species may enter the Level A harassment zone before shutdown mitigation procedures can be implemented, and some animals may occur between the maximum Level A harassment ensonification zone and the maximum shutdown safety zone, we conservatively estimate that 20 percent of the Level B harassment takes calculated above for humpback whales, harbor porpoises, Dall's porpoises, and harbor seals, have the potential to be takes by Level A harassment (Table 6). Minke whale occurrence in Taiya Inlet is rare. Because vessel-based PSOs are able to monitor the entire Level A harassment zone (whales entering the inlet), WP&YR did not request, and NMFS is not proposing, to authorize Level A harassment take of minke whales.

Table 6. Estimated take by Level A and Level B harassment, by species and stock, resulting from WP&YR project activities.

Common name	Stock	Stock abundance[1]	Level A	Level B	Total take	Take as percentage of stock
Humpback whale	Central North Pacific	10,103[2]	25	100	125	1.23
Minke Whale	Alaska	N/A	0	2	2	N/A
Killer whale	Alaska Resident	2,347	0	100	100	4.3
	Northern Resident	261				38.3

	Gulf of Alaska, Aleutian Islands, Bering Sea Transient	587				17.0
	West Coast Transient	243				41.2
Harbor porpoise	Southeast Alaska	975	40	161	201	20.6
Dall's porpoise	Alaska	83,400	24	98	122	0.01
Steller sea lion	Western U.S.	54,267	0	35[3]	35	0.06
	Eastern U.S.	41,638	0	1,717	1,717	4.1
Harbor seal	Lynn Canal/ Stephens Passage	9,478	836	3,344	4,180	44.1

[1] Stock or DPS size is N_{best} according to NMFS 2018 Draft Stock Assessment Reports.
[2] For ESA section 7 consultation purposes, 6.1 percent are designated to the Mexico DPS and the remaining are designated to the Hawaii DPS; therefore, we assigned 2 Level B takes to the Mexico DPS.
[3] Based on the percent of branded animals at Gran Point and in consultation with the Alaska Regional Office, we used a 2 percent distinction factor to determine the number of animals potentially from the western DPS.

There are a number of reasons why the estimates of potential incidents of take are likely to be conservative. Given the lack of density information, we use conservative estimates of marine mammal presence to calculate takes for each species. Additionally, in the context of stationary activities such as pile driving, and in areas where resident animals may be present, this number represents the number of instances of take that may occur to a small number of individuals, with a notably smaller number of animals being exposed more than once per individual. While pile driving or drilling can occur any day throughout the in-water work window, and the analysis is conducted on a per day basis, only a fraction of that time is actually spent pile driving or drilling. The potential effectiveness of mitigation measures in reducing the number of takes or exposure time is also not quantified in the take estimation process. For these reasons, these take estimates may be conservative, especially if each take is considered a separate individual animal, and especially for pinnipeds.

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 such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (latter not applicable for this action). 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 such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

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

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

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

Mitigation for Marine Mammals and their Habitat

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

- Conduct briefings between construction supervisors and crews and the marine mammal monitoring team prior to the start of all pile driving activity, and when new personnel join the work, to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures;
- For in-water heavy machinery work other than pile driving (*e.g.*, standard barges, etc.), if a marine mammal comes within 10 m, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include the following activities: (1) movement of the barge to the pile location; or (2) positioning of the pile on the substrate via a crane (*i.e.*, stabbing the pile);
- Work may only occur during daylight hours, when visual monitoring of marine mammals can be conducted;
- For those marine mammals for which Level B harassment has not been authorized, in-water pile installation/removal and drilling will shut down immediately if such species are observed within or on a path towards the monitoring zone (i.e., Level B harassment zone); and
- If take reaches the authorized limit for an authorized species, pile installation will be stopped as these species approach the Level B harassment zone to avoid additional take.

The following measures will apply to WP&YR's mitigation requirements:

Establishment of Shutdown Zone for Level A Harassment - For all pile driving/removal and drilling activities, WP&YR will establish a shutdown zone. The purpose of a shutdown zone is generally to define an area within which shutdown of activity will occur upon sighting of a

marine mammal (or in anticipation of an animal entering the defined area). Conservative shutdown zones of 150 m for low- and high- frequency cetaceans, 80 m for phocid pinnipeds, and 10 m for mid-frequency cetaceans and otariid pinnipeds will be used during all drilling and vibratory pile driving/removal activities to prevent incidental Level A harassment exposure for these activities (Table 7). During impact pile driving, a 150 m zone will be established for all species except for low-frequency cetaceans for which a 2,000 m zone will be used. These shutdown zones will be used to prevent incidental Level A exposures from impact pile driving for mid-frequency cetaceans and otariid pinnipeds, and to reduce the potential for such take for other species. The placement of Protected Species Observers (PSOs) during all pile driving and drilling activities (described in detail in the *Monitoring and Reporting Section*) will ensure marine mammals in the shutdown zones are visible. The 150 m zone is the practical distance WP&YR anticipates phocid pinnipeds and high-frequency cetaceans can be effectively observed in the project area. The 2,000 m zone for low-frequency cetaceans is determined by the width of Taiya Inlet at Skagway Harbor. Observers will be present on vessels in the Taiya Inlet and able to observe large whales traveling north into the inlet and project area.

Table 7. Monitoring and shutdown zones for each project activity.

Source	Monitoring Zone (m)	Shutdown Zone (m)
Drilling and Vibratory Installation/ Removal	13,000	Low- and high- frequency cetaceans: 150 Phocid pinnipeds: 80 Mid-frequency cetaceans and otariid pinnipeds: 10
Impact Installation	3,700	Low-frequency cetaceans: 2,000 All other species: 150

Establishment of Monitoring Zones for Level B Harassment - WP&YR will establish monitoring zones to correlate with Level B monitoring zones which are areas where SPLs are

equal to or exceed the 160 dB rms threshold for impact driving and the 120 dB rms threshold during vibratory driving and drilling. 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 area outside the shutdown zone and thus prepare for a potential cease of activity should the animal enter the shutdown zone. The monitoring zones are described in Table 7. The monitoring zone for drilling and vibratory pile driving/removal activities is 13,000 m, corresponding to the maximum distance before landfall. The monitoring zone for impact pile driving will be 3,700 m. Placement of PSOs on vessels in the Taiya Inlet allow PSOs to observe marine mammals traveling north into the inlet and Skagway Harbor. Should PSOs determine the monitoring zone cannot be effectively observed in its entirety, Level B harassment exposures will be recorded and extrapolated based upon the number of observed take and the percentage of the Level B zone that was not visible.

Soft Start - The use of soft-start procedures are believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of strikes from the hammer at reduced energy, with each strike followed by a 30-second waiting period. This procedure will be conducted a total of three times before impact pile driving begins. Soft start will be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer. Soft start is not required during vibratory pile driving and removal activities.

Pre-Activity Monitoring - Prior to the start of daily in-water construction activity, or whenever a break in pile driving/removal or drilling 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 cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zone, a soft-start cannot proceed until the animal has left the zone or has not been observed for 15 minutes. If the Level B harassment zone has been observed for 30 minutes and non-permitted species are not present within the zone, soft start procedures can commence and work can continue even if visibility becomes impaired within the Level B monitoring zone. When a marine mammal permitted for Level B take is present in the Level B harassment zone, activities may begin and Level B take will be recorded. As stated above, if the entire Level B zone is not visible at the start of construction, piling or drilling activities can begin. If work ceases for more than 30 minutes, the pre-activity monitoring of both the Level B and shutdown zone will commence.

Due to the depth of the water column and strong currents present at the project site, bubble curtains will not be implemented as they would not be effective in this environment.

Based on our evaluation of the applicant's measures, NMFS has determined that the planned 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.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth, requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or

impacts on populations of marine mammals that are expected to be present in the action area. Effective reporting is critical both to compliance as well as to ensuring that the most value is obtained from the required monitoring.

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

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

Marine Mammal Visual Monitoring

Monitoring shall be conducted by NMFS-approved PSOs per the Marine Mammal Monitoring Plan dated January 18, 2019 available online at online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-*

authorizations-construction-activities. Trained observers shall be placed from the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. Observer training must be provided prior to project start, and shall include instruction on species identification (sufficient to distinguish the species in the project area), description and categorization of observed behaviors and interpretation of behaviors that may be construed as being reactions to the specified activity, proper completion of data forms, and other basic components of biological monitoring, including tracking of observed animals or groups of animals such that repeat sound exposures may be attributed to individuals (to the extent possible).

Monitoring will be conducted 30 minutes before, during, and 30 minutes after pile driving/removal and drilling activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving/removal and drilling 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.

A total of five PSOs will be based on land and vessels. During all pile driving/removal and drilling activities observers will be stationed at the Railroad Dock, Yakutania Point, and Dyea Point. These stations will allow full monitoring of the impact hammer monitoring zone and the Level A shutdown zones. The vibratory and drilling monitoring zone will be monitored by the three land-based PSOs and two PSOs stationed on boats anchored near the shoreline, with each team (vessel operator and observer) stationed approximately 2 km apart in the inlet south of the project site (Figure 2 in the WP&YR Marine Mammal Mitigation and Monitoring Plan).

PSOs will scan the waters using binoculars, and/or spotting scopes, and will use a handheld GPS or range-finder device to verify the distance to each sighting from the project site. 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 by calling for the shutdown to the hammer operator. WP&YR will adhere to the following observer qualifications:

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

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

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

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

(v) WP&YR shall submit observer CVs for approval by NMFS.

Additional standard observer qualifications include:

- 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 and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

WP&YR will submit monthly marine mammal monitoring reports. A draft marine mammal monitoring report will be submitted to NMFS within 90 days after the completion of pile driving and removal and drilling 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 pile driving activity;
- Distance from pile driving 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 clearly causes the take of a marine mammal in a manner prohibited by the IHA (if issued), such as an injury, serious injury or mortality, WP&YR will immediately cease the specified activities and report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, 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 may not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with WP&YR to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. WP&YR will not be able to resume their activities until notified by NMFS via letter, email, or telephone.

In the event that WP&YR 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), WP&YR will immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or

by email to 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 WP&YR to determine whether modifications in the activities are appropriate.

In the event that WP&YR 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), WP&YR will report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinator, within 24 hours of the discovery. WP&YR will provide photographs, video footage (if available), or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

Acoustic Monitoring

WP&YR will conduct acoustic monitoring for the purposes of SSV in accordance with the Acoustic Monitoring Plan , dated January 28, 2019 available online at online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*. WP&YR will collect acoustic data for at least one 42-inch permanent pile, using all three installation methods (impact pile driving, vibratory pile driving, and down-the-hole drilling) from at least two distances from the pile (one approximately 10 meters from the pile and at least one additional measurement in the far field). Equipment will record, and sound spectra in one-third octave bands will be reported, from 10 Hz to 20 kHz. The following data, at minimum, shall be collected during acoustic monitoring and reported:

- Hydrophone equipment and methods: recording device, sampling rate, distance from the pile where recordings were made; depth of recording device(s);
- Type of pile (42-inch), and segment of pile (1, 2, or 3), being driven and method of driving/removal and drilling during recordings; and
- Mean, median, and maximum (or 90th percentile), and range sound levels (dB re 1µPa): cumulative sound exposure level (SEL_{CUM}), peak sound pressure level (SPL_{PK}), root mean square sound pressure level (SPL_{RMS}), and single-strike sound exposure level (SEL_{S-S}) as appropriate for the sound source.

For more details please see WP&YR's acoustic monitoring plan, available at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*.

Negligible Impact Analysis and Determination

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

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

Pile driving/removal and drilling activities associated with the Railroad Dock installation project as outlined previously, have the potential to disturb or displace marine mammals in Taiya Inlet near Skagway. Specifically, the specified activities may result in take, in the form of Level A harassment and Level B harassment from underwater sounds generated from pile driving and removal and down-the-hole drilling. Potential takes could occur if individuals of these species are present in the ensonified zone when these activities are underway.

The takes from Level A and Level B harassment will be due to potential behavioral disturbance, TTS, and PTS (for select species). No mortality is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. Level A harassment is only anticipated for humpback whales, Dall's porpoise, harbor porpoise, and harbor seal. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see *Mitigation* section).

As described previously, minke whales are considered rare in the project area and we authorize only nominal and precautionary take of two individuals. Therefore, we do not expect meaningful impacts to minke whales and find that the total minke whale take from each of the specified activities will have a negligible impact on this species.

For remaining species, we discuss the likely effects of the specified activities in greater detail. Effects on individuals that are taken by Level B harassment, on the basis of reports in the

literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff 2006; HDR, Inc. 2012; Lerma 2014; ABR 2016). Most likely, individuals will move away from the sound source and be temporarily displaced from the areas of pile driving and drilling, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted in southeast Alaska, which have taken place with no known long-term adverse consequences from behavioral harassment. Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to avoid the area while the activity is occurring. While vibratory driving and drilling associated with the planned project may produce sound at distances of many kilometers from the project site, thus intruding on some habitat, the project site itself is located in a busy harbor and the majority of sound fields produced by the specified activities are close to the harbor. Therefore, we expect that animals annoyed by project sound would avoid the area and use more-preferred habitats.

In addition to the expected effects resulting from authorized Level B harassment, we anticipate that humpback whales, harbor porpoises, Dall's porpoises, and harbor seals may sustain some limited Level A harassment in the form of auditory injury. However, animals in these locations that experience PTS would likely only receive slight PTS, *i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by pile driving, *i.e.*, the low-frequency region below 2 kHz, not severe hearing impairment or impairment in the regions of greatest hearing sensitivity. If hearing impairment

occurs, it is most likely that the affected animal would lose only a small number of decibels in its hearing sensitivity, which in most cases is not likely to meaningfully affect its ability to forage and communicate with conspecifics. As described above, we expect that marine mammals would be likely to move away from a sound source that represents an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat. The project activities will not modify existing marine mammal habitat for a significant amount of time. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

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

- No mortality is anticipated or authorized;
- The Level A harassment exposures are anticipated to result only in slight PTS, within the lower frequencies associated with pile driving;
- The anticipated incidents of Level B harassment are likely to consist of temporary modifications in behavior that are not anticipated to result in fitness impacts to individuals;
- The specified activity and ensonification area is very small relative to the overall habitat ranges of all species and does not include habitat areas of special significance (BIAs or ESA-designated critical habitat); and

- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact.

In addition, although affected humpback whales and Steller sea lions may be from a DPS that is listed under the ESA, it is unlikely that minor noise effects in a small, localized area of habitat would effect the stocks' ability to recover. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities will have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

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

Table 6 demonstrates the number of animals that could be exposed to received noise levels that could cause Level A harassment and Level B harassment for the planned activities in

the WP&YR project area. With the exception of the Northern Resident and West Coast Transient killer whale stocks and harbor seals, our analysis shows that less than 25 percent of each affected stock could be taken by harassment. The numbers of animals anticipated to be taken for these stocks would be considered small relative to the relevant stock's abundances even if each estimated taking occurred to a new individual – an extremely unlikely scenario.

Calculated takes do not assume multiple harassments of the same individual(s), resulting in larger estimates of take as a percentage of stock abundance than are likely given resident individuals. This is the case with the resident stocks of killer whale (Alaska and Northern Resident stocks and harbor seal (Lynn Canal/Stephens Passage stock).

When assuming the total take authorized would occur to a single stock and that these numbers represent individuals taken, rather than instances of take, the total authorized take for killer whales as compared to each potentially affected stock ranges from 4.3 percent to 41.2 percent of each stock abundance. In reality, it is highly unlikely that 100 individuals of any one killer whale stock will be harassed. Instead, as pods remain in the area over a period of days, it is assumed that take will occur on a smaller number of the same individuals from any stock, (20 individuals, or the estimated group size from one stock, or 40 individuals, if different pods from the same stock are taken in both March and April), which would result in smaller takes as a percentages of stocks (ranging from 0.9 percent to 8.2 percent if takes are from 20 whales from the same stock, or 1.7 percent to 16.5 percent if takes are from 40 whales from the same stock).

As reported, a small number of harbor seals, most of which reside in Taiya Inlet year-round, will be exposed to construction activities for three months. The total population estimate in the Lynn Canal/Stephens Passage stock is 9,478 animals over 1.37 million acres (5,500 km^2) of area in their range, which results in an estimated density of 36 animals within Taiya Inlet. The

largest Level B harassment zone within the inlet occupies 17.9 km^2, which represents less than 0.4 percent of the total geographical area occupied by the stock. The great majority of these exposures will be to the same animals given their residency patterns.

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

Unmitigable Adverse Impact Analysis and Determination

No relevant subsistence uses of the affected marine mammal stocks or species are implicated by this action in the project area. The planned project will occur near but not overlap with the subsistence area used by the villages of Hoonah and Angoon where harbor seals and Steller sea lions are available for subsistence harvest (Wolfe *et al.* 2013; N. Kovaces, Skagway Traditional Council, personal communication). Therefore, NMFS has determined that the total taking of affected species or stocks will not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our action with respect to environmental consequences on the human environment. This action is consistent with categories of activities identified in Categorical Exclusion B4 (incidental harassments authorizations with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have

not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Endangered Species Act

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

On February 11, 2019 NMFS Alaska Region issued a Biological Opinion to NMFS Office of Protected Resources on the issuance of this IHA. The Biological Opinion determined that the proposed action was not likely to jeopardize the continued existence of the humpback whale Mexico DPS and the Steller sea lion western DPS or adversely affect designated critical habitat.

Authorization

NMFS has issued an IHA to WP&YR for the incidental take of marine mammals due to in-water construction work associated with the Railroad Dock dolphin installation project in Skagway, Alaska from February 15, 2019 through February 14, 2020, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: February 13, 2019.

Donna S. Wieting, Director,

Office of Protected Resources,

National Marine Fisheries Service.

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