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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XG204

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Annapolis Passenger Ferry Dock Project, Washington

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

ACTION: Notice; issuance of 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 Kitsap Transit, to incidentally take, by Level A and B harassment, marine mammals during construction activities associated with the Annapolis Passenger Ferry Dock Project in Puget Sound, Washington.

DATES: This Authorization is applicable from October 1, 2018 through September 31, 2019.

FOR FURTHER INFORMATION CONTACT: Jaclyn Daly, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application, IHA, 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/node/23111*. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce (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 authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

NMFS has defined "negligible impact" in 50 CFR 216.103 as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

The MMPA states that the term "take" means to harass, hunt, capture, kill or attempt to harass, hunt, capture, or kill any marine mammal.

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

Summary of Request

On March 5, 2018, NMFS received a request from Kitsap Transit for an IHA to take marine mammals incidental to pile driving and removal associated with upgrades to the Annapolis Ferry Terminal, Puget Sound, Washington. Kitsap Transit submitted a revised application on May 3, 2018 which NMFS deemed adequate and complete. Pile driving and removal will take a maximum of 17 days. No serious injury or mortality is expected to occur or is authorized from this activity and, therefore, an IHA is appropriate.

On May 16, 2018, NMFS published its proposed IHA in the *Federal Register* for public comment (83 FR 22624). NMFS has issued an IHA to Kitsap Transit for the take, by Level A and B harassment, of harbor seal (*Phoca vitulina richardii*), Steller sea lion (*Eumetopias jubatus monteriensis*), California sea lion (*Zalophus californianus*), and harbor porpoise (*Phocoena phocoena vomerina*).

Description of Proposed Activity

Overview

Kitsap Transit is proposing to upgrade the existing dock at its Annapolis Ferry Terminal to accommodate larger vessels by extending the dock into deeper water and bring the terminal into compliance with American Disability Act (ADA) accessibility standards. The project includes removing 10 existing concrete and steel piles that support the existing pier and float and installing 12 new steel piles to support updated structures. Piles will be removed using a vibratory hammer and new piles will be installed using a vibratory and, if necessary, an impact hammer. The project is anticipated to take 8 weeks to complete; however, Kitsap Transit anticipates it will take a maximum of 17 days to complete in-water pile driving activities.

Dates and Duration

The project would occur for eight weeks between October 1, 2018 and September 30, 2019 with the exception of March 3, 2019 through July 1, 2019 to protect salmonids and surf smelt. Pile removal has been conservatively estimated to occur at a rate of 2 piles removed per day, which would require 5 days to remove 10 piles. Pile installation was conservatively estimated to occur at a rate of 1 pile per day, which would require 12 days to install 12 piles. In total, there would be 17 days (maximum) of pile driving. No in-water pile driving will be conducted between

Specific Geographic Region

The Annapolis Ferry Terminal is located in Sinclair Inlet across from Naval Base Kitsap (NBK) Bremerton and southwest of Bainbridge Island. Potential areas ensonified during pile driving include Sinclair Inlet and portions of Port Washington Narrows, Port Orchard Passage and Rich Passage. These waterbodies range up to 130 feet in depth and substrates include silt/mud, sand, gravel, cobbles and rock outcrops. The terminal itself and parking area contains a hardened shoreline comprised of sheet piles.

Detailed Description of Specific Activity

A detailed description of the specified activity is provided in our notice of proposed IHA (83 FR 22624; May 16, 2018). Please refer to that document for full detail. We provide a summary here.

The Annapolis Ferry Terminal was designed to have a useful life of 40 years and is now 34 years old. Kitsap Transit has determined upgrades are necessary to meet ADA requirements and accommodate larger ferry vessels. To make the upgrades, Kitsap Transit is removing a portion of the existing pier, installing a longer gangway, removing the existing float and

installing a larger float in deeper water. This work requires removing 10 existing piles and installing 12 new piles.

Piles would be removed with a vibratory hammer. Piles would be installed using a vibratory hammer to refusal and then "proofed" with an impact hammer, if necessary. The maximum amount of time spent removing 10 piles would be 5 days while the maximum amount of time installing 12 piles would be 12 days for a total of 17 days. The types of piles included in the project and schedule, are included in Table 1.

Table 1. Description of Piles to Be Installed and Removed During the Annapolis Ferry Dock Project.

Pile Size	Method	No. of Piles	No. of Days (maximum)
Pile Removal			
16.5-in concrete	Vibratory	4	5
18 " steel	Vibratory	6	
Pile Installation			
12-in steel	Vibratory	4	12
	Impact		
24-in steel	Vibratory	8	
	Impact		

Proposed 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 was published in the *Federal Register* on May 16, 2018 (83 FR 22624). During the 30-day public comment period, the Marine Mammal Commission (Commission) submitted a letter, providing comments as described below.

Comment 1: The Commission made a general comment recommending NMFS more thoroughly review applications before deeming one adequate and complete and better evaluate Level A harassment zones and take numbers prior to publishing a proposed authorization.

NMFS Response: MMPA implementing regulations provide a list of 14 informational elements that must be included in an IHA application before NMFS can determine it is adequate and complete. For the subject IHA, the application contained all the required information. With respect to Level A harassment distances and take numbers, the public review process provides the Commission opportunity to comment on the application and our proposal and we consider all public comments prior to issuance of the IHA. The Level A harassment zones for this project are relatively small; however, as described in the Estimated Take section below, we have included authorization of a small number of takes by Level A harassment, as recommended by the Commission, in case animals are undetected before Kitsap Transit can shut down.

Comment 2: The Commission recommends that NMFS require Kitsap Transit to abide by mitigation measures previously used by other applicants regarding contacting the Orca Network and/or Center for Whale Research for both marine mammal sightings and acoustic detection data.

NMFS Response: Both the application and proposed IHA *Federal Register* notice included a condition that Kitsap Transit access the Orca Network each day of pile driving. NMFS has added that this specifically applies to both visual and acoustic monitoring data.

Comment 3: The Commission recommends that NMFS require Kitsap Transit and any other action proponent using a bubble curtain to implement what they refer to as "NMFS's bubble curtain performance standards" in all relevant authorizations. The Commission provided the following performance standards it deems is neither unreasonable or cost-prohibitive: (1) the bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column, (2) the lowest bubble ring should be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring should ensure 100

percent mudline contact (no parts of the ring or other objects shall prevent full mudline contact), and (3) the action proponent requires construction contractors to train personnel in the proper balancing of air flow to the bubblers and to submit an inspection/performance report for approval by the action proponent within 72 hours following the performance test—corrections to the attenuation device to meet the performance standards are to occur prior to impact driving.

NMFS Response: The Commission mischaracterized the referenced performance measures as NMFS' "standards." These measures were developed by the U.S. Navy, in consultation with NMFS, as a direct result of documented issues with bubble curtain performance. These issues were problematic because NMFS considered a reduction in impact pile driving source level based on effective bubble curtain use. The same case does not apply here and NMFS disagrees with the Commission's contention that consideration of any source level reduction has no bearing on whether an applicant should be implementing performance measures. NMFS will consider the appropriateness of including some or all of the proposed bubble curtain performance measures on a case-by-case basis.

NMFS also disagrees with the Commission's comment that the performance measures should be implemented because they are neither unreasonable nor cost-prohibitive. Mitigation requirements in an IHA must be carefully assessed with respect to NMFS' authority under the MMPA. For the subject IHA, Kitsap Transit did not request, nor did NMFS propose a reduction in impact pile driving source levels due to use of the bubble curtain. That is, the use of a bubble curtain did not influence our effects analysis or take numbers. Moreover, use of the bubble curtain was not critical to NMFS making a negligible impact determination required to issue the IHA. In addition to negligible impact and small numbers findings, mitigation measures are designed to provide the least practicable adverse impact to marine mammals. Use of the bubble

curtain was part of the proposed action due to requirements separate and apart from Kitsap Transit's request for an IHA. However, to dictate how the applicant operates the bubble curtain, trains operators, reports inspection results on performance testing, and makes any corrections is not appropriate for this short project involving small (12-in and 24-in) piles for which we did not consider use of the bubble curtain quantitatively in our effects analysis.

Finally, it is unclear how the Commission determined the implementation of the performance measures would not be unreasonable nor cost-prohibitive which are their reasons for us to include these measures. For example, the Fish and Wildlife Service may require certain operational criteria through consultation under section 7 of the Endangered Species Act. The Commission does not provide evidence they have considered these or any other potential operational protocols. Further, the applicant did not provide a bubble curtain performance testing plan so it is unclear how the Commission determined requiring one would not be cost-prohibitive for this small, short project.

Comment 4: The Commission recommends that it should be a priority for NMFS to consult with both internal and external scientists and acousticians to determine the appropriate Level A harassment accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated SEL_{cum} thresholds for the various types of sound sources. Until such time that this issue is resolved, the Commission postulated that NMFS is relegated to using the outputs of its user spreadsheet, while also rounding up the outputs of the user spreadsheet to the nearest 5, 10, 25 or 100 m, when more sophisticated modeling is not available.

NMFS Response: As described in NMFS *2018 Revision to Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing*, NMFS is committed

to re-examining the default 24-hour accumulation period and convening a working group to investigate alternative means of identifying appropriate accumulation periods. However, NMFS already considers factors other than the outputs of the User Spreadsheet in developing appropriate Level A harassment zones and/or shutdown zones. For example, in the *Federal Register* notice of the proposed IHA, NMFS identified the Level A harassment distances generated by the User Spreadsheet represented a long duration but produced very small harassment zones (*e.g.,* six hours of vibratory pile removal per day separated in time to re-set piles resulted in an 11.8 m Level A harassment distance for harbor seals). Per the Commission, NMFS should round this up to a 15 meter Level A harassment zone. However, NMFS believes this results is an unwarranted shut down zone as sophisticated modeling is not necessary to justify that a harbor seal would not remain 11.8 meters from piles being removed over the course of several hours. In addition, NMFS is implementing a minimum 10 m shut down for all in-water equipment, including pile driving. However, NMFS does agree integrated shut-down zones (e.g., 5 to 10 meter increments) are more practicable for observers; therefore, the new shut down zone in the example provided is 10 m. For larger distances (*e.g.,* 393.8 meters), we have rounded to 395 meters despite the long duration in consideration of the unpredictable movement and lower profile of harbor seals.

Comment 5: The Commission recommends NMFS provide its criteria for rounding take estimates.

NMFS Response: On June 27, 2018, NMFS provided the Commission with internal guidance on rounding and the consideration of additional factors in take estimation.

Comment 6: The Commission recommends 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; NMFS provide the Commission with a legal analysis supporting the conclusion the renewal process is consistent with the requirements under section 101(a)(5)(D) of the MMPA; and should NMFS issue a renewal IHA, NMFS should publish notice in the *Federal Register* whenever such a renewal has been issued.

NMFS Response: Until an applicant requests renewal of an IHA for which public comment was received on the proposal to potentially renew the initial IHA, NMFS will continue to make abbreviated notices available to the public when proposing IHA renewals. When an applicant requests renewal of an IHA for which public comment was received on the proposed IHA (when first issued), NMFS will utilize the renewal process because the original 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. Therefore the public comment period is not bypassed. To make this clearer to the public, NMFS added language to the SUMMARY of all proposed IHAs requesting the public comment on the potential renewal. In addition, all proposed IHA notices 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. 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. 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. NMFS will publish a description of the renewal process on our website before any renewal is issued utilizing the new process. Finally, NMFS has previously notified the Commission that a notice of issuance or denial of a renewal IHA would be published in the *Federal Register*.

Description of Marine Mammals in the Area of Specified Activities

A detailed description of the species likely to be affected by Kitsap Transit's activity, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, are provided in Kitsap Transit's application and the *Federal Register* notice for the proposed IHA (83 FR 22624; May 16, 2018). We are not aware of any changes in the status of these species and stocks. To avoid repetition, detailed descriptions are not provided here. Please refer to additional species information available in the NMFS stock assessment reports for the Pacific and Alaska at http://www.nmfs.noaa.gov/pr/sars/region.htm.

Table 2. Marine Mammal Potentially Present in the Vicinity of the Annapolis Ferry Terminal During Construction.

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	20,990 (0.05; 20,125; 2011)	624	132
Family Balaenopteridae (rorquals)						
Humpback whale	*Megaptera novaeangliae kuzira*	California/Oregon/ Washington (CA/OR/WA)	E/D; Y	1,918 (0.03; 1,876; 2014)	11[7]	≥9.2
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Killer whale	*Orcinus orca*[4]	West Coast Transient[5]	-; N	243 (n/a; 2009)	2.4	0
		Eastern North Pacific Southern Resident	E/D; Y	83 (n/a; 2016)	0.14	0

Family Phocoenidae (porpoises)						
Harbor porpoise	*Phocoena phocoena vomerina*	Washington Inland Waters	-; N	11,233 (0.37; 8,308; 2015)	66	≥7.2
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California sea lion	*Zalophus californianus*	United States	-; N	296,750 (n/a; 153,337; 2011)	9,200	389
Steller sea lion	*Eumetopias jubatus monteriensis*	Eastern U.S.	D; Y	41,638 (n/a; 2015)	2,498	108
Family Phocidae (earless seals)						
Harbor seal	*Phoca vitulina richardii*	Southern Puget Sound[6]	-; N	1,568 (0.15; 1,025; 1999)	Undet.	3.4

[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 at: *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. For two stocks of killer whales, the abundance values represent direct counts of individually identifiable animals; therefore there is only a single abundance estimate with no associated CV. For certain stocks of pinnipeds, abundance estimates are based upon observations of animals (often pups) ashore multiplied by some correction factor derived from knowledge of the species' (or similar species') life history to arrive at a best abundance estimate; therefore, there is no associated CV. In these cases, the minimum abundance may represent actual counts of all animals ashore.

[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, subsistence hunting, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value. All M/SI values are as presented in the draft 2017 SARs.

[4]Transient and resident killer whales are considered unnamed subspecies (Committee on Taxonomy, 2017).

[5]The abundance estimate for this stock includes only animals from the "inner coast" population occurring in inside waters of southeastern Alaska, British Columbia, and Washington—excluding animals from the "outer coast" subpopulation, including animals from California—and therefore should be considered a minimum count. For comparison, the previous abundance estimate for this stock, including counts of animals from California that are now considered outdated, was 354.

[6]Abundance estimates for the Southern Puget Sound harbor seal stock is not considered current. PBR is therefore considered undetermined for these stocks, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimates, as these represent the best available information for use in this document.

[7]This stock is known to spend a portion of time outside the U.S. EEZ. Therefore, the PBR presented here is the allocation for U.S. waters only and is a portion of the total. The total PBR for humpback whales is 22 (one half allocation for U.S. waters). Annual M/SI presented for these species is for U.S. waters only.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

We provided a detailed description of the anticipated effects of the specified activity on marine mammals in our *Federal Register* notice announcing the proposed authorization (83 FR 22624; May 16, 2018). Please refer to that document for our detailed analysis; we provide only summary information here.

The introduction of anthropogenic noise into the aquatic environment from pile driving and removal is the primary means by which marine mammals may be harassed from Kitsap Transit's specified activity. The effects of pile driving noise on marine mammals are dependent on several factors, including, but not limited to, sound type (*e.g.*, impulsive vs. non-impulsive), the species, age and sex class (*e.g.*, adult male vs. mom with calf), duration of exposure, the distance between the pile and the animal, received levels, behavior at time of exposure, and previous history with exposure (Southall *et al*., 2007, Wartzok *et al.* 2004). Animals exposed to natural or anthropogenic sound may experience physical and behavioral effects, ranging in magnitude from none to severe (Southall *et al*. 2007). In general, exposure to pile driving noise has the potential to result in auditory threshold shifts (permanent threshold shift (PTS) and temporary threshold shift (TTS)) and behavioral reactions (*e.g*., avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior).

Similar pile driving and removal activities have been conducted in Sinclair Inlet and, more broadly, Puget Sound. Marine mammal monitoring conducted under several IHAs indicate there are no permanent or significant impacts to marine mammals from exposure to pile driving noise.

Construction activities at the Annapolis Ferry Terminal could have localized, temporary impacts on marine mammal habitat and their prey by increasing in-water sound pressure levels

and slightly decreasing water quality. Any impacts are anticipated to be localized, short-term, and minimal.

Estimated Take

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

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

Authorized takes would be by Level A and B harassment. Level A harassment is authorized for those cases where animals are undetected before exposure to noise levels that may induce auditory injury. As described previously, no mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

Described in the most basic way, 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.

Below, we describe these components in more detail and present the authorized 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 dB re 1 μPa (rms) for continuous (e.g. vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (e.g., seismic airguns) or intermittent (e.g., scientific sonar) sources. For in-air sounds, NMFS predicts that phocids and otariids exposed above received levels of 90 dB and 100 dB re 20 μPa (rms), respectively, may be behaviorally harassed.

Kitsap Transit's project includes the use of continuous (vibratory pile driving) and impulsive (impact pile driving) sources, and therefore the 120 and 160 dB re 1 μPa (rms) are applicable.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Technical Guidance, 2016) 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). Kitsap Transit's activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving) sources.

These thresholds are provided in Table 3. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2016 Technical Guidance, which may be accessed at: http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm.

Table 3. Thresholds identifying the onset of Permanent Threshold Shift

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

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa²s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (i.e., varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds.

Sound Propagation – 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

B = transmission loss coefficient (assumed to be 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.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source (20*log(range)). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source (10*log(range)). As is common practice in coastal waters, here we assume practical spreading loss (4.5 dB reduction in sound level for each doubling of distance). Practical spreading is a compromise that is often used under conditions where water depth increases as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions.

Sound Source Levels – The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. There are source level measurements available for certain pile types and sizes from the specific environment of several of nearby projects (*i.e.*, NBK Bangor and NBK Bremerton),

but not from all. Numerous studies have examined sound pressure levels (SPLs) recorded from underwater pile driving projects in California (*e.g.*, Caltrans, 2015) and elsewhere in Washington. In order to determine reasonable SPLs and their associated effects on marine mammals that are likely to result from pile driving at the six installations, studies with similar properties to the specified activity were evaluated.

No direct pile driving measurements at the Annapolis Ferry Dock are available. Therefore, Kitsap Transit reviewed available values from multiple nearshore marine projects obtained from the California Department of Transportation (Caltrans) using similar type of piles (e.g., size and material) and water depth (Caltrans, 2015). NMFS also evaluated the proposed source levels with respect to pile driving measurements made by the Washington Department of Transportation (WSDOT) at other ferry terminals in Puget Sound as well as measurements collected by the Navy in Puget Sound. A full description of source level analysis is contained within the notice of proposed IHA (83 FR 22624, May 16, 2018).

Table 4. Estimated Pile Driving Source Levels.

Method	Pile Size (inches)	Sound Pressure (dB re: 1 µPa)		
		SPL[1] (peak)	SPL(rms)[1]	SEL[1]
Impact	12	192	177	167[2]
	24	207	194	178
Vibratory	12	171	155	155
	24	178[3]	165[3]	165[3]
Vibratory Removal	16.5 – 18	175	160	160

[1] Source levels presented at standard distance of 10 m from the driven pile. Peak source levels are not typically evaluated for vibratory pile driving, as vibratory driving does not present rapid rise times. SEL source levels for vibratory driving are equivalent to SPL (rms) source levels.
[2] SEL value assumes a 10 dB reduction from SPL.
[3] SLs provided for 24 in. vibratory driving consider measurements from Caltrans (2015) for driving 24 in. sheet piles 36 in pipe piles, Navy measurements in inland Washington (as described in NMFS proposed rule (83 FR 9366; March 5, 2018)), and analysis contained with the Biological Opinion prepared for this project.

When 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 will result in some degree of overestimate of take by Level A harassment. 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, NMFS User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS. A description of inputs used in the User Spreadsheet, and the resulting isopleths are reported below.

Kitsap Transit estimates it will take a maximum of six hours, per day, to install or remove piles using a vibratory hammer (up to four piles per day). For steel piles that are "proofed," Kitsap Transit estimated approximately 1,000 hammer strikes per pile would be required with two piles installed per day. If piles can be installed completely with the vibratory hammer, Kitsap Transit would not use an impact hammer; however, it is included here as a possibility. A practical spreading model (15logR) was used for all calculation. NMFS considered these inputs when using the NMFS user spreadsheet (Table 5).

Table 5. NMFS User Spreadsheet Inputs.

Input Parameter	Vibratory Pile Driving	Impact Pile Driving
Weighting Factor Adjustment[1]	2.5 kHz	2 kHz
Source Level (SL)	See Table 4 (rms values)	See Table 4 (SEL values)
Duration	6 hours	n/a
Strikes per pile	n/a	1,000
Piles per day	n/a	2

Transmission loss coefficient	15	15
Distance from SL measurement	10 m	10 m

[1] For those applicants who cannot fully apply auditory weighting functions associated with the SEL_{cum} metric, NMFS has recommended the default, single frequency weighting factor adjustments (WFAs) provided here. As described in Appendix D of NMFS' Technical Guidance (NMFS, 2016), the intent of the WFA is to broadly account for auditory weighting functions below the 95 frequency contour percentile. Use of single frequency WFA is likely to over-predict Level A harassment distances.

As described above, the Level B harassment threshold for impulsive noise (e.g., impact pile driving) is 160 dB rms. The Level B harassment threshold for continuous noise (e.g., vibratory pile driving) is 120 dB rms.

Distances corresponding to received levels reaching NMFS harassment thresholds are provided in Table 6. These distances represent the distance at which an animal would have to remain for the entire duration considered (*i.e.*, 6 hours of vibratory pile driving, 2,000 hammer strikes) for the potential onset of PTS to occur. These results do not consider the time it takes to re-set between piles; therefore, it is highly unlikely any species would remain at these distances for the entire duration of pile driving within a day. As a result, these distances represent the calculated outputs of the User Spreadsheet but, in reality, do not reflect a likely scenario for the potential onset of Level A harassment. Regardless, Kitsap Transit has identified it is practicable to implement shut-down zones mirroring these calculated outputs to avoid Level A harassment. However, for practical purposes, we have modified them slightly for ease of monitoring and implementing mitigation (see Table 9). Table 6 also includes distances to the Level B harassment isopleths considering land truncation.

Table 6. Distances to Level A and B Harassment Thresholds and Area Ensonified.

Method	Pile size (inches)	Distance to Level A (meters)					Level B (meters)	Level B Area (km^2)
		LF Cetaceans	MF Cetaceans	HF Cetaceans	Phocids	Otariids		
Impact (install)	12	136	4.8	162.0	72.8	5.3	136	0.1
	24	735.8	26.2	876.4	393.8	28.7	1,848	5.5
Vibratory (install)	12	9.0	0.8	13.3	5.5	0.4	2,154	6.5
	24	41.7	3.7	61.6	25.3	1.8	10,000	19.2
Vibratory	16.5 -18	19.3	1.7	28.6	11.8	0.8	4,612	14.3

(removal)								

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

Available information regarding marine mammal occurrence in the vicinity of the Annapolis Ferry Terminal includes density information aggregated in the Navy's Marine Mammal Species Density Database (NMSDD; Navy, 2015) or site-specific survey information from particular installations (*e.g*., local pinniped counts). More recent density estimates for harbor porpoise are available in Jefferson *et al*. (2016).

Specifically, a density-based analysis is used for the harbor porpoise and Steller sea lion, while data from site-specific abundance surveys is used for the California sea lion and harbor seal (Table 7).

Table 7. Density or Pinniped Count Data, by Species.

Species	Density (animals/km^2)	Average Daily Pinniped Count
Harbor seal	1.22	n/a
Steller sea lion	0.036	n/a
California sea lion	n/a	69
Harbor Porpoise	0.53	n/a

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate.

The proposed IHA did not include authorization of take by Level A harassment for marine mammals due to the extended durations animals would have to be exposed within a relatively short distance. However, we have authorized Level A harassment in the final IHA in

the chance a marine mammal enters the conservative Level A harassment zone before pile driving could shut down. We do not believe there is a likely potential for Level A harassment for any species. Further, no take (either Level A or Level B harassment) of humpback whales, gray whales, and killer whales was requested or proposed for authorization due to the short duration of the project (17 days), the small amount of piles installed (12) and removed (5), and the incorporation of the prescribed mitigation and monitoring measures (see *Mitigation* and *Monitoring and Reporting* sections).

The take calculation for harbor seal, Steller sea lion, and harbor porpoise is derived using the following equation: *take estimate = species density (see Table 7)× ensonified area (based on pile size) x number of pile driving days*. Because there would be 5 days of pile removal, four 12 in. piles installed over four days (maximum), and eight 24 in. piles installed over eight days (maximum), we summed each product together to produce a total take estimate. When impact and vibratory hammer use would occur on the same day, the larger Level B harassment ensonifed zone for that day was used. For example, harbor seal takes due to 12 inch pile driving are calculated as 1.22 animals/km^2 x 6.5 km^2 x 4 days = 32. Harbor seal takes due to installing 24 in. piles is 1.22 animals/km^2 x 19.2 km^2 x 8 days = 187. Finally, harbor seal takes due to pile removal is 1.22 animals/km^2 x 14.3 km^2 x 5 days = 87. Therefore, take by Level B harassment is estimated at 306 harbor seals. We anticipate this amount of take does not represent number of individuals taken but some lesser amount of individuals taken multiple times. The take estimation process was repeated for Steller sea lions and harbor porpoise using their respective densities (see Table 7).

The calculation for California sea lion exposures is estimated by the following equation: *Level B Exposure estimate = N (estimated animals/day) × number of pile driving days*. Because

density is not used for this species, we simply assumed 69 sea lions could be taken on any given day of pile driving. Therefore, 69 California sea lion /day × 17 days = 1,173 California sea lion takes.

Finally, we included a small amount of take by Level A harassment for harbor seals and harbor porpoise in case animals go undetected before Kitsap Transit can shut down pile driving. For both species, we assumed up to three animals could come closer than the Level A harassment distance generated by the user spreadsheet each day of pile driving (total of 12 days). We authorized 36 Level A harassment takes of harbor seals and harbor porpoise assuming three animals of each species could enter the Level A harassment zone during pile driving based on previous monitoring and sightability; however, the likelihood of those animals actually experiencing PTS is very low because the distances represent long exposure durations. The amount of authorized take, by harassment type, incidental to 17 days of pile driving is provided in Table 8.

Table 8. Authorized Take, by Species, Incidental to Pile Driving.

Species	Level A	Level B	Total Take	Percent of Stock (%)
Harbor seal	36[1]	306	342	22
Steller sea lion	0	10	10	0.01
California sea lion	0	1,173	1,173	0.4
Harbor porpoise	36[1]	126	162	1.4

[1] Assuming three harbor seals or harbor porpoise could enter the Level A harassment zone during 12 days of pile driving.

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, and impact on operations.

Mitigation for Marine Mammals and their Habitat

Kitsap Transit is required to implement a number of mitigation measures designed to minimize the impacts of the project on marine mammals and their habitat. Below is a description of these measures.

For in-water heavy machinery work (e.g., barges, tug boats), a minimum 10 m shutdown zone shall be implemented. If a marine mammal comes within 10 m of such operations,

operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.

Kitsap Transit shall shut down pile driving if marine mammals are observed within or approaching the shut down zones identified in Table 9.

Table 9. Shutdown Zones to avoid heavy equipment injury, Level A harassment, or Level B harassment.

Species	Shutdown Zones (m)				
	Impact 12"	Impact 24"	Vibratory 12"	Vibratory 24"	Vibratory Removal
Humpback whale	140	1,850	2,160	10,000	4,620
Gray whale					
Killer whale					
Harbor porpoise	160	875	15	60	30
Harbor seal	70	395	10[1]	25	10
Steller sea lion	10[1]	30		10[1]	10[1]
California sea lion					
[1]A minimum 10 m shutdown zone is required to avoid potential injury from equipment.					

Pre-activity monitoring shall take place from 30 minutes prior to initiation of pile driving activity and post-activity monitoring shall continue through 30 minutes post-completion of pile driving activity. Pile driving may commence at the end of the 30-minute pre-activity monitoring period, provided observers have determined that the shutdown zone (see Table 6) is clear of marine mammals, which includes delaying start of pile driving activities if a marine mammal is sighted in the shutdown zone. 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).

If a marine mammal approaches or enters the shutdown zone during activities or pre-activity monitoring, all pile driving activities at that location shall be halted or delayed, respectively. If pile driving is halted or delayed due to the presence of a marine mammal, the

activity may not resume or commence until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal. 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 thirty minutes.

Kitsap Transit shall use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. Soft start shall 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.

If a species for which authorization has not been granted (including humpback whales, gray whales, and killer whales), or a species for which authorization has been granted but the authorized takes are met, is observed approaching or within the Level B harassment isopleth (Table 6 and 9), pile driving and removal activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or the observation time period has elapsed.

Kitsap Transit shall use a bubble curtain during impact pile driving. Kitsap Transit has indicated they would operate the bubble curtain such that it will distribute bubbles for the full depth of the water column and the full circumference of the pile during impact pile driving, and the lowest bubble ring will be weighted to ensure contact with the substrate for the full circumference of the ring (pers. comm., S. Mahugh to J. Daly, June 11, 2018). We note the estimated source levels used to calculate harassment zones did not consider any reduction in noise from use of this bubble curtain (*i.e.*, source levels are unattenuated estimates).

Kitsap Transit shall access the Orca Network website each morning prior to in-water construction activities and if pile removal or installation ceases for more than two hours. If marine mammals for which take is not authorized (*e.g.*, killer whales, humpback whales, gray whales) are observed and on a path towards the Level B harassment zone, pile driving shall be delayed until animals are confirmed outside of and on a path away from the Level B harassment zone or if one hour passes with no subsequent sightings.

Kitsap Transit shall implement the use of best management practices (*e.g.*, erosion and sediment control, spill prevention and control) to minimize impacts to marine mammal habitat.

Based on our evaluation of the applicant's planned measures, NMFS has determined that the prescribed 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 in the proposed action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

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

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

For all pile driving activities, at least two protected species observers (PSOs) shall be on duty. One PSO shall be stationed at the on-shore vantage point at the outer portion of the pier to monitor and implement shutdown or delay procedures, when applicable, through communication with the equipment operator. The other PSO shall be stationed at the Waterman Point Dock. If conditions exceed a Beaufort level 3, , a third boat-based observer shall be employed during pile driving.

Monitoring of pile driving shall be conducted by qualified PSOs (see below), who shall have no other assigned tasks during monitoring periods. Kitsap Transit shall adhere to the following conditions when selecting observers:

- Independent, dedicated PSOs shall be used (*i.e.*, not construction personnel);
- At least one PSO must have prior experience working as a marine mammal observer during construction activities;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience; and
- The Kitsap Transit shall submit PSO CVs for approval by NMFS.

Kitsap Transit shall ensure that observers have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols.
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

Kitsap Transit is also required to submit an annual report summarizing their monitoring efforts, number of animals taken, any implementation of mitigation measures (*e.g.*, shut downs) and abide by reporting requirements contained within the IHA.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Pile driving activities associated with the Annapolis Ferry Terminal Project, as described previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take of four species of marine mammals, in the form of Level B harassment (behavioral disturbance) from underwater sounds generated from pile driving. Although unlikely, we have also authorized a small amount of Level A harassment for harbor seals and harbor porpoise and considered it in our analysis. The degree of harassment is expected to be minimized through implementation of the required mitigation measures—use of the bubble

curtain for impact driving steel piles, soft start (for impact driving), and shutdown zones. Typically, given sufficient notice through use of soft start, marine mammals are expected to move away from a sound source that is annoying prior to its becoming potentially injurious or resulting in more severe behavioral reactions. Environmental conditions in inland waters are expected to generally be good, with calm sea states, and we expect conditions would allow a high marine mammal detection capability, enabling a high rate of success. No serious injury or mortality is authorized.

We anticipate individuals exposed to pile driving noise generated at the Annapolis Ferry Terminal will, predominately, simply move away from the sound source and be temporarily displaced from the areas of pile driving, and that a small number of harbor seals and harbor porpoise may incur a small degree of PTS. The pile driving activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted in the Puget Sound region, which have taken place with no known long-term adverse consequences. No pupping or breeding areas are present within the action area. Further, animals are likely somewhat habituated to noise-generating human activity given the proximity to Seattle-Bremerton and Port Orchard ferry lanes, recent construction at NBK Bremerton and the Manette Bridge (both of which involved pile driving), and general recreational, commercial and military vessel traffic. Monitoring reports from the Manette Bridge and NBK Bremerton demonstrate no discernable individual or population level impacts from similar pile driving activities.

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

- No mortality is anticipated or authorized;

- The anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior;
- Any injury incurred would consist of small degree of PTS;
- There is no significant habitat within the industrialized project areas, including known areas or features of special significance for foraging or reproduction; and
- The required mitigation measures reduce the effects of the specified activity to the level of least practicable adverse impact.

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 planned monitoring and mitigation measures, NMFS finds that the total marine mammal take from the proposed 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 Section 101(a)(5)(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.

We propose to authorize incidental take of four marine mammal stocks. The total amount of taking proposed for authorization is less than 1.5 percent of the stock of Steller sea lions, California sea lions, and harbor porpoise and 22 percent of the harbor seal stock (see Table 8).

We note that harbor seals takes likely represent multiple exposures of a fewer number of individuals; therefore, the percentage of the stock taken under this authorization is likely less than 22 percent. The amount of take authorized is considered relatively small percentages and we find are small numbers of marine mammals relative to the estimated overall population abundances for those stocks.

Based on the analysis contained herein of the proposed activity (including the prescribed 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

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

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 West Coast Region (WCR) Protected Resources Division Office, whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is expected or authorized from this activity. On April 5, 2018, NMFS WCR issued a Biological Opinion to the Federal Transit Administration concluding the project is not likely to adversely affect Southern Resident killer whales and the Western North Pacific and Central American humpback whale distinct population segments (DPSs). Therefore, NMFS determined that formal consultation under section 7 of the ESA is not required for this action.

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 incidental harassment authorization) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in CE B4 of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Authorization

As a result of these determinations, NMFS has issued an IHA to Kitsap Transit for the harassment of small numbers of marine mammals incidental to construction activities related to the Annapolis Ferry Dock Project, Puget Sound, Washington, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: July 5, 2018.

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Donna S. Wieting,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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