on both the RFA section 610 notice and this notice will inform NMFS' regulatory reviews required under relevant Executive Orders, including E.O 13771, ''Reducing Regulation and Controlling Regulatory Costs,'' and E.O. 13777, ''Enforcing the Regulatory Reform Agenda.''

Finally, comments related to statutory changes will not be considered as part of this notice; however, NMFS and/or NOS will take them into account in the future if needed.

Dated: June 30, 2017.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

[FR Doc. 2017–14167 Filed 7–6–17; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XF522

Mid-Atlantic Fishery Management Council (MAFMC); Meeting

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

ACTION: Notice; public meeting.

SUMMARY: The Mid-Atlantic Fishery Management Council's (MAFMC's) Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC) will hold a public meeting.

DATES: The meeting will be held on Monday, July 24, 2017, from 1 p.m. to 5 p.m. For agenda details, see **SUPPLEMENTARY INFORMATION.**

ADDRESSES: The meeting will be held via webinar with a telephone-only connection option. Details on webinar registration and telephone-only connection details will be available at: *http://www.mafmc.org.*

Council address: Mid-Atlantic Fishery Management Council, 800 N. State Street, Suite 201, Dover, DE 19901; telephone: (302) 674–2331; *www.mafmc.org.*

FOR FURTHER INFORMATION CONTACT: Christopher M. Moore, Ph.D., Executive Director, Mid-Atlantic Fishery Management Council, telephone: (302) 526–5255.

SUPPLEMENTARY INFORMATION: The Summer Flounder, Scup, and Black Sea Bass Monitoring Committee will meet from 1 p.m. to 5 p.m. to review and discuss previously implemented 2018 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs) for these three species and the Monitoring Committee may also recommend potential 2019 ACLs and ACTs for scup. The Monitoring Committee may consider recommending changes to the implemented 2018 ACLs and ACTs and other management measures as necessary. Meeting materials will be posted to *http://www.mafmc.org/* prior to the meeting.

Although non-emergency issues not contained in this agenda may come before this group for discussion, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically identified in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, provided the public has been notified of the intent to take final action to address the emergency.

Special Accommodations

The meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to M. Jan Saunders at the Mid-Atlantic Council Office (302) 526–5251 at least 5 days prior to the meeting date.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: July 3, 2017.

Tracey L. Thompson,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2017–14268 Filed 7–6–17; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XF250

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Seattle Multimodal Construction Project in Washington State

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 we have issued an incidental harassment authorization (IHA) to Washington State Department of Transportation (WSDOT) to take small numbers of marine mammals, by harassment, incidental to Seattle Multimodal Construction Project in Washington State.

DATES: This authorization is effective from August 1, 2017, through July 31, 2018.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as the issued IHA, may be obtained online at: *www.nmfs.noaa.gov/pr/permits/incidental/construction.htm.* 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 to allow, upon request by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified area, the incidental, but not intentional, taking of small numbers of marine mammals, provided that certain findings are made and the necessary prescriptions are established.

The incidental taking of small numbers of marine mammals shall be allowed if NMFS (through authority delegated by the Secretary) finds that the total taking by the specified activity during the specified time period will (i) have a negligible impact on the species or stock(s) and (ii) not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). Further, the permissible methods of taking, as well as the other means of effecting the least practicable adverse impact on the species or stock and its habitat (*i.e.,* mitigation) must be prescribed. Last, requirements pertaining to the monitoring and reporting of such taking must be set forth.

Where there is the potential for serious injury or death, the allowance of incidental taking requires promulgation of regulations under MMPA section 101(a)(5)(A). Subsequently, a Letter (or Letters) of Authorization may be issued as governed by the prescriptions established in such regulations, provided that the level of taking will be consistent with the findings made for the total taking allowable under the specific regulations. Under MMPA section 101(a)(5)(D), NMFS may authorize incidental taking by harassment only (*i.e.,* no serious injury

or mortality), for periods of not more than one year, pursuant to requirements and conditions contained within an IHA. The promulgation of regulations or issuance of IHAs (with their associated prescribed mitigation, monitoring, and reporting) requires notice and opportunity for public comment.

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.

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).

National Environmental Policy Act (NEPA)

Issuance of an MMPA 101(a)(5) authorization requires compliance with the National Environmental Policy Act.

NMFS determined the issuance of the IHA is consistent with categories of activities identified in CE B4 (issuance of incidental harassment authorizations under section 101(a)(5)(A) and (D) of the MMPA for which no serious injury or mortality is anticipated) of the Companion Manual for NAO 216–6A and we have not identified any extraordinary circumstances listed in Chapter 4 of the Companion Manual for NAO 216–6A that would preclude this categorical exclusion.

Summary of Request

On July 28, 2016, WSDOT submitted a request to NMFS requesting an IHA for the harassment of small numbers of 11 marine mammal species incidental to construction associated with the Seattle Multimodal Project at Colman Dock, Seattle, Washington, between August 1, 2017 and July 31, 2018. NMFS initially determined the IHA application was complete on September 1, 2016. However, WSDOT notified NMFS in November 2016 that the scope of its activities had changed. WSDOT stated that instead of using vibratory hammers for the majority of in-water pile driving and using impact hammer for proofing, it would be required to use impact hammers to drive a large number of piles completely due to sediment conditions at Colman Dock. On March 2, 2017, WSDOT submitted a revised IHA application with updated project description. NMFS determined that the revised IHA application was complete on March 3, 2017.

In the IHA issued to WSDOT, NMFS authorized the Level A and Level B harassment of the following seven marine mammal species/stocks: Harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), killer whale (*Orcinus orca*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), and Dall's porpoise (*P. dalli*).

Description of Specified Activities

Overview

WSDOT is proposing to preserve the Seattle Ferry Terminal at Colman Dock. The project will reconfigure the dock while maintaining approximately the same vehicle holding capacity as current conditions. The reconfiguration would increase total permanent overwater coverage (OWC) by about 5,400 square feet (ft^2) (about 1.7 percent more than existing overwater coverage at the site), due to the new walkway from the King County Passenger Only Ferry (POF) facility to Alaskan Way and new stairways and elevators from the POF to the upper level of the terminal. The additional 5,400 ft^2 will be mitigated by removing a portion of Pier 48, a condemned timber structure.

The project will remove the northern timber trestle and replace a portion of it with a new concrete trestle. The area from Marion Street to the north edge of the property will not be rebuilt and will become, after demolition, a new area of open water. A section of fill contained behind a bulkhead underneath the northeast section of the dock will also be removed.

WSDOT will construct a new steel and concrete trestle from Columbia Street northward to Marion Street. Construction of the reconfigured dock will narrow (reduce) the OWC along the shoreline (at the landward edge) by 180 linear feet at the north end of the site, while 30 linear feet of new trestle would be constructed along the shoreline at the south end of the site. The net reduction of OWC in the nearshore zone is 150 linear feet.

The purpose of the Seattle Multimodal Project at Colman Dock is to preserve the transportation function of an aging, deteriorating and seismically deficient facility to continue providing safe and reliable service. The project will also address existing safety concerns related to conflicts between vehicles and pedestrian traffic and operational inefficiencies.

Details of the WSDOT's construction activities are provided in the IHA application and in the **Federal Register** notice for the proposed IHA (82 FR 15497; March 29, 2017).

Dates and Duration

Due to NMFS and the U.S. Fish and Wildlife Service (USFWS) in-water work timing restrictions to protect Endangered Species Act (ESA) listed salmonids, planned WSDOT in-water construction at this location is limited each year to July 16 through February 15. For this project, in-water construction is planned to take place between August 1, 2017 and February 15, 2018.

The total worst-case time for pile installation and removal is expected to be 83 working days (Table 1).

- Vibratory driving of each of the 101 24-inch (in) steel pile will take approximately 20 minutes, with a maximum of 16 piles installed per day over 7 days.
- Vibratory removal of 103 temporary 24-in diameter steel piles will take approximately 20 minutes per pile, with maximum 16 piles removed per day over 8 days.
- Impact driving (3,000 strikes per pile) of 14 30-in and 201 36-in diameter steel piles will take approximately 45 minutes per pile, with maximum 8 piles per day for a total of 28 days.
- Vibratory driving of 17 30- and 205 36-in diameter steel piles will take 45 minutes per pile, with maximum 8 piles per day over a total of 29 days.
- Vibratory removal of 4-in timber piles will take approximately 15 minutes per pile, with approximately 20 piles removed per day for 11 days.

TABLE 1—SUMMARY OF IN-WATER PILE DRIVING DURATIONS

Method	Pile type	Pile size (inch)	Pile number	Time to vibratory drive per pile/ strikes to impact drive per pile	Duration (days)
Vibratory removal	Timber	14	215	900 seconds	11
Vibratory removal	Steel	24	103	1,200 seconds	8

TABLE 1—SUMMARY OF IN-WATER PILE DRIVING DURATIONS—Continued

Method	Pile type	Pile size (inch)	Pile number	Time to vibratory drive per pile/ strikes to impact drive per pile	Duration (days)
Vibratory driving	Steel	24	101	1,200 seconds	7
Vibratory driving	Steel	30	17	1,200 seconds	3
Vibratory driving	Steel	36	205	1,200 seconds	26
Impact driving	Steel	30	14	3,000 strikes	2
Impact driving	Steel	36	201	3,000 strikes	26
Total			856		83

Specified Geographic Region

The proposed activities will occur at the Seattle Ferry Terminal at Colman Dock, located in the City of Seattle, Washington (see Figure 1–2 of the IHA application).

Detailed Description of In-Water Pile Driving Associated With Seattle Multimodal Project

The proposed project has two elements involving noise production that may affect marine mammals: Vibratory hammer driving and removal, and impact hammer driving.

Details of pile driving activities are provided below:

- The 14-in timber piles will be removed with a vibratory hammer (Table 1).
- The 24-in temporary piles will be installed and removed with a vibratory hammer (no proofing) (Table 1).
- Some of the permanent 30- and 36-in steel piles would be installed with a vibratory hammer, and some would be installed with impact hammer (Table 1).

Details of the in-water impact pile driving and vibratory pile driving and removal activities are provided in the **Federal Register** notice for the proposed IHA (82 FR 15497; March 29, 2017). No changes are made since the proposed IHA was published.

Comments and Responses

A notice of NMFS' proposal to issue an IHA was published in the **Federal Register** on March 29, 2017 (82 FR 15497). During the 30-day public comment period, NMFS received a comment letter from the Marine Mammal Commission (Commission). No other comments were received. Specific comments and responses are provided below.

Comment 1: The Commission noted that several typographic and analytical errors in the **Federal Register** notice for the proposed IHA. These errors include: (1) Level B harassment for Steller sea lion and Dall's porpoise should be 116 and 143, instead of 114 and 137, respectively; (2) daily maximum number of observed harbor seal and California sea lion in the project vicinity should be 13 and 47, respectively. This would result the estimated Level A and Level B takes of harbor seals to be 364 and 715, respectively; the estimated Level B take of California sea lion to be 3,901; and (3) The most recent harbor porpoise density of 0.69 animal/square kilometer (km^2) from Jefferson *et al.* (2016) should be used to calculate harbor porpoise takes.

Response: NMFS agrees with the Commission's assessment and made corrections to these errors. Specifically, (1) The estimated Level B takes of Steller sea lion and Dall's porpoise are corrected to 116 and 143, respectively; (2) Used corrected daily maximum number of observed harbor seal and California sea lions to calculate estimated takes, which resulted Level A and Level B takes of harbor seals to be 364 and 715 animals, respectively; and Level B take of California sea lion to be 3,901 animals; and (3) The most recent harbor porpoise density of 0.69 animal/km^2 from Jefferson *et al.* (2016) was used to correct harbor porpoise takes, which result estimated 233 Level A and 2,056 Level B takes. All these corrections are included in this document in the Estimated Takes section. The increased takes do not affect our initial analysis of negligible impact determination and small number conclusion as discussed later in this document.

Comment 2: The Commission states that it is concerned regarding NMFS appropriateness of the manner in which Level A harassment zones are estimated. The Commission points out that for impact driving of 30- and 36-in piles using three hammers concurrently, the Level A harassment zones for both low- and high-frequency cetaceans were estimated to be much greater (1.85 and 2.84 km, respectively) than the Level B harassment zone (1.20 km). The Commission recommends that NMFS consult with both internal and external scientists and acousticians to determine the relevant accumulation time that could result Level A harassment based on associated permanent threshold shift (PTS) from cumulative sound exposure levels (SEL_{cum}).

Response: NMFS understands the Commission's concern and is continuing working to improve Level A harassment zone estimation based on realistic noise propagation models and energy accumulation scheme. At current, Level A harassment zones are based on exposure of SEL_{cum} over a period of one working day's pile driving duration or instantaneous peak sound pressure level (SPL), while Level B harassment zones are based on instantaneous root-mean-squared SPL that contains 90 percent of acoustic energy. The difference in the metrics between SEL and SPL in assessing Level A and Level B harassments is the notion that prolonged exposure of intense noise could lead to PTS if the animal chooses to stay within the injury zone. The process of impact assessments will continue to evolve as more scientific data become available.

Description of Marine Mammals in the Area of Specified Activities

The marine mammal species under NMFS jurisdiction that have the potential to occur in the proposed construction area include Pacific harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), northern elephant seal (*Mirounga angustirostris*), Steller sea lion (*Eumetopias jubatus*), killer whale (*Orcinus orca*), long-beaked common dolphin (*Delphis capensis*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), harbor porpoise (*Phocoena phocoena*), and Dall's porpoise (*P. dalli*). A list of marine mammals that have the potential to occur in the vicinity of the action and their legal status under the MMPA and ESA are provided in Table 2. Among these species, northern elephant seal, minke whale, and long-beaked common dolphin are extralimital in the proposed project area. NMFS does not consider take is likely to occur for these species. Therefore, these species are not discussed further in this document.

TABLE 2—MARINE MAMMAL SPECIES POTENTIALLY PRESENT IN REGION OF ACTIVITY

Species	ESA status	MMPA status	Occurrence	Abundance
Harbor Seal	Not listed	Non-depleted	Frequent	Unk
California Sea Lion	Not listed	Non-depleted	Frequent	296,750
Northern Elephant Seal	Not listed	Non-depleted	Extralimital	179,000
Steller Sea Lion (eastern DPS)	Not listed	Non-depleted	Rare	71,256
Harbor Porpoise	Not listed	Non-depleted	Frequent	11,233
Dall's Porpoise	Not listed	Non-depleted	Occasional	25,750
Killer Whale (Southern Resident)	Endangered	Depleted	Occasional	78
Killer Whale (West Coast transient)	Not listed	Non-depleted	Occasional	243
Long-beaked Common Dolphin	Not listed	Non-depleted	Extralimital	101,305
Gray Whale	Not listed	Non-depleted	Occasional	20,990
Humpback Whale	Endangered	Depleted	Rare	1,918
Minke Whale	Not listed	Non-depleted	Extralimital	636

General information on the marine mammal species found in Washington coastal waters can be found in Caretta *et al.* (2016), which is available online at: *http://www.nmfs.noaa.gov/pr/sars/pdf/pacific2015_final.pdf.* Refer to that document for information on these species. Specific information concerning these species in the vicinity of the proposed action area is provided in detail in the WSDOT's IHA application and in the **Federal Register** notice for the proposed IHA (82 FR 15497; March 29, 2017).

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The ''Estimated Take'' section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The ''Negligible Impact Analyses and Determination'' section will consider the content of this section, the ''Estimated Take by Incidental Harassment'' section, and the ''Mitigation'' section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms derived using auditory evoked potentials, anatomical modeling, and other data, NMFS (2016) designated five ''marine mammal hearing groups'' for marine mammals and estimate the lower and upper frequencies of hearing of the groups. The marine mammal groups and the associated frequencies are indicated below (though animals are less sensitive to sounds at the outer edge of their functional range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their hearing range):

- Low frequency cetaceans (13 species of mysticetes): Functional hearing is estimated to occur between approximately 7 hertz (Hz) and 35 kilohertz (kHz);
- Mid-frequency cetaceans (32 species of dolphins, seven species of larger toothed whales, and 19 species of beaked and bottlenose whales): Functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High frequency cetaceans (eight species of true porpoises, seven species of river dolphins, Kogia, the franciscana, and four species of cephalorhynchids): Functional hearing is estimated to occur between approximately 275 Hz and 160 kHz;
- Phocid pinnipeds in Water: Functional hearing is estimated to occur between approximately 50 Hz and 86 kHz; and
- Otariid pinnipeds in Water: Functional hearing is estimated to occur between approximately 60 Hz and 39 kHz.

As mentioned previously in this document, eight marine mammal species (five cetacean and three pinniped species) are likely to occur in the vicinity of the Seattle pile driving/removal area. Of the five cetacean species, two belong to the low-frequency cetacean group (gray and humpback whales), one is a mid-frequency cetacean (killer whale), and two high-frequency cetacean (harbor and Dall's porpoises). One species of pinniped is phocid (harbor seal), and two species of pinniped are otariid (California and Steller sea lions). A species' functional hearing group is a consideration when we analyze the effects of exposure to sound on marine mammals.

The WSDOT's Seattle Colman ferry terminal construction work using in-water pile driving and pile removal could adversely affect marine mammal species and stocks by exposing them to elevated noise levels in the vicinity of the activity area.

Exposure to high intensity sound for a sufficient duration may result in auditory effects such as a noise-induced threshold shift—an increase in the auditory threshold after exposure to noise (Finneran *et al.,* 2005). Factors that influence the amount of threshold shift include the amplitude, duration, frequency content, temporal pattern, and energy distribution of noise exposure. The magnitude of hearing threshold shift normally decreases over time following cessation of the noise exposure. The amount of threshold shift just after exposure is the initial threshold shift. If the threshold shift eventually returns to zero (*i.e.,* the threshold returns to the pre-exposure value), it is a temporary threshold shift (TTS) (Southall *et al.,* 2007).

Threshold Shift (noise-induced loss of hearing)—When animals exhibit reduced hearing sensitivity (*i.e.,* sounds must be louder for an animal to detect them) following exposure to an intense sound or sound for long duration, it is referred to as a noise-induced threshold shift (TS). An animal can experience TTS or permanent threshold shift (PTS). TTS can last from minutes or hours to days (*i.e.,* there is complete recovery), can occur in specific frequency ranges (*i.e.,* an animal might only have a temporary loss of hearing sensitivity between the frequencies of 1 and 10 kHz), and can be of varying amounts (for example, an animal's hearing sensitivity might be reduced initially by only 6 decibel (dB) or reduced by 30 dB). PTS is permanent, but some recovery is possible. PTS can also occur in a specific frequency range and amount as mentioned above for TTS.

For cetaceans, published data are limited to the captive bottlenose

dolphin, beluga, harbor porpoise, and Yangtze finless porpoise (Finneran *et al.,* 2000, 2002, 2003, 2005, 2007, 2010a, 2010b; Finneran and Schlundt, 2010; Lucke *et al.,* 2009; Mooney *et al.,* 2009a, 2009b; Popov *et al.,* 2011a, 2011b; Kastelein *et al.,* 2012a; Schlundt *et al.,* 2000; Nachtigall *et al.,* 2003, 2004). For pinnipeds in water, data are limited to measurements of TTS in harbor seals, an elephant seal, and California sea lions (Kastak *et al.,* 1999, 2005; Kastelein *et al.,* 2012b).

Lucke *et al.* (2009) found a TS of a harbor porpoise after exposing it to airgun noise with a received sound pressure level (SPL) at 200.2 dB (peak-to-peak) re: 1 micropascal (μPa), which corresponds to a sound exposure level of 164.5 dB re: 1 μPa^2 s after integrating exposure. NMFS currently uses the root-mean-square (rms) of received SPL at 180 dB and 190 dB re: 1 μPa as the threshold above which PTS could occur for cetaceans and pinnipeds, respectively. Because the airgun noise is a broadband impulse, one cannot directly determine the equivalent of rms SPL from the reported peak-to-peak SPLs. However, applying a conservative conversion factor of 16 dB for broadband signals from seismic surveys (McCauley, *et al.,* 2000) to correct for the difference between peak-to-peak levels reported in Lucke *et al.* (2009) and rms SPLs, the rms SPL for TTS would be approximately 184 dB re: 1 μPa, and the received levels associated with PTS (Level A harassment) would be higher. However, NMFS recognizes that TTS of harbor porpoises is lower than other cetacean species empirically tested (Finneran & Schlundt 2010; Finneran *et al.,* 2002; Kastelein and Jennings 2012).

Marine mammal hearing plays a critical role in communication with conspecifics, and interpretation of environmental cues for purposes such as predator avoidance and prey capture. Depending on the degree (elevation of threshold in dB), duration (*i.e.,* recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious (similar to those discussed in auditory masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that occurs during a time where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during time when communication is critical for successful mother/calf interactions could have more serious impacts. Also, depending on the degree and frequency range, the effects of PTS on an animal could range in severity, although it is considered generally more serious because it is a permanent condition. Of note, reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.,* 2007), so one can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

In addition, chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark *et al.,* 2009). Acoustic masking is when other noises such as from human sources interfere with animal detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired from maximizing their performance fitness in survival and reproduction.

Masking occurs at the frequency band that the animals utilize. Therefore, since noise generated from vibratory pile driving activity is mostly concentrated at low frequency ranges, it may have less effect on high frequency echolocation sounds by odontocetes (toothed whales). However, lower frequency man-made noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. It may also affect communication signals when they occur near the noise band and thus reduce the communication space of animals (*e.g.,* Clark *et al.,* 2009) and cause increased stress levels (*e.g.,* Foote *et al.,* 2004; Holt *et al.,* 2009).

Unlike TS, masking, which can occur over large temporal and spatial scales, can potentially affect the species at population, community, or even ecosystem levels, as well as individual levels. Masking affects both senders and receivers of the signals and could have long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels have increased by as much as 20 dB (more than three times in terms of SPL) in the world's ocean from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). For WSDOT's Seattle Colman Ferry Terminal construction activities, noises from vibratory pile driving and pile removal contribute to the elevated ambient noise levels in the project area, thus increasing potential for or severity of masking. Baseline ambient noise levels in the vicinity of project area are high due to ongoing shipping, construction and other activities in the Puget Sound.

Finally, marine mammals' exposure to certain sounds could lead to behavioral disturbance (Richardson *et al.,* 1995), such as: Changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where noise sources are located; and/or flight responses (*e.g.,* pinnipeds flushing into water from haulouts or rookeries).

The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography) and is also difficult to predict (Southall *et al.,* 2007). Currently NMFS uses a received level of 160 dB re 1 μPa (rms) to predict the onset of behavioral harassment from impulse noises (such as impact pile driving), and 120 dB re 1 μPa (rms) for continuous noises (such as vibratory pile driving). For the WSDOT's Seattle Colman Ferry Terminal construction activities, both of these noise levels are considered for effects analysis because WSDOT plans to use both impact and vibratory pile driving, as well as vibratory pile removal.

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification could be biologically significant if the change affects growth, survival, and/or reproduction, which depends on the severity, duration, and context of the effects.

Potential Effects on Marine Mammal Habitat

The primary potential impacts to marine mammal habitat are associated with elevated sound levels produced by pile driving and removal associated with marine mammal prey species. However, other potential impacts to the surrounding habitat from physical disturbance are also possible. These potential effects are discussed below.

SPLs from impact pile driving have the potential to injure or kill fish in the

immediate area. These few isolated fish mortality events are not anticipated to have a substantial effect on prey species population or their availability as a food resource for marine mammals.

Studies also suggest that larger fish are generally less susceptible to death or injury than small fish. Moreover, elongated forms that are round in cross section are less at risk than deep-bodied forms. Orientation of fish relative to the shock wave may also affect the extent of injury. Open water pelagic fish (*e.g.,* mackerel) seem to be less affected than reef fishes. The results of most studies are dependent upon specific biological, environmental, explosive, and data recording factors.

The huge variation in fish populations, including numbers, species, sizes, and orientation and range from the detonation point, makes it very difficult to accurately predict mortalities at any specific site of detonation. Most fish species experience a large number of natural mortalities, especially during early life-stages, and any small level of mortality caused by the WSDOT's impact pile driving will likely be insignificant to the population as a whole.

For non-impulsive sound such as that of vibratory pile driving, experiments have shown that fish can sense both the strength and direction of sound (Hawkins 1981). Primary factors determining whether a fish can sense a sound signal, and potentially react to it, are the frequency of the signal and the strength of the signal in relation to the natural background noise level.

The level of sound at which a fish will react or alter its behavior is usually well above the detection level. Fish have been found to react to sounds when the sound level increased to about 20 dB above the detection level of 120 dB (Ona 1988); however, the response threshold can depend on the time of year and the fish's physiological condition (Engas *et al.,* 1993).

During construction activity at Colman Dock, only a small fraction of the available habitat would be ensonified at any given time. Disturbance to fish species would be short-term and fish would return to their pre-disturbance behavior once the pile driving activity ceases. Thus, the proposed construction would have little, if any, impact on the abilities of marine mammals to feed in the area where construction work is planned.

Finally, the time of the proposed construction activity would avoid the spawning season of the ESA-listed salmonid species between March and July.

Short-term turbidity is a water quality effect of most in-water work, including pile driving.

Cetaceans are not expected to be close enough to the Colman terminal to experience turbidity, and any pinnipeds will be transiting the terminal area and could avoid localized areas of turbidity. Therefore, the impact from increased turbidity levels is expected to be discountable to marine mammals.

For these reasons, WSDOT's proposed Seattle Multimodal construction at Colman Dock is not expected to have adverse effects to marine mammal habitat in the area.

Estimated Take

This section includes an estimate of the number of incidental ''takes'' likely to occur pursuant to this IHA, which will inform both NMFS' consideration of whether the number of takes is ''small'' and the negligible impact determination.

Harassment is the only means of take expected to result from these activities. 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).

As described previously in the section Potential Effects of Specified Activities on Marine Mammals and their Habitat, no incidental take is anticipated to result from effects on prey species or as a result of turbidity. Level B Harassment is expected to occur as discussed below and is authorized in the numbers identified below.

As described below, a small number of takes by Level A Harassment are authorized, as the calculation show that Level A takes could occur.

The death of a marine mammal is also a type of incidental take. However, as described previously, no mortality is anticipated or authorized to result from this activity.

Basis for Takes

Take estimates are based on average marine mammal density in the project area multiplied by the area size of ensonified zones within which received noise levels exceed certain thresholds (*i.e.,* Level A and/or Level B harassment) from specific activities, then multiplied by the total number of days such activities would occur. Certain adjustments were made for marine mammals whose local abundance are known through long-term monitoring efforts. Therefore, their local abundance data are used for take calculation instead of general animal density (see below).

Basis for Threshold Calculation

As discussed above, in-water pile removal and pile driving (vibratory and impact) generate loud noises that could potentially harass marine mammals in the vicinity of WSDOT's proposed Seattle Multimodal Project at Colman Dock.

Under the NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Guidance), dual criteria are used to assess marine mammal auditory injury (Level A harassment) as a result of noise exposure (NMFS 2016). The dual criteria under the Guidance provide onset thresholds in instantaneous peak SPLs (L_{pk}) as well as 24-hr cumulative sound exposure levels (SEL_{cum} or L_E) that could cause PTS to marine mammals of different hearing groups. The peak SPL is the highest positive value of the noise field, log transformed to dB in reference to 1 µPa.

$$L_{pk} = \max\left\{10\log_{10}\left(\frac{p(t)}{p_{ref}}\right)^2\right\} \quad (1)$$

where $p(t)$ is acoustic pressure in pascal or micropascal, and p_{ref} is reference acoustic pressure equal to 1 µPa.

The cumulative SEL is the total sound exposure over the entire duration of a given day's pile driving activity, specifically, pile driving occurring within a 24-hr period.

$$L_E = 10\log_{10}\left(\int_{t_1}^{t_2}\left(\frac{p(t)}{p_{ref}}\right)^2 dt\right) \quad (2)$$

where $p(t)$ is acoustic pressure in pascal or micropascal, p_{ref} is reference acoustic pressure equals to 1 µPa, t_1 marks the beginning of the time, and t_2 the end of time.

For onset of Level B harassment, NMFS continues to use the root-mean-square (rms) sound pressure level (SPL_{rms}) at 120 dB re 1 µPa and 160 dB re 1 µPa as the received levels from non-impulse (vibratory pile driving and removal) and impulse sources (impact pile driving) underwater, respectively. The SPL_{rms} for pulses (such as those from impact pile driving) should contain 90 percent of the pulse energy, and is calculated by

$$SPL_{rms} = 10\log_{10}\left(\frac{1}{T}\int_{t_1}^{t_2}\left(\frac{p(t)}{p_{ref}}\right)^2 dt\right) \quad (3)$$

where $p(t)$ is acoustic pressure in pascal or micropascal, p_{ref} is reference acoustic pressure equals to 1 µPa, t_1 marks the beginning of the time, and t_2 the end of time. In the case of an impulse noise, t_1 marks the time of 5 percent of the total energy window, and t_2 the time of 95 percent of the total energy window.

Table 3 summarizes the current NMFS marine mammal take criteria.

TABLE 3—CURRENT ACOUSTIC EXPOSURE CRITERIA FOR NON-EXPLOSIVE SOUND UNDERWATER

Hearing group	PTS onset thresholds		Behavioral thresholds	
	Impulsive	Non-impulsive	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	$L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB	$L_{E,LF,24h}$: 199 dB.		
Mid-Frequency (MF) Cetaceans	$L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB	$L_{E,MF,24h}$: 198 dB.		
High-Frequency (HF) Cetaceans	$L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB	$L_{E,HF,24h}$: 173 dB	$L_{rms,flat}$: 160 dB	$L_{rms,flat}$: 120 dB.
Phocid Pinnipeds (PW) (Underwater)	$L_{pk,flat}$: 218 dB; $L_{E,PW,24h}$: 185 dB	$L_{E,PW,24h}$: 201 dB.		
Otariid Pinnipeds (OW) (Underwater)	$L_{pk,flat}$: 232 dB; $L_{E,OW,24h}$: 203 dB	$L_{E,OW,24h}$: 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.

Sound Levels and Acoustic Modeling for the Proposed Construction Activity

Source Levels

The project includes vibratory removal of 14-in timber piles, vibratory driving and removal of 24-in steel piles, vibratory driving of 30- and 36-in steel piles, and impact pile driving of 30- and 36-in steel piles. In February of 2016, WSDOT conducted a test pile project at Colman Dock in order to gather data to select the appropriate piles for the project. The test pile project measured impact pile driving of 24- and 36-in steel piles. The measured results from the project are used here to provide source levels for the prediction of isopleths ensonified over thresholds for the Seattle project. The results show that the SPL_{rms} for impact pile driving of 36-in steel pile is 189 dB re 1 µPa at 14 m from the pile (WSDOT 2016b). This value is also used for impact driving of the 30-in steel piles, which is a precautionary approach.

Source level of vibratory pile driving of 36-in steel piles is based on test pile driving at Port Townsend in 2010 (Laughlin 2011). Recordings of vibratory pile driving were made at a distance of 10 m from the pile. The results show that the SPL_{rms} for vibratory pile driving of 36-in steel pile was 177 dB re 1 µPa (WSDOT 2016a).

Up to three pile installation crews may be active during the day within the project footprint. Each crew will use one vibratory and one impact hammer, and it is possible that more than 1 hammer, up to 3 impact and/or vibratory hammers, could be conducted concurrently for driving the 24-, 30-, and 36-in piles. Overlapping noise fields created by multiple hammer use are handled differently for impact and vibratory hammers. When more than one impact hammer is being used close

enough to another impact hammer, the cumulative acoustic energy is accounted for by including all hammer strikes. When more than one vibratory hammer is being used close enough to another vibratory hammer to create overlapping noise fields, additional sound levels are added to account for the overlap, creating a larger zone of influence (ZOI). A simplified nomogram method (Kinsler *et al.,* 2000) is proposed to account for the addition of noise source levels for multiple vibratory hammers, as shown in Table 4. Using this method, the source levels of 24-, 30-, and 36-in piles during vibratory pile driving are adjusted to 182 dB re 1 µPa (at 10 m).

TABLE 4—MULTIPLE SOUND LEVEL ADDITION

When two sound levels differ by	Add the following to the higher level (dB)
0–1 dB	3
2–3 dB	2
4–9 dB	1
>10 dB	0

For vibratory pile removal, vibratory pile driving data were used as proxies because we conservatively consider noises from pile removal would be the same as those from pile driving.

The source level of vibratory removal of 14-in timber piles were based on measurements conducted at the Port Townsend Ferry Terminal during vibratory removal of a 12-in timber pile by WSDOT (Laughlin 2011). The recorded source level is 152 dB re 1 µPa at 16 m from the pile. In the absence of spectral data for timber pile vibratory driving, the weighting factor adjustment (WFA) recommended by NMFS acoustic guidance (NMFS 2016) was used to determine these zones.

These source levels are used to compute the Level A ensonified zones and to estimate the Level B harassment zones. For Level A harassment zones, zones calculated using cumulative SEL are all larger than those calculated using SPL_{peak}, therefore, only zones based on cumulative SEL for Level A harassment are used.

Estimating Injury Zones

Calculation and modeling of applicable ensonified zones are based on source measurements of comparable types and sizes of piles driven by different methods (impact vs. vibratory hammers) either during the Colman test pile driving or at a different location within the Puget Sound. As mentioned earlier, isopleths for injury zones are based on cumulative SEL (L_E) criteria.

For peak SPL (L_{pk}), distances to marine mammal injury thresholds were calculated using a simple geometric spreading model using a transmission loss coefficient of 15:

$$SL_{Measure} = EL + 15\log_{10}(R - D_{Measure}) \quad (4)$$

where $SL_{Measure}$ is the measured source level in dB re 1 µPa, *EL* is the specific received level of threshold, $D_{Measure}$ is the distance (m) from the source where measurements were taken, and *R* is the distance (radius) of the isopleth to the source in meters.

For cumulative SEL (L_E), distances to marine mammal exposure thresholds were computed using spectral modeling that incorporates frequency specific absorption. First, representative pile driving sounds recorded during test pile driving with impact and vibratory hammers were used to generate power spectral densities (PSDs), which describe the distribution of power into frequency components composing that sound, in 1-Hz bins. Parserval's theorem, which states that the sum of the square of a function is equal to the sum of the square of its transform, was applied to ensure that all energies within a strike (for impact pile driving) or a given period of time (for vibratory pile driving) were captured through the fast Fourier transform, an algorithm that converts the signal from its original domain (in this case, time series) to a representation in frequency domain. For impact pile driving, broadband PSDs were generated from SPL_{rms} time series of a total of 270 strikes with a time window that contains 90 percent of pulse energy. For vibratory pile driving, broadband PSDs were generated from a series of continuous 1-second SEL. Broadband PSDs were then adjusted based on weighting functions of marine mammal hearing groups (Finneran 2016) by using the weighting function as a band-pass filter. For impact pile driving, cumulative exposures (E_{sum}) were computed by multiplying the single rms pressure squared by rms pulse duration for the specific strike, then by the number of strikes (provided in Table 1) required to drive one pile, then by the number of piles to be driven in a given day, as shown in the equation below:

$$E_{sum} = \sum_{i=1}^{N} p_{rms,i}^2 \tau_i N_s \quad (5)$$

where $p_{rms,i}$ is the rms pressure, τ is the rms pulse duration for the specific strike, N_s is the anticipated number of strikes (provided in Table 1) needed to install one pile, and *N* is the number of total piles to be installed.

For vibratory pile driving, cumulative exposures were computed by summing 1-second noise exposure by the duration needed to drive on pile (provided in Table 1), then by the number of piles to be driven in a given day, as shown in the equation below:

$$E_{sum} = \sum_{i=1}^{N} E_{1s,i} \Delta t_i \quad (6)$$

where E_{1s} is the 1-second noise exposure, and Δt is the duration (provided in Table 1) need to install 1 pile by vibratory piling.

Frequency-specific transmission losses, *TL*(*f*), were then computed using practical spreading along with frequency-specific absorption coefficients that were computed with nominal seawater properties (*i.e.,* salinity = 35 psu, pH = 8.0) at 15°C at the surface by

$$TL(f) = 15\log_{10}(R) + \alpha(f)R/1000 \quad (7)$$

where $a(f)$ is dB/km, and R is the distance (radius) of the specific isopleth to the source in meters. For broadband sources such as those from pile driving, the transmission loss is the summation of the frequency-specific results.

Approach to Estimate Behavioral Zones

As mentioned earlier, isopleths to Level B behavioral zones are based on root-mean-square SPL (SPL_{rms}) that are specific for impulse (impact pile driving) and non-impulse (vibratory pile driving) sources. Distances to marine mammal behavior thresholds were calculated using a simple geometric spreading equation as shown in Equation (4).

For Level B harassment zones from vibratory pile driving of 30-in and 36-in piles, the ensonified zones are calculated based on practical spreading of back-calculated source level of 36-in pile driving adjusted for 3 hammers operating concurrently by adding 5 dB. The results show that the 120 dB re 1 µPa isopleth is at 13.6 km. For Level B harassment zone from vibratory pile driving of 24-in and 36-in piles, WSDOT conducted site measurements during Seattle test pile driving project using 24-in and 36-in steel piles. The results show that underwater noise cannot be detected at a distance of 5 km (3 mi) and 6.88 km (4.3 mi) for the 24-in and 36-in steel piles, respectively. Since this measurement was based on pile driving using 1 hammer, the Level B harassment zone for 24- and 36-in steel pile is adjusted by factoring in a 5 dB difference (see above) using the following equation, based on the inverse law of acoustic propagation (*i.e.,* dB difference in transmission loss is the inverse of distance difference in logarithm):

$$\left|dB_{difference}\right| = 15 \times \log_{10}\left(\frac{R_{3\text{-hammer}}}{R_{1\text{-hammer}}}\right) \quad (8)$$

where $dB_{difference}$ is the 5 dB difference, $R_{3\text{-hammer}}$ is the distance from the pile where piling noise is no longer audible, and $R_{1\text{-hammer}}$ is the measured distance from the pile where piling noise is no longer audible, which is 5 km for the 24-in steel pile and 6.88 km for the 36-in steel pile.

The result show that when using 3 vibratory hammers concurrently, the distance from the pile to where pile noise is no longer audible is 11 km for the 24-in steel pile and 14.8 km for the 36-in steel pile. Since the landmass intercepts the water at 13.6 km, this distance is used as the Level B harassment distance for the 36-in steel pile.

A summary of the measured and modeled harassment zones is provided in Table 5.

TABLE 5—DISTANCES TO HARASSMENT ZONES

Pile type, size & pile driving method	Injury zone (m)					Behavior zone (m)
	LF cetacean	MF cetacean	HF cetacean	Phocid	Otariid	
Vibratory 14″ timber	8	0.7	11.9	4.9	0.3	2,175
Vibratory 24″ steel	255	65	1,365	115	10	11,000
Vibratory 30″ & 36″ steel	285	65	1,455	125	10	13,600
Impact 30″ & 36″ steel	1,845	75	2,835	465	35	1,200

Estimated Takes From Proposed Construction Activity

Incidental take is estimated for each species by estimating the likelihood of a marine mammal being present within a Level A or Level B harassment zone during active pile driving or removal. The Level A calculation includes a duration component, along with an assumption (which can lead to overestimates in some cases) that animals within the zone stay in that area for the whole duration of the pile driving activity within a day. For all marine mammal species except harbor seals and California sea lions, estimated takes are calculated based on ensonified area for a specific pile driving activity multiplied by the marine mammal density in the action area, multiplied by the number of pile driving (or removal) days. Marine mammal density data for all animals except harbor porpoise are from the U.S. Navy Marine Species Density Database (Navy 2015). Harbor porpoise density is based on a recent study by Jefferson *et al.* (2016) for the Seattle area near the Colman Dock. Harbor seal and California sea lion takes are based on observations near Seattle, since these data provide the best information on distribution and presence of these species that are often associated with nearby haulouts (see below). A summary of marine mammal density, days and Level A and Level B harassment areas from different pile driving and removal activities is provided in Table 6.

TABLE 6—SUMMARY OF MARINE MAMMAL DENSITY, DAYS AND LEVEL A AND LEVEL B ENSONIFIED AREAS FROM DIFFERENT PILE DRIVING AND REMOVAL ACTIVITIES

Species	Density (km-2)	Vibratory 14-in timber	Vibratory 24-in steel	Vibratory 30-in steel	Vibratory 36-in steel	Impact 30-in steel	Impact 36-in steel
Days		11	15	3	26	2	26
Level A Areas (m^2)							
Pacific harbor seal	1.219000	50	41,548	49,087	49,087	394,075	394,075
California sea lion	0.12660	0.126	314	314	314	3,849	3,849
Steller sea lion	0.036800	0.126	314	314	314	3,849	3,849
Killer whale, transient	0.002373	50	13,273	13,273	13,273	17,672	17,672
Killer whale, Southern Resident	0.020240	50	13,273	13,273	13,273	17,672	17,672
Gray whale	0.000510	154	153,311	189,384	189,384	4,129,836	4,129,836
Humpback whale	0.00070	154	153,311	189,384	189,384	4,129,836	4,129,836
Harbor porpoise	0.156000	13,273	2,547,906	2,678,940	2,678,940	8,190,639	8,190,639
Dall's porpoise	0.047976	13,273	2,547,906	2,678,940	2,678,940	8,190,639	8,190,639
Level B Areas (m^2)							
Pacific harbor seal	1.219000	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
California sea lion	0.12660	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Steller sea lion	0.036800	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Killer whale, transient	0.020240	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Killer whale, Southern Resident	0.002373	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Gray whale	0.000510	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Humpback whale	0.00070	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Harbor porpoise	0.69	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124
Dall's porpoise	0.047976	5,419,792	58,338,838	74,290,934	74,290,934	1,926,124	1,926,124

The Level A take total was further adjusted by subtracting animals expected to occur within the exclusion zone, where pile driving activities are suspended when an animal is observed in or approaching the zone (see Mitigation section). Further, the number of Level B takes was adjusted to exclude those already counted for Level A takes.

The harbor seal take estimate is based on local seal abundance information off the Seattle area from WSDOT's Seattle Colman test pile project in 2016. Marine mammal visual monitoring during the 10-day period of the project indicates that a maximum of 13 harbor seals were observed in the general area of the Colman Dock project (WSDOT 2012). Based on a total of 83 pile-driving days for the WSDOT Seattle Colman Dock project, it is estimated that up to 1,079 harbor seals could be exposed to noise levels associated with ''take.'' Since 28 days would involve impact pile driving of 30-in and 36-in steel piles with Level A zones beyond shutdown zones (465 m vs 160 m shutdown zone), we consider that 364 harbor seals exposed during these 28 days would experience Level A harassment.

The California sea lion take estimate is based on local sea lion abundance information from the Seattle's Elliott Bay Sea Wall Project (City of Seattle 2014). Marine mammal visual monitoring during the Sea Wall Project indicates that up to 47 sea lions were observed in the general area of the Colman Dock project at any given time (City of Seattle 2014). Based on a total of 83 pile driving days for the WSDOT Seattle Colman Dock project, it is estimated that up to 3,901 California sea lions could be exposed to noise levels associated with ''take''. Since the Level A zones of otariids are all very small (<35m, Table 5), we do not consider it likely that any sea lions would be taken by Level A harassment. Therefore, all California sea lion takes estimated here are expected to be taken by Level B harassment.

A summary of estimated marine mammal takes is listed in Table 7.

TABLE 7—ESTIMATED NUMBERS OF MARINE MAMMALS THAT MAY BE EXPOSED TO RECEIVED NOISE LEVELS THAT CAUSE LEVEL A OR LEVEL B HARASSMENT

Species	Estimated Level A take	Estimated Level B take	Estimated total take	Abundance	Percentage
Pacific harbor seal	364	715	1,079	11,036	9.77
California sea lion	0	3,901	3,901	296,750	1.31
Steller sea lion	0	116	116	71,562	0.16
Killer whale, transient	0	7	7	243	3
Killer whale, Southern Resident	0	0	0	78	0
Gray whale	1	15	16	20,990	0.08
Humpback whale	0	0	0	1,918	0
Harbor porpoise	233	2,056	2,289	11,233	20.37
Dall's porpoise	16	137	153	25,750	0.59

Mitigation

Under section 101(a)(5)(D) of the MMPA, NMFS shall prescribe the ''permissible methods of taking by harassment 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 subsistence uses.''

To ensure that the ''least practicable adverse impact'' will be achieved, NMFS evaluates mitigation measures in consideration of the following factors in relation to one another: 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, their habitat, and their availability for subsistence uses (latter where relevant); the proven or likely efficacy of the measures; and the practicability of the measures for applicant implementation.

For WSDOT's proposed Seattle Multimodal Project at Colman Dock, WSDOT worked with NMFS and prescribed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity. The primary purposes of these mitigation measures are to minimize sound levels from the activities, to monitor marine mammals within designated ZOIs and exclusion zones corresponding to NMFS' current Level B and Level A harassment thresholds and, to implement shut-down measures for certain marine mammal species when they are detected approaching the exclusion zones or actual take numbers are approaching the authorized take numbers.

Time Restriction

Work would occur only during daylight hours, when visual monitoring of marine mammals can be conducted. In addition, all in-water construction will be limited to the period between August 1, 2017, and February 15, 2018.

Use of Noise Attenuation Devices

To reduce impact on marine mammals, WSDOT shall use a marine pile driving energy attenuator (*i.e.,* air bubble curtain system), or other equally effective sound attenuation method (*e.g.,* dewatered cofferdam) for all impact pile driving.

Establishing and Monitoring Level A, Level B Harassment Zones, and Exclusion Zones

Before the commencement of in-water construction activities, which include impact pile driving and vibratory pile driving and pile removal, WSDOT shall establish Level A harassment zones where received underwater SPLs or SEL_{cum} could cause PTS (see above).

WSDOT shall also establish Level B harassment zones where received underwater SPLs are higher than 160 dB_{rms} and 120 dB_{rms} re 1 µPa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and pile removal), respectively.

WSDOT shall establish a maximum 160-m Level A exclusion zone for all marine mammals. For Level A harassment zones that are smaller than 160 m from the source, WSDOT shall establish exclusion zones that correspond to the estimated Level A harassment distances, but shall not be less than 10 m.

A summary of exclusion zones is provided in Tables 8a and 8b.

TABLE 8a—EXCLUSION ZONES FOR VARIOUS PILE DRIVING ACTIVITIES AND MARINE MAMMAL HEARING GROUPS (FOR NON-ESA-LISTED SPECIES)

Pile type, size & pile driving method	Exclusion zone (m)				
	LF cetacean	MF cetacean	HF cetacean	Phocid	Otariid
14″ timber pile, vibratory	10	10	12	10	10
24″ steel pile, vibratory	255	65	160	115	10
30″ & 36″ steel pile, vibratory	285	65	160	125	10
30″ & 36″ steel pile, impact	500	75	160	160	35

TABLE 8b—EXCLUSION ZONES FOR VARIOUS PILE DRIVING ACTIVITIES AND ESA-LISTED MARINE MAMMAL SPECIES

Pile type, size & pile driving method	Exclusion zone (m)	
	Humpback whale	Southern resident killer whale
14″ timber pile, vibratory	2,175	2,175
24″ steel pile, vibratory	11,000	11,000
30″ & 36″ steel pile, vibratory	13,600	13,600
30″ & 36″ steel pile, impact	1,845	1,200

NMFS-approved protected species observers (PSO) shall conduct an initial survey of the exclusion zones to ensure that no marine mammals are seen within the zones before impact pile driving of a pile segment begins. If marine mammals are found within the exclusion zone, pile driving of the segment will be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor will wait 30 minutes. If no marine mammals are seen by the observer in that time it can be assumed that the animal has moved beyond the exclusion zone.

If pile driving of a segment ceases for 30 minutes or more and a marine mammal is sighted within the designated exclusion zone prior to commencement of pile driving, the observer(s) must notify the pile driving operator (or other authorized individual) immediately and continue to monitor the exclusion zone. Operations may not resume until the marine mammal has exited the exclusion zone or 30 minutes have elapsed since the last sighting.

Soft Start

A ''soft-start'' technique is intended to allow marine mammals to vacate the area before the impact pile driver reaches full power. Whenever there has been downtime of 30 minutes or more without impact pile driving, the contractor will initiate the driving with ramp-up procedures described below.

Soft start for impact hammers requires contractors to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period, then two subsequent three-strike sets. Each day, WSDOT will use the soft-start technique at the beginning of impact pile driving, or if pile driving has ceased for more than 30 minutes.

Shutdown Measures

WSDOT shall implement shutdown measures if a marine mammal is detected within an exclusion zone or is about to enter an exclusion zone listed in Tables 8a and 8b.

WSDOT shall also implement shutdown measures if southern resident killer whales or humpback whales are sighted within the vicinity of the project area and are approaching the Level B harassment zone (ZOI) during in-water construction activities.

If a killer whale approaches the ZOI during pile driving or removal, and it is unknown whether it is a Southern Resident killer whale or a transient killer whale, it shall be assumed to be a Southern Resident killer whale and WSDOT shall implement the shutdown measure.

If a Southern Resident killer whale, an unidentified killer whale, or a humpback whale enters the ZOI undetected, in-water pile driving or pile removal shall be suspended until the whale exits the ZOI to avoid further Level B harassment.

Further, WSDOT shall implement shutdown measures if the number of authorized takes for any particular species reaches the limit under the IHA and if such marine mammals are sighted within the vicinity of the project area and are approaching the Level B harassment zone during in-water construction activities.

Coordination With Local Marine Mammal Research Network

Prior to the start of pile driving for the day, the Orca Network and/or Center for Whale Research will be contacted by WSDOT to find out the location of the nearest marine mammal sightings. The Orca Sightings Network consists of a list of over 600 (and growing) residents, scientists, and government agency personnel in the U.S. and Canada. Sightings are called or emailed into the Orca Network and immediately distributed to other sighting networks including: The NMFS Northwest Fisheries Science Center, the Center for Whale Research, Cascadia Research, the Whale Museum Hotline and the British Columbia Sightings Network.

Sightings information collected by the Orca Network includes detection by hydrophone. The SeaSound Remote Sensing Network is a system of interconnected hydrophones installed in the marine environment of Haro Strait (west side of San Juan Island) to study orca communication, in-water noise, bottom fish ecology and local climatic conditions. A hydrophone at the Port Townsend Marine Science Center measures average in-water sound levels and automatically detects unusual sounds. These passive acoustic devices allow researchers to hear when different marine mammals come into the region. This acoustic network, combined with the volunteer (incidental) visual sighting network allows researchers to document presence and location of various marine mammal species.

With this level of coordination in the region of activity, WSDOT will be able to get real-time information on the presence or absence of whales before starting any pile driving.

Based on our evaluation of the mitigation measures described above, NMFS has determined that the prescribed mitigation measures provide the means 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.

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 to both compliance and 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 action area (*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.

Monitoring Measures

WSDOT shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its Seattle Multimodal Project. The PSOs will observe and collect data on marine mammals in and around the project area for 30 minutes before, during, and for 30 minutes after all pile removal and pile installation work. NMFS-approved PSOs shall meet the following requirements:

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

2. At least one observer must have prior experience working as an observer;

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

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

5. NMFS will require submission and approval of observer CVs.

Monitoring of marine mammals around the construction site shall be

conducted using high-quality binoculars (*e.g.,* Zeiss, 10 x 42 power). Due to the different sizes of ZOIs from different pile sizes, several different ZOIs and different monitoring protocols corresponding to a specific pile size will be established.

- During 14-in timber pile removal, two land-based PSOs will monitor the exclusion zones and Level B harassment zone.
- During impact pile driving of 30-in and 36-in steel piles, 4 land-based PSOs will monitor the Level A and Level B harassment zones.
- During vibratory pile driving of 24-in, 30-in, and 36-in steel piles, 5 land-based PSOs and two vessel-based PSOs on ferries will monitor the Level A and Level B harassment zones.
- If the sound source verification (SSV) measurements show that Level B harassment distance for the vibratory pile driving of 24-in, 30-in, and 36-in steel piles is less than 10 km, monitoring efforts listed above can be reduced to 4 land-based PSOs and one vessel-based PSO on a ferry.
- If the sound source verification (SSV) measurements show that Level B harassment distance for the vibratory pile driving of 24-in, 30-in, and 36-in steel piles is less than 10 km, 4 land-based PSOs and one vessel-based PSO on a ferry will monitor the Level A and level B harassment zones.

Locations of the land-based PSOs and routes of monitoring vessels are shown in WSDOT's Marine Mammal Monitoring Plan, which is available online at *www.nmfs.noaa.gov/pr/permits/incidental/construction.htm.*

To verify the required monitoring distance, the exclusion zones and ZOIs will be determined by using a range finder or hand-held global positioning system device.

In addition, WSDOT shall conduct SSV measurements when conduction vibratory pile driving of 24-in, 30-in, and 36-in steel piles using more than one hammer.

Reporting Measures

WSDOT will be required to submit a draft monitoring report within 90 days after completion of the construction work or the expiration of the IHA, whichever comes earlier. This report would detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. NMFS would have an opportunity to provide comments on the report, and if NMFS has comments, WSDOT would address the comments and submit a final report to NMFS within 30 days after receiving NMFS' comments.

In addition, NMFS would require WSDOT to notify NMFS' Office of Protected Resources and NMFS' West Coast Stranding Coordinator within 48 hours of sighting an injured or dead marine mammal in the construction site. WSDOT shall provide NMFS and the Stranding Network with the species or description of the animal(s), the condition of the animal(s) (including carcass condition, if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that WSDOT finds an injured or dead marine mammal that is not in the construction area, WSDOT would report the same information as listed above to NMFS within 48 hours of sighting.

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 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, etc.), as well as effects on habitat, the status of the affected stocks, and the likely effectiveness of the mitigation. 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 these analyses 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).

To avoid repetition, this introductory discussion of our analyses applies to all the species listed in Table 7, given that the anticipated effects of WSDOT's Seattle Multimodal Project at Colman Dock activities involving pile driving and pile removal on marine mammals are expected to be relatively similar in nature. There is no information about the nature or severity of the impacts, or the size, status, or structure of any species or stock that would lead to a different analysis by species for this activity, or else species-specific factors would be identified and analyzed.

Although a few marine mammal species (364 harbor seals, 1 gray whale, 233 harbor porpoises, and 16 Dall's porpoise) are estimated to experience Level A harassment in the form of PTS if they stay within the Level A harassment zone during the entire pile driving for the day, the degree of injury is expected to be mild and is not likely to affect the reproduction or survival of the individual animals. It is expected that, if hearing impairments occurs, most likely the affected animal would lose a few dB in its hearing sensitivity, which in most cases is not likely to affect its survival and recruitment. Hearing impairment that occur for these individual animals would be limited to the dominant frequency of the noise sources, *i.e.,* in the low-frequency region below 2 kHz. Therefore, the degree of PTS is not likely to affect the echolocation performance of the two porpoise species, which use frequencies mostly above 100 kHz. Nevertheless, for all marine mammal species, it is known that in general animals avoid areas where sound levels could cause hearing impairment. Therefore, it is not likely that an animal would stay in an area with intense noise that could cause severe levels of hearing damage. In addition, even if an animal receives a TTS, the TTS would be a one-time event from the exposure, making it unlikely that the TTS would evolve into PTS. Furthermore, Level A take estimates are based on the assumption that the animals are randomly distributed in the project area and would not avoid intense noise levels that could cause TTS or PTS. In reality, animals tend to avoid areas where noise levels are high (Richardson *et al.* 1995).

For these species and the rest of the three marine mammal species, takes that are anticipated and authorized are expected to be limited to short-term Level B harassment (behavioral and TTS). Marine mammals present in the vicinity of the action area and taken by Level B harassment would most likely show overt brief disturbance (startle reaction) and avoidance of the area from elevated noise levels during pile driving and pile removal and the implosion noise. A few marine mammals could experience TTS if they occur within the Level B TTS ZOI. However, as discussed earlier in this document, TTS is a

temporary loss of hearing sensitivity when exposed to loud sound, and the hearing threshold is expected to recover completely within minutes to hours. Therefore, it is not considered an injury.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat, as analyzed in detail in the ''Anticipated Effects on Marine Mammal Habitat'' section. There is no ESA designated critical area in the vicinity of the Seattle Multimodal Project at Colman Dock area. The project activities would not permanently modify existing marine mammal habitat. The activities may kill some fish and cause other fish to leave the area temporarily, thus impacting marine mammals' foraging opportunities in a limited portion of the foraging range. However, 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. Therefore, given the consideration of potential impacts to marine mammal prey species and their physical environment, WSDOT's proposed construction activity at Colman Dock would not adversely affect marine mammal habitat.

- Injury—only 4 species of marine mammals would experience Level A affects in the form of mild PTS, which is expected to be of small degree.
- Behavioral disturbance—seven species/stocks of marine mammals would experience behavioral disturbance and TTS from the WSDOT's Seattle Colman Dock project. However, as discussed earlier, the area to be affected is small and the duration of the project is short. Therefore, the overall impacts are expected to be insignificant.

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 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, NMFS compares the number of individuals anticipated to be taken to the most appropriate estimation of the relevant species or stock size in our determination of whether an authorization would be limited to small numbers of marine mammals.

The takes represent less than 21 percent of all populations or stocks with known abundance potentially impacted (see Table 7 in this document). These take estimates represent the percentage of each species or stock that could be taken by both Level A and Level B harassments. In general, the numbers of marine mammals estimated to be taken are small proportions of the total populations of the affected species or stocks.

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

Unmitigable Adverse Impact Subsistence 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)

Issuance of an MMPA authorization requires compliance with the ESA for any species that are listed or proposed as threatened or endangered.

The MMPA California-Oregon-Washington stock of humpback whale and the Southern Resident stock of killer whale are the only marine mammal species listed under the ESA that could occur in the vicinity of WSDOT's proposed construction projects. Two DPSs of humpback whales, the Mexico DPS and the Central America DPS, are listed as threatened and endangered under the ESA, respectively. NMFS worked with WSDOT to implement shutdown measures in the IHA that would avoid takes of both SR killer whale and humpback whales. Therefore, NMFS determined that no ESA-listed marine mammal species would be affected as a result of WSDOT's Seattle Colman Dock construction project.

Authorization

As a result of these determinations, NMFS has issued an IHA to the Washington State Department of Transportation for conducting ferry terminal construction at Colman Dock in Seattle Washington, provided the previously described mitigation, monitoring, and reporting requirements are incorporated.

Dated: July 3, 2017.

Donna S. Wieting,

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

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ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPPT–2017–0327; FRL–9963–57]

Scopes of the Risk Evaluations To Be Conducted for the First Ten Chemical Substances Under the Toxic Substances Control Act; Notice of Availability

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: As required by the Toxic Substances Control Act (TSCA), which was amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act in June 2016, EPA is announcing the availability of the scope documents for the risk evaluations to be conducted for the first ten (10) chemical substances. Each scope includes the hazards, exposures, conditions of use, and the potentially exposed or susceptible subpopulations the EPA expects to consider in conducting the risk evaluation. EPA is also re-opening existing dockets for the first 10 chemicals to allow for the public to provide additional data or information that could be useful to the Agency in conducting problem formulation, the next step in the process of conducting the risk evaluations for these chemicals.

FOR FURTHER INFORMATION CONTACT:

For technical information contact: Christina Motilall, Risk Assessment Division, Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001; telephone number: (202) 564–1287; email address: *motilall.christina@epa.gov.*

For general information contact: The TSCA-Hotline, ABVI-Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554–1404; email address: *TSCA-Hotline@epa.gov.*

SUPPLEMENTARY INFORMATION: