DEPARTMENT OF COMMERCE

National Institute of Standards and Technology

Manufacturing Extension Partnership Advisory Board

AGENCY: National Institute of Standards and Technology, Commerce.

ACTION: Notice of open meeting.

SUMMARY: The National Institute of Standards and Technology (NIST) announces that the Manufacturing Extension Partnership (MEP) Advisory Board will hold an open meeting on Tuesday, September 20, 2022.

DATES: The meeting will be held on Tuesday, September 20, 2022, from 12:30 p.m. to 6:00 p.m. Central time.

ADDRESSES: The meeting will be held at the InterContinental Chicago Magnificent Mile, 505 Michigan Avenue, Chicago, IL 60611. Please note admittance instructions in the **SUPPLEMENTARY INFORMATION** section below. Interested parties should be sure to check the NIST MEP Advisory Board website for the most up-to-date information at *http://www.nist.gov/mep/about/advisory-board.cfm.*

FOR FURTHER INFORMATION CONTACT: Cheryl L. Gendron, Hollings Manufacturing Extension Partnership Program, National Institute of Standards and Technology, 100 Bureau Drive, Mail Stop 4800, Gaithersburg, Maryland 20899–4800; telephone number (301) 975–2785; email: *cheryl.gendron@nist.gov.*

SUPPLEMENTARY INFORMATION: The MEP Advisory Board is authorized under 15 U.S.C 278k(m), in accordance with the provisions of the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. app. The Hollings Manufacturing Extension Partnership Program (Program) is a unique program consisting of Centers in all 50 states and Puerto Rico with partnerships at the federal, state and local levels. By statute, the MEP Advisory Board provides the NIST Director with: (1) advice on the activities, plans and policies of the Program; (2) assessments of the soundness of the plans and strategies of the Program; and (3) assessments of current performance against the plans of the Program.

Background information on the MEP Advisory Board is available at *http://www.nist.gov/mep/about/advisory-board.cfm.*

Pursuant to the Federal Advisory Committee Act, as amended, 5 U.S.C. app., notice is hereby given that the MEP Advisory Board will hold an open meeting on Tuesday, September 20, 2022, from 12:30 p.m. to 6:00 p.m. Central time. The meeting agenda will include an update on the MEP programmatic operations, as well as provide guidance and advice on current activities related to both the current MEP National Network™ 2017–2022 Strategic Plan and upcoming MEP National Network 2023–2028 Strategic Plan. The agenda may change to accommodate Board business. The final agenda will be posted on the MEP Advisory Board website at *http://www.nist.gov/mep/about/advisory-board.cfm.* Individuals and representatives of organizations who would like to offer comments and suggestions related to the MEP Advisory Board's business are invited to request a place on the agenda. Approximately 15 minutes will be reserved for public comments at the end of the meeting. Speaking times will be assigned on a first-come, first-served basis. The amount of time per speaker will be determined by the number of requests received but is likely to be no more than three to five minutes each. Requests must be submitted by email to *cheryl.gendron@nist.gov* and must be received by September 14, 2022, to be considered. The exact time for public comments will be included in the final agenda that will be posted on the MEP Advisory Board website at *http://www.nist.gov/mep/about/advisory-board.cfm.* Questions from the public will not be considered during this period. Speakers who wish to expand upon their oral statements, those who wished to speak but could not be accommodated on the agenda or those who are/were unable to attend the meeting are invited to submit written statements electronically by email to *cheryl.gendron@nist.gov.*

Admittance Instructions: Anyone wishing to attend the MEP Advisory Board meeting must submit their name, organization, email address and phone number to Cheryl Gendron (*Cheryl.Gendron@nist.gov* or 301–975–2785) no later than Wednesday, September 14, 2022, 5:00 p.m. Eastern time.

Alicia Chambers,

NIST Executive Secretariat.

[FR Doc. 2022–17136 Filed 8–9–22; 8:45 am]

BILLING CODE 3510–13–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XC114]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to In-Water Construction at Two Ferry Facilities on Bainbridge Island, Washington

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

ACTION: Notice; proposed incidental harassment authorization (IHA); request for comments on proposed authorization and possible renewal.

SUMMARY: NMFS has received a request from the Washington State Department of Transportation Ferries Division (WSDOT) for authorization to take marine mammals incidental to two in-water construction projects on Bainbridge Island, Washington: the Bainbridge Island Ferry Terminal Overhead Loading Replacement Project and Eagle Harbor Maintenance Facility Slip F Improvement Project. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an IHA to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, one-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than September 9, 2022.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service and should be submitted via email to *ITP.Fowler@noaa.gov.*

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments, including all attachments, must not exceed a 25-megabyte file size. All comments received are a part of the public record and will generally be posted online at

www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act without change. All personal identifying information (*e.g.,* name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Amy Fowler, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.* In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

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

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

National Environmental Policy Act

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

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

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the IHA request.

Summary of Request

On February 15, 2022, NMFS received a request from WSDOT for an IHA to take marine mammals incidental to the Bainbridge Island Ferry Terminal Overhead Loading Replacement Project (the Bainbridge Project) and Eagle Harbor Maintenance Facility Slip F Improvement Projects (the Eagle Harbor Project) in Bainbridge Island, Washington. The application was deemed adequate and complete on July 25, 2022. WSDOT's request is for take of 12 species of marine mammal by Level B harassment and, for a subset of these species (harbor seal (*Phoca vitulina*), harbor porpoise (*Phocoena phocoena*), and Dall's porpoise (*Phocoenoides dalli*)), Level A harassment. Neither WSDOT nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Proposed Activity

Overview

The Washington State Department of Transportation (WSDOT) Ferries Division (WSF) operates and maintains 19 ferry terminals and one maintenance facility, all of which are located in either Puget Sound or the San Juan Islands. Two projects are proposed to be conducted: replacement of the Bainbridge Island Ferry Terminal overhead loading structure, and improvement of the Eagle Harbor Maintenance Facility Slip F. Both of the projects are located within Eagle Harbor on Bainbridge Island, Washington, would be completed within the same in-water work season, would have overlapping ensonified areas, and use the same datasets to estimate marine mammal takes. Therefore, WSDOT has submitted one application for a single IHA to cover both projects.

The purpose of the Bainbridge Project is to replace the seismically vulnerable timber trestle and fixed steel portions of the overhead loading structure at the Bainbridge Island Ferry Terminal. The purpose of the Eagle Harbor Project is to improve the maintenance efficiency of the facility. The facility has six vessel slips whose purpose is to maintain the Washington State Ferry (WSF) system's vessels.

Dates and Duration

Due to in-water work timing restrictions established by NMFS and the U.S. Army Corps of Engineers, construction in the projects area is limited each year from August 1 through February 15. Both the Bainbridge Project and the Eagle Harbor Project would be constructed during the August 1, 2022 to February 15, 2023 in-water work season. For the Bainbridge Project, in-water construction is expected to occur on up to 57 days (Table 1). For the Eagle Harbor Project, in-water construction is expected to occur on up to 31 days (Table 2).

Specific Geographic Region

Both projects are located within Eagle Harbor on Bainbridge Island, Washington, approximately 9 miles (mi; 14.5 kilometers (km)) west of Seattle, Washington. The Eagle Harbor Maintenance Facility is approximately ¼ mi (0.4 km) southwest of the Bainbridge Island Ferry Terminal. Eagle Harbor contains a mix of commercial docks, public marinas, private docks, and undeveloped waterfront properties. The harbor extends 2 mi (1.2 km) west from the mouth of the harbor, which is approximately 900 feet (ft; 274.3 meters (m)) wide and is bounded by Wing Point to the north and Bill Point to the south. A large underwater sand bar extends to the southeast from Wing Point. Water depths within Eagle Harbor range are up to 50 ft (15.2 m) but outside the harbor, water depths between Bainbridge Island and Seattle can be over 700 ft (213.4 m).

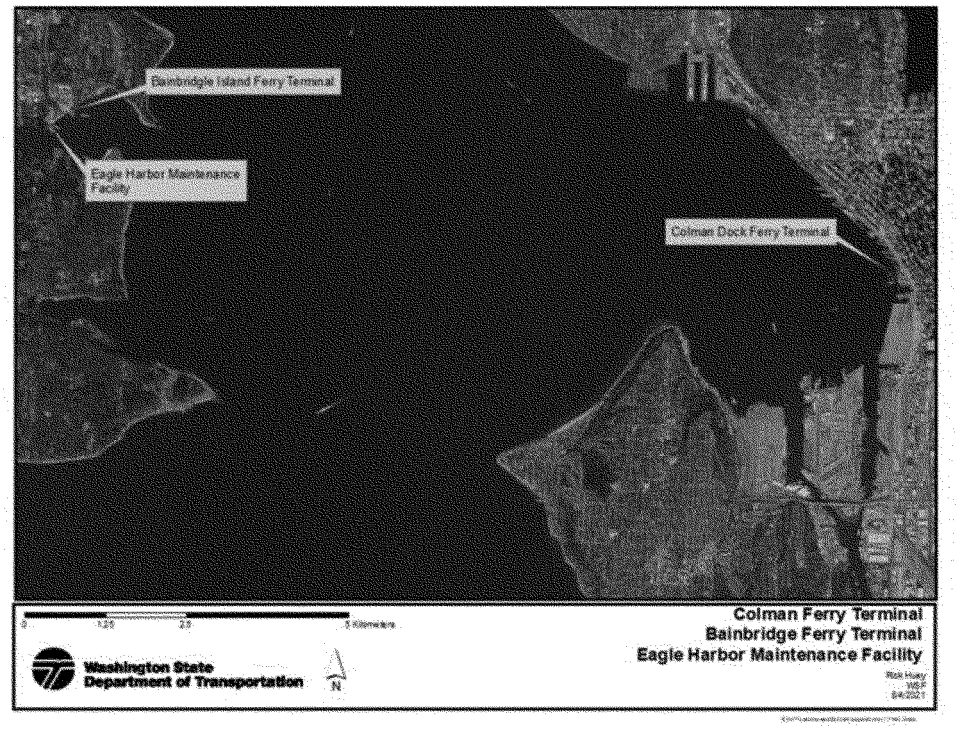

Figure 1. Location of Bainbridge Island Ferry Terminal and Eagle Harbor Maintenance Facility in Puget Sound

Detailed Description of Specific Activity

Bainbridge Project

The existing overhead loading fixed walkway at the Bainbridge Island Ferry Terminal consists of two major components: a timber trestle, constructed in 1972, which is approximately 345 ft (105.2 m) long and supported on timber batter piles; and a steel truss, constructed in 1988, which is approximately 78 ft (23.8 m) long and supported on a concrete shaft at each end. The walkway is elevated approximately 40 ft (12.2 m) above ground.

The proposed project elements for the Bainbridge Project include:

1. *Installation of temporary work platforms:* two temporary work platforms would support construction equipment. A total of 31 24-inch (in) steel pipe piles would support the structures, which would be installed first using a vibratory hammer to within 5 ft (1.5 m) of tip elevation, and then driven with an impact hammer to verify bearing capacity.

2. *Installation of temporary walkway:* a temporary walkway would be constructed to maintain overhead loading operations while the new walkway is constructed. This would allow the inshore portion of the existing walkway to be demolished so the new walkway can be constructed. The offshore portion of the existing walkway would remain to allow passenger loading until the new walkway is completed. The temporary walkway would be supported on four 24-inch diameter steel piles, which would be installed first using a vibratory hammer to within 5 ft (1.5 m) of tip elevation, and then driven with an impact hammer to verify bearing capacity.

3. *Installation of new permanent walkway:* the new walkway would be supported by 14 30-in and 12 36-in steel pipe piles, which would be installed first using a vibratory hammer to within 5 ft (1.5 m) of tip elevation, and then driven with an impact hammer to verify bearing capacity.

4. *Removal of existing overhead loading walkway:* the existing overhead loading walkway, including 76 creosote-treated 12-in timber piles and one 4.5 ft (1.4 m) diameter concrete drill shaft, would be removed. The piles would be removed using a vibratory hammer and the concrete drill shaft would be removed by cutting it with a saw at the mudline.

5. *Removal of temporary walkway and work platform:* after the new walkway is constructed, all piles associated with the temporary walkway and work platform would be removed with a vibratory hammer.

The construction schedule would be coordinated to allow work to occur around ferry boats that may be present in the Bainbridge Island Ferry Terminal slips.

TABLE 1—PROPOSED PILE DRIVING FOR THE BAINBRIDGE PROJECT

Project element	Pile size and type	Install or remove	Method	Number of piles	Duration per pile (minutes)	Piles per day	Duration (days)
Temporary work platform and temporary walkway.	24-in Steel	Install	Vibratory	39	30	4	10
			Impact	39	30	4	10
		Remove	Vibratory	39	30	4	10
New Overhead Loading Structure.	24-in Steel	Install	Vibratory	6	30	2	3
			Impact	6	30	2	3
	30-in Steel	Install	Vibratory	4	30	2	2
			Impact	4	30	2	2
	36-in Steel	Install	Vibratory	12	30	2	6
			Impact	12	30	2	6
Old Overhead Loading Structure Removal.	12-in Timber	Remove	Vibratory	76	15	15	5
Total Temporary Piles Installed and Removed				39			
Total Permanent Piles Installed				26			
Total Timber Piles Removed				76			
Total Duration (days)							57

Eagle Harbor Project

The last seven vessels built for the WSF fleet have evacuation slides on the passenger deck. These require the use of a vehicle drive-on slip to allow changing out these slides. Currently, only two of the six slips are vehicle drive-on slips. This results in delays when more than two vessels are undergoing maintenance. A new vehicle drive-on slip would be constructed to reduce maintenance delays, and provide more flexibility in accomplishing the various maintenance activities on the vessels that is crucial to making the WSF system as reliable as possible.

The proposed project elements for the Eagle Harbor Project include:

1. *Trestle and transfer span:* The vehicle transfer span is the link for vehicles to load and unload from the fixed trestle to the vehicle deck of the ferry vessel. At Eagle Harbor, the existing Slip F gangplank system would be replaced with a new pile supported trestle and a transfer span adjustable with a mechanical system. The new trestle would be approximately 15-ft (4.6 m) wide and 80 ft (24.4 m) long, and will be supported by nine 24-in steel pipe piles and two 36-in steel pipe piles which would each be installed first using a vibratory hammer to within 5 ft (1.5 m) of tip elevation, and then driven with an impact hammer to verify bearing capacity.

2. *Wingwalls and dolphins:* The existing pair of timber dolphins would be replaced with a new pair of steel wingwalls. Two new fixed pile dolphins would be constructed adjacent to the Trask Pier. The wingwalls design would consist of four 36-inch diameter steel reaction piles and two 36-inch diameter fender piles. Two fixed dolphins would be constructed adjacent to the Trask Pier to provide protection to the pier and mooring lines for tie-up. The dolphin design would consist of four 30-inch diameter steel reaction piles and one 36-inch diameter fender pile. Wingwall and dolphin piles would be installed using a vibratory hammer only.

3. *Removal of timber walkway, timber dolphins, and U-float:* the project would also include the removal of a currently existing timber walkway/trestle, four timber pile dolphins, and a U-float. The timber trestle removal includes 52 12-inch diameter timber piles, the four dolphins include a total of 134 12-inch diameter timber piles, and the U-float consists of four 18-inch diameter steel piles, all of which would be removed using a vibratory hammer.

TABLE 2—PROPOSED PILE DRIVING FOR THE EAGLE HARBOR PROJECT

Project element	Pile size and type	Install or remove	Method	Number of piles	Duration per pile (minutes)	Duration (hours)	Rate per day	Duration (days)
Timber Walkway Pile Removal.	12-in Timber	Remove	Vibratory	52	15	13	15	4
Timber Dolphin Removal.	12-in Timber	Remove	Vibratory	134	15	33.5	15	9
Temporary Relocated Float.	18-in Steel	Install	Vibratory	4	30	4	4	1
		Remove		4	30	3	4	1
U-Float Removal	18-in Steel	Remove	Vibratory	4	30	4	4	1
Trestle and Transfer Span.	24-in Steel	Install	Vibratory	9	30	4.5	4	3
			Impact	9	30	4.5	3	3
	36-inSteel	Install	Vibratory	2	30	1	4	1
			Impact	2	30	1	3	1
Wingwall	30-in Steel	Install	Vibratory	8	30	4	4	2
	36-in Steel	Install	Vibratory	4	30	2	4	1

TABLE 2—PROPOSED PILE DRIVING FOR THE EAGLE HARBOR PROJECT—Continued

Project element	Pile size and type	Install or remove	Method	Number of piles	Duration per pile (minutes)	Duration (hours)	Rate per day	Duration (days)
Intermediate Dolphin.	30-in Steel	Install	Vibratory	4	30	2	4	1
	36-in Steel	Install	Vibratory	1	30	5	4	1
Outer Dolphin	30-in Steel	Install	Vibratory	4	30	2	4	1
	36-in Steel	Install	Vibratory	2	30	1	4	1
Total Piles Removed				194				
Total Piles Installed				38				
Total Duration (days)								31

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

Description of Marine Mammals in the Area of Specified Activities

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

Table 3 lists all species or stocks for which take is expected and proposed to be authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific and Alaska SARs. All values presented in Table 3 are the most recent available at the time of publication and are available in the 2020 SARs (Carretta *et al.,* 2021, Muto *et al.,* 2021) and draft 2021 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

TABLE 3—SPECIES LIKELY IMPACTED BY THE SPECIFIED ACTIVITIES

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 N Pacific	-, -, N	26,960 (0.05, 25,849, 2016).	801	131
Family Balaenopteridae (rorquals):						
Minke whale	*Balaenoptera acutorostrata*	California/Oregon/Washington.	-, -, N	915 (0.792, 509, 2018)	4.1	≥0.59
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Long-Beaked Common Dolphin.	*Delphinus capensis*	California	-, -, N	83,379 (0.216, 69,636, 2018).	668	≥29.7
Bottlenose Dolphin	*Tursiops truncatus*	California Coastal	-, -, N	453 (0.06, 346, 2011)	2.7	≥2.0
Pacific White-Sided Dolphin.	*Lagenorhynchus obliquidens*	California/Oregon/Washington.	-, -, N	34,999 (0.222, 29,090, 2018).	279	7
Killer Whale	*Orcinus orca*	West Coast Transient	-, -, N	349 [4] (N/A, 349, 2018)	3.5	0.4
Family Phocoenidae (porpoises):						
Harbor Porpoise	*Phocoena phocoena*	Washington Inland Waters	-, -, N	11,233 (0.37, 8,308, 2015).	66	≥7.2
Dall's Porpoise	*Phocoenoides dalli*	California/Oregon/Washington.	-, -, N	16,498 (0.61, 10,286, 2019).	99	≥0.66

TABLE 3—SPECIES LIKELY IMPACTED BY THE SPECIFIED ACTIVITIES—Continued

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 Carnivora—Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions):						
California Sea Lion	*Zalophus californianus*	U.S.	-, -, N	257,606 (N/A, 233,515, 2014).	14,011	>320
Steller Sea Lion	*Eumetopias jubatus*	Eastern	-, -, N	43,201 [5] (see SAR, 43,201, 2017).	2,592	112
Family Phocidae (earless seals):						
Harbor Seal	*Phoca vitulina*	Washington Northern Inland Waters.	-, -, N	11,036 [6] (UNK, UNK, 1999).	UND	9.8
Northern Elephant Seal	*Mirounga angustirostris*	California Breeding	-, -, N	187,386 (N/A, 85,369, 2013).	5,122	13.7

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

[2] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region.* CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

[3] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike). Annual mortality/serious injury (M/SI) often cannot be determined precisely and is in some cases presented as a minimum value or range.

[4] Based on counts of individual animals identified from photo-identification catalogues. Surveys for abundance estimates of these stocks are conducted infrequently.

[5] Best estimate of pup and non-pup counts, which have not been corrected to account for animals at sea during abundance surveys.

[6] The abundance estimate for this stock is greater than eight years old and is therefore not considered current. PBR is considered undetermined for this stock, 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.

As indicated above, all 12 species (with 12 managed stocks) in Table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. While humpback whales (*Megaptera novaeangliae*) and killer whales from the Southern Resident stock are known to occur in Puget Sound, in consideration of the proposed requirements described in the Proposed Mitigation and Proposed Monitoring and Reporting sections of this notice, WSDOT has determined that take of these species is unlikely to occur and has therefore not requested take of humpback whales or Southern Resident killer whales. NMFS has concurred with this determination and no take of these species is anticipated or proposed to be authorized.

Gray Whale

Gray whales generally spend the summer and fall in Arctic feeding grounds and winter to early spring in Mexican breeding areas. Between October and February, the species migrates south along the U.S. West Coast, returning north between February and July (Carretta *et al.,* 2021). A subpopulation of the Eastern North Pacific stock, referred to as the Pacific Coast Feeding Group (PCFG), remains along the Washington and Oregon coast to feed for extended periods while the rest of the stock continues along their migratory path (Calambokidis *et al.,* 2018). Occurrence of gray whales in Puget Sound has been steadily increasing in recent years and is generally highest between February and May. Most gray whales remain further north in Puget Sound, concentrating in the waters around Whidbey Island, but some venture south, including into Elliott Bay near WSDOT's proposed activities (Orca Network, 2021). During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 4 gray whales were observed, with a maximum of 1 individual observed on a single day.

Biologically Important Areas (BIAs) for feeding gray whales along the coasts of Washington, Oregon, and California have been identified, including northern Puget Sound, Northwestern Washington, and Grays Harbor in Washington, Depoe Bay and Cape Blanco and Orford Reef in Oregon, and Point St. George in California; most of these areas are of importance from late spring through early fall (Calambokidis *et al.,* 2015). BIAs have also been identified for migrating gray whales along the entire coasts of Washington (including the inland waters of Puget Sound), Oregon, and California; although most whales travel within 10 km from shore, the BIAs were extended out to 47 km from the coastline (Calambokidis *et al.,* 2015).

On May 30, 2019, NMFS declared an unusual mortality event (UME) for gray whales after elevated numbers of strandings occurred along the U.S. west coast. As of January 7, 2022, a total of 502 stranded gray whales have been reported, including 256 in the United States (117 in Alaska, 56 in Washington, 12 in Oregon, and 71 in California), 225 in Mexico, and 21 in Canada. Full or partial necropsy examinations were conducted on a subset of the whales. Preliminary findings in several of the whales have shown evidence of emaciation. These findings are not consistent across all of the whales examined, so more research is needed. The UME is ongoing, and NMFS continues to investigate the cause(s). Additional information about the UME is available at *https://www.fisheries.noaa.gov/national/marine-life-distress/2019-2020-gray-whale-unusual-mortality-event-along-west-coast.*

Minke Whale

The International Whaling Commission (IWC) recognizes three stocks of minke whales in the North Pacific: The Sea of Japan/East China Sea, the rest of the western Pacific west of 180° N, and the remainder of the Pacific (Donovan 1991). Minke whales are relatively common in the Bering and Chukchi seas and in the Gulf of Alaska, but are not considered abundant in any other part of the eastern Pacific (Brueggeman *et al.,* 1990). In the far north, minke whales are thought to be migratory, but they are believed to be year-round residents in coastal waters off the west coast of the United States (Dorsey *et al.,* 1990).

Minke whales are reported in Washington inland waters year-round, although few are reported in the winter (*i.e.,* during the anticipated in-water work window for these projects;

Calambokidis and Baird 1994). They are relatively common in the San Juan Islands and Strait of Juan de Fuca (especially around several of the banks in both the central and eastern Strait), but are relatively rare in Puget Sound and the Orca Network has no sighting records of minke whales in the project areas. During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a single minke whale was observed.

Long-Beaked Common Dolphin

Long-beaked common dolphins are commonly found along the U.S. West Coast, from Baja California, Mexico (including the Gulf of California), northward to about central California (Carretta *et al.,* 2020). The Salish Sea is not considered part of their typical range (Carretta *et al.,* 2020), but there have been reports of long-beaked common dolphins in inland waters. Two individual common dolphins were observed in August and September of 2011 (Whale Museum, 2015). The first record of a pod of long-beaked common dolphins in this area came in the summer of 2016. Beginning on June 16, 2016 long-beaked common dolphins were observed near Victoria, B.C. Over the following weeks, a pod of 15 to 20 (including a calf) was observed in central and southern Puget Sound. They were positively identified as long-beaked common dolphins (Orca Network 2016). Two long-beaked common dolphins were observed by Washington State Department of Transportation (WSDOT) marine mammal monitors during construction at Washington State Ferries Multimodal Project at Colman Dock in Seattle during the 2017–18 construction window (WSDOT 2019).

Bottlenose Dolphin

Bottlenose dolphins are distributed worldwide from approximately 45° N to 45° S. Bottlenose dolphins inhabiting west coast U.S. waters are considered to be in either the California coastal stock, which ranges from Mexico to the San Francisco area within approximately 1 kilometer of shore, or the California/Oregon/Washington offshore stock, which is most commonly found along the California coast, northward to about the Oregon border. NMFS offshore surveys from 1991 to 2014 resulted in no sightings during study transects off the Oregon or Washington coasts (Carretta *et al.,* 2019). In September 2017, however, multiple sightings of a bottlenose dolphin throughout the Puget Sound and in Elliott Bay were reported to Cascadia Research Collective and Orca Network. One of the individuals was identified as belonging to the California coastal stock (Cascadia Research Collective, 2017). Bottlenose dolphins are considered rare in Puget Sound but occasional sightings have continued since the initial reports in 2017 (Orca Network, 2021). During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 6 bottlenose dolphins were observed, with a maximum of 2 individuals observed on a single day.

Pacific White-Sided Dolphin

The Pacific white-sided dolphin is found in cool temperate waters of the North Pacific from the southern Gulf of California to Alaska. Across the North Pacific, it appears to have a relatively narrow distribution between 38° N and 47° N (Brownell *et al.,* 1999). In the eastern North Pacific Ocean, the Pacific white-sided dolphin is one of the most common cetacean species, occurring primarily in shelf and slope waters (Green *et al.,* 1993; Barlow 2003, 2010). It is known to occur close to shore in certain regions, including (seasonally) southern California (Brownell *et al.,* 1999). Results of aerial and shipboard surveys strongly suggest seasonal north-south movements of the species between California and Oregon/Washington; the movements apparently are related to oceanographic influences, particularly water temperature (Green *et al.,* 1993; Forney and Barlow 1998; Buchanan *et al.,* 2001). During winter, this species is most abundant in California slope and offshore areas; as northern waters begin to warm in the spring, it appears to move north to slope and offshore waters off Oregon/Washington (Green *et al.,* 1992, 1993; Forney 1994; Forney *et al.,* 1995; Buchanan *et al.,* 2001; Barlow 2003). The highest encounter rates off Oregon and Washington have been reported during March-May in slope and offshore waters (Green *et al.,* 1992). Large groups of Pacific white-sided dolphins have been observed in San Juan Channel (Orca Network 2012), north of Puget Sound, and may rarely occur in Central Puget Sound. During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 2 Pacific white-sided dolphins were observed on one day of construction.

Killer Whale

There are three distinct ecotypes, or forms, of killer whales recognized in the north Pacific: resident, transient, and offshore. The three ecotypes differ morphologically, ecologically, behaviorally, and genetically. Resident killer whales exclusively prey upon fish, with a clear preference for salmon (Ford and Ellis 2006; Hanson *et al.,* 2010; Ford *et al.,* 2016), while transient killer whales exclusively prey upon marine mammals (Caretta *et al.,* 2019). Less is known about offshore killer whales, but they are believed to consume primarily fish, including several species of shark (Dahlheim *et al.,* 2008). Currently, there are eight killer whale stocks recognized in the U.S. Pacific (Carretta *et al.,* 2021; Muto *et al.,* 2021). Of those, individuals from the West Coast Transient stock may occur in the project areas and be taken incidental to WSDOT's proposed activities.

Within Puget Sound, transient killer whales primarily hunt pinnipeds and porpoises, though some groups will occasionally target larger whales. The West Coast Transient stock of killer whales occurs from California through southeast Alaska (Muto *et al.,* 2021). The seasonal movements of transients are largely unpredictable, although there is a tendency to investigate harbor seal haulouts off Vancouver Island more frequently during the pupping season in August and September (Baird 1994; Ford 2014). Transient killer whales have been observed in central Puget Sound in all months (Orca Network 2021). During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 47 transient killer whales were observed, with a maximum of 20 individuals observed on a single day.

Harbor Porpoise

In the eastern North Pacific Ocean, harbor porpoise are found in coastal and inland waters from Point Barrow, along the Alaskan coast, and down the west coast of North America to Point Conception, California (Gaskin 1984). Harbor porpoise are known to occur year-round in the inland trans-boundary waters of Washington and British Columbia, Canada (Osborne *et al.,* 1988), and along the Oregon/Washington coast (Barlow 1988, Barlow *et al.,* 1988, Green *et al.,* 1992). There was a significant decline in harbor porpoise sightings within southern Puget Sound between the 1940s and 1990s but sightings have increased seasonally in the last 10 years (Carretta *et al.,* 2019). Annual winter aerial surveys conducted by the Washington Department of Fish and Wildlife from 1995 to 2015 revealed an increasing trend in harbor porpoise in Washington

inland waters, including the return of harbor porpoise to Puget Sound. The data suggest that harbor porpoise were already present in Juan de Fuca, Georgia Straits, and the San Juan Islands from the mid-1990s to mid-2000s, and then expanded into Puget Sound and Hood Canal from the mid-2000s to 2015, areas they had used historically but abandoned. Changes in fishery-related entanglement was suspected as the cause of their previous decline and more recent recovery, including a return to Puget Sound (Evenson *et al.,* 2016). Seasonal surveys conducted in spring, summer, and fall 2013–2015 in Puget Sound and Hood Canal documented substantial numbers of harbor porpoise in Puget Sound. Observed porpoise numbers were twice as high in spring as in fall or summer, indicating a seasonal shift in distribution of harbor porpoise (Smultea 2015). The reasons for the seasonal shift and for the increase in sightings is unknown. During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 413 harbor porpoises were observed, with a maximum of 40 individuals observed on a single day.

Dall's Porpoise

Dall's porpoises are endemic to temperate waters of the North Pacific Ocean. Off the U.S. West Coast, they are commonly seen in shelf, slope, and offshore waters (Morejohn 1979). Sighting patterns from aerial and shipboard surveys conducted in California, Oregon, and Washington (Green *et al.,* 1992, 1993; Forney and Barlow 1998; Barlow 2016) suggest that north-south movement between these states occurs as oceanographic conditions change, both on seasonal and inter-annual time scales. Dall's porpoise are considered rare in Puget Sound. During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 8 Dall's porpoises were observed, with a maximum of 5 individuals observed on a single day.

California Sea Lion

The California sea lion is the most frequently sighted pinniped found in Washington waters and uses haul-out sites along the outer coast, Strait of Juan de Fuca, and in Puget Sound. Haul-out sites are located on jetties, offshore rocks and islands, log booms, marina docks, and navigation buoys. This species also may be frequently seen resting in the water, rafted together in groups in Puget Sound. Only male California sea lions migrate into Pacific Northwest waters, with females remaining in waters near their breeding rookeries off the coast of California and Mexico. The California sea lion was considered rare in Washington waters prior to the 1950s. More recently, peak numbers of 3,000 to 5,000 animals move into the Salish Sea during the fall and remain until late spring, when most return to breeding rookeries in California and Mexico (Jeffries *et al.,* 2000).

California sea lions are often observed in the area of potential effects and are known to be comfortable and seemingly curious around human activities. The nearest documented California sea lion haulout is 2.3 mi (3.7 km) southeast of the project sites on Blakely Rocks. Jeffries *et al.* (2000) estimated less than 100 California sea lions occupy the Blakely Rocks haulout site. California sea lions are not commonly observed in Eagle Harbor but are regularly observed in Elliott Bay, especially around two navigational buoys near Alki Point, at the southwest edge of Elliott Bay. During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a maximum of 38 California sea lions were observed on a single day.

Steller Sea Lion

Steller sea lions range along the North Pacific Rim from northern Japan to California (Loughlin *et al.,* 1984). There are two separate stocks of Steller sea lions, the Eastern U.S. stock, which occurs east of Cape Suckling, Alaska (144° W), and the Western U.S. stock, which occurs west of that point. Only the Western stock of Steller sea lions, which is designated as the Western DPS of Steller sea lions, is listed as endangered under the ESA (78 FR 66139; November 4, 2013). Unlike the Western U.S. stock of Steller sea lions, there has been a sustained and robust increase in abundance of the Eastern U.S. stock throughout its breeding range. The eastern stock of Steller sea lions has historically bred on rookeries located in Southeast Alaska, British Columbia, Oregon, and California. However, within the last several years a new rookery has become established on the outer Washington coast (at the Carroll Island and Sea Lion Rock complex), with more than 100 pups born there in 2015 (Muto *et al.,* 2020).

Steller sea lions use haul-out locations in Puget Sound, and may occur at the same haul-outs as California sea lions, but are considered rare visitors to the waters around Bainbridge Island. Few Steller sea lions have been observed during monitoring of recent construction projects in the Seattle area; typically fewer than 5 total observations per year (*e.g.,* Anchor QEA 2018, 2019). During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a total of 100 Steller sea lions were observed, with a maximum of 10 Steller sea lions observed on a single day.

Harbor Seal

Harbor seals inhabit coastal and estuarine waters off Baja California, north along the western coasts of the continental U.S., British Columbia, and Southeast Alaska, west through the Gulf of Alaska and Aleutian Islands, and in the Bering Sea north to Cape Newenham and the Pribilof Islands (Carretta *et al.,* 2014). They haul out on rocks, reefs, beaches, and drifting glacial ice and feed in marine, estuarine, and occasionally fresh waters. Harbor seals generally are non-migratory, with local movements associated with such factors as tides, weather, season, food availability, and reproduction (Scheffer and Slipp 1944; Fisher 1952; Bigg 1969, 1981). Within U.S. west coast waters, five stocks of harbor seals are recognized: (1) Southern Puget Sound (south of the Tacoma Narrows Bridge); (2) Washington Northern Inland Waters (including Puget Sound north of the Tacoma Narrows Bridge, the San Juan Islands, and the Strait of Juan de Fuca); (3) Hood Canal; (4) Oregon/Washington Coast; and (5) California. Harbor seals in the project areas would be from the Washington Northern Inland Waters stock.

Harbor seals are the only pinniped species that occurs year-round and breeds in Washington waters (Jeffries *et al.,* 2000). Pupping seasons vary by geographic region, with pups born in coastal estuaries (Columbia River, Willapa Bay, and Grays Harbor) from mid-April through June; Olympic Peninsula coast from May through July; San Juan Islands and eastern bays of Puget Sound from June through August; southern Puget Sound from mid-July through September; and Hood Canal from August through January (Jeffries *et al.,* 2000). The most recent estimate for the Washington Northern Inland Waters Stock is 11,036 based on surveys conducted in 1999. There are no current estimates of abundance for this stock but the population is thought to be stable (Carretta *et al.,* 2014).

There is one documented harbor seal haulout area near Bainbridge Island at Blakely Rocks, approximately 2.3 mi (3.7 km) southeast of the project sites. The haulout, which is estimated at less

than 100 animals, consists of intertidal rocks and reef areas (Jefferies *et al.,* 2000). Harbor seals are a commonly observed marine mammal in the area of potential effects and are known to be comfortable and seemingly curious around human activities. Observations of harbor seals were reported during many recent construction projects along the Seattle waterfront. During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a maximum of 43 harbor seals were observed on a single day.

Northern Elephant Seal

Northern elephant seals breed and give birth in California (U.S.) and Baja California (Mexico), primarily on offshore islands (Stewart *et al.,* 1994), from December to March (NOAA 2015). Males migrate to the Gulf of Alaska and western Aleutian Islands along the continental shelf to feed on benthic prey, while females migrate to pelagic areas in the Gulf of Alaska and the central North Pacific Ocean to feed on pelagic prey (Le Boeuf *et al.,* 2000). Adults return to land between March and August to molt, with males returning later than females. Adults return to their feeding areas again between their spring/summer molting and their winter breeding seasons (Carretta *et al.,* 2015).

During 372 total days of construction at the Washington State Ferries Multimodal Project at Colman Dock in Seattle between 2017 and 2021, a single northern elephant seal was observed. Elephant seals are generally considered rare in Puget Sound. However, a female elephant seal has been reported hauled-out in Mutiny Bay on Whidbey Island periodically since 2010. She was observed alone for her first three visits to the area, but in March 2015, she was seen with a pup. Since then, she has produced two more pups, born in 2018 and 2020. Northern elephant seals generally give birth in January but this individual has repeatedly given birth in March. She typically returns to Mutiny Bay in April and May to molt. Her pups have also repeatedly returned to haul-out on nearby beaches (Orca Network 2020).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, etc.). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 4.

TABLE 4—MARINE MAMMAL HEARING GROUPS (NMFS, 2018)

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.,* 2006; Kastelein *et al.,* 2009; Reichmuth and Holt, 2013).

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

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section includes a 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 includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and whether those impacts are reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Acoustic effects on marine mammals during the specified activities can occur from impact pile driving and vibratory driving and removal. The effects of underwater noise from WSDOT's proposed activities have the potential to result in Level A or Level B harassment of marine mammals in the action areas.

Description of Sound Sources

The marine soundscape is comprised of both ambient and anthropogenic sounds. Ambient sound is defined as the all-encompassing sound in a given place and is usually a composite of sound from many sources both near and far (ANSI 1995). The sound level of an area is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* waves, wind, precipitation, earthquakes, ice, atmospheric sound), biological (*e.g.,*

sounds produced by marine mammals, fish, and invertebrates), and anthropogenic sound (*e.g.,* vessels, dredging, aircraft, construction).

The sum of the various natural and anthropogenic sound sources at any given location and time—which comprise ''ambient'' or ''background'' sound—depends not only on the source levels (as determined by current weather conditions and levels of biological and shipping activity) but also on the ability of sound to propagate through the environment. In turn, sound propagation is dependent on the spatially and temporally varying properties of the water column and sea floor, and is frequency-dependent. As a result of the dependence on a large number of varying factors, ambient sound levels can be expected to vary widely over both coarse and fine spatial and temporal scales. Sound levels at a given frequency and location can vary by 10–20 decibels (dB) from day to day (Richardson *et al.,* 1995). The result is that, depending on the source type and its intensity, sound from the specified activities may be a negligible addition to the local environment or could form a distinctive signal that may affect marine mammals.

In-water construction activities associated with the projects would include impact and vibratory pile driving and removal. The sounds produced by these activities fall into one of two general sound types: impulsive and non-impulsive. Impulsive sounds (*e.g.,* explosions, sonic booms, impact pile driving) are typically transient, brief (less than 1 second), broadband, and consist of high peak sound pressure with rapid rise time and rapid decay (ANSI, 1986; NIOSH, 1998; NMFS, 2018). Non-impulsive sounds (*e.g.,* machinery operations such as drilling or dredging, vibratory pile driving, underwater chainsaws, and active sonar systems) can be broadband, narrowband or tonal, brief or prolonged (continuous or intermittent), and typically do not have the high peak sound pressure with raid rise/decay time that impulsive sounds do (ANSI 1995; NIOSH 1998; NMFS 2018). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward 1997 in Southall *et al.,* 2007).

Two types of hammers would be used on these projects, impact and vibratory. Impact hammers operate by repeatedly dropping and/or pushing a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is considered impulsive. Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the sediment. Vibratory hammers produce non-impulsive, continuous sounds. Vibratory hammering generally produces SPLs 10 to 20 dB lower than impact pile driving of the same-sized pile (Oestman *et al.,* 2009). Rise time is slower, reducing the probability and severity of injury, and sound energy is distributed over a greater amount of time (Nedwell and Edwards, 2002; Carlson *et al.,* 2005).

The likely or possible impacts of WSDOT's proposed activities on marine mammals could be generated from both non-acoustic and acoustic stressors. Potential non-acoustic stressors include the physical presence of the equipment, vessels, and personnel; however, we expect that any animals that approach the project site(s) close enough to be harassed due to the presence of equipment or personnel would be within the Level B harassment zones from pile driving and would already be subject to harassment from the in-water activities. Therefore, any impacts to marine mammals are expected to primarily be acoustic in nature. Acoustic stressors are generated by heavy equipment operation during pile installation and removal (*i.e.,* impact and vibratory pile driving and removal).

Acoustic Impacts

The introduction of anthropogenic noise into the aquatic environment from pile driving equipment is the primary means by which marine mammals may be harassed from WSDOT's specified activities. In general, animals exposed to natural or anthropogenic sound may experience physical and psychological effects, ranging in magnitude from none to severe (Southall *et al.,* 2007). Generally, exposure to pile driving and removal and other construction noise has the potential to result in auditory threshold shifts and behavioral reactions (*e.g.,* avoidance, temporary cessation of foraging and vocalizing, changes in dive behavior). Exposure to anthropogenic noise can also lead to non-observable physiological responses such as an increase in stress hormones. Additional noise in a marine mammal's habitat can mask acoustic cues used by marine mammals to carry out daily functions such as communication and predator and prey detection. The effects of pile driving and demolition 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. mother 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 (Wartzok *et al.,* 2004; Southall *et al.,* 2007). Here we discuss physical auditory effects (threshold shifts) followed by behavioral effects and potential impacts on habitat. No physiological effects other than PTS are anticipated or proposed to be authorized, and therefore are not discussed further.

NMFS defines a noise-induced threshold shift (TS) as a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2018). The amount of threshold shift is customarily expressed in dB. A TS can be permanent or temporary. As described in NMFS (2018), there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.,* impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.,* spectral content), the hearing and vocalization frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.,* how animal uses sound within the frequency band of the signal; *e.g.,* Kastelein *et al.,* 2014), and the overlap between the animal and the source (*e.g.,* spatial, temporal, and spectral).

Permanent Threshold Shift (PTS)—NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS 2018). Available data from humans and other terrestrial mammals indicate that a 40 dB threshold shift approximates PTS onset (see Ward *et al.,* 1958, 1959; Ward, 1960; Kryter *et al.,* 1966; Miller, 1974; Ahroon *et al.,* 1996; Henderson *et al.,* 2008). PTS levels for marine mammals are estimates, because there are limited empirical data measuring PTS in marine mammals (*e.g.,* Kastak *et al.,* 2008), largely due to the fact that, for various ethical reasons, experiments involving anthropogenic noise exposure at levels inducing PTS are not typically pursued or authorized (NMFS, 2018).

Temporary Threshold Shift (TTS)—TTS is a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a

previously established reference level (NMFS, 2018). Based on data from cetacean TTS measurements (see Southall *et al.,* 2007), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.,* 2000; Finneran *et al.,* 2000, 2002). As described in Finneran (2016), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SEL_{cum}) in an accelerating fashion: At low exposures with lower SEL_{cum}, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SEL_{cum}, the growth curves become steeper and approach linear relationships with the noise SEL.

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 takes place during a time when the animal is traveling through the open ocean, 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. We note that 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 we can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

Currently, TTS data only exist for four species of cetaceans (bottlenose dolphin, beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*)) and five species of pinnipeds exposed to a limited number of sound sources (*i.e.,* mostly tones and octave-band noise) in laboratory settings (Finneran, 2015). TTS was not observed in trained spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to impulsive noise at levels matching previous predictions of TTS onset (Reichmuth *et al.,* 2016). In general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). The potential for TTS from impact pile driving exists. After exposure to playbacks of impact pile driving sounds (rate 2,760 strikes/hour) in captivity, mean TTS increased from 0 dB after 15 minute exposure to 5 dB after 360 minute exposure; recovery occurred within 60 minutes (Kastelein *et al.,* 2016). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species. No data are available on noise-induced hearing loss for mysticetes. Nonetheless, what we considered is the best available science. For summaries of data on TTS in marine mammals or for further discussion of TTS onset thresholds, please see Southall *et al.* (2007), Finneran and Jenkins (2012), Finneran (2015), and Table 5 in NMFS (2018).

WSDOT proposes to use impact pile driving to install some piles for these projects. There would likely be pauses in activities producing the sound (*e.g.,* impact pile driving) during each day. Given these pauses and the fact that many marine mammals are likely moving through the project areas and not remaining for extended periods of time, the potential for TS declines.

Behavioral Harassment—Exposure to noise from pile driving and removal also has the potential to behaviorally disturb marine mammals. Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.,* Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005).

Disturbance may result in 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); or avoidance of areas where sound sources are located. Pinnipeds may increase their haul-out time, possibly to avoid in-water disturbance (Thorson and Reyff, 2006). Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2004; Southall *et al.,* 2007; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). In general, pinnipeds seem more tolerant of, or at least habituate more quickly to, potentially disturbing underwater sound than do cetaceans, and generally seem to be less responsive to exposure to industrial sound than most cetaceans. Please see Appendices B and C of Southall *et al.* (2007) for a review of studies involving marine mammal behavioral responses to sound.

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (*e.g.,* bubble nets or sediment plumes), or changes in dive behavior. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.,* Croll *et al.,* 2001; Nowacek *et al.,* 2004; Madsen *et al.,* 2006; Yazvenko *et al.,* 2007). A determination of whether foraging disruptions incur fitness consequences would require information on or estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal.

In 2016, the Alaska Department of Transportation and Public Facilities (ADOT&PF) documented observations of marine mammals during construction activities (*i.e.,* pile driving) at the Kodiak Ferry Dock (see 80 FR 60636, October 7, 2015). In the marine mammal monitoring report for that project (ABR 2016), 1,281 Steller sea lions were observed within the Level B disturbance zone during pile driving or drilling (*i.e.,* documented as Level B harassment take). Of these, 19 individuals demonstrated an alert behavior, 7 were fleeing, and 19 swam away from the

project site. All other animals (98 percent) were engaged in activities such as milling, foraging, or fighting and did not change their behavior. In addition, two sea lions approached within 20 m of active vibratory pile driving activities. Three harbor seals were observed within the disturbance zone during pile driving activities; none of them displayed disturbance behaviors. Fifteen killer whales and three harbor porpoise were also observed within the Level B harassment zone during pile driving. The killer whales were travelling or milling while all harbor porpoises were travelling. No signs of disturbance were noted for either of these species. Given the similarities in species, activities, and habitat (*e.g.,* cool-temperate waters, industrialized area), we expect similar behavioral responses from the same and similar species affected by WSDOT's specified activities. That is, disturbance, if any, is likely to be temporary and localized (*e.g.,* small area movements).

Stress responses—An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses (*e.g.,* Seyle 1950; Moberg 2000). In many cases, an animal's first and sometimes most economical (in terms of energetic costs) response is behavioral avoidance of the potential stressor. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity. These responses have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

Neuroendocrine stress responses often involve the hypothalamus-pituitary-adrenal system. Virtually all neuroendocrine functions that are affected by stress—including immune competence, reproduction, metabolism, and behavior—are regulated by pituitary hormones. Stress-induced changes in the secretion of pituitary hormones have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance (*e.g.,* Moberg 1987; Blecha 2000). Increases in the circulation of glucocorticoids are also equated with stress (Romano *et al.,* 2004).

The primary distinction between stress (which is adaptive and does not normally place an animal at risk) and ''distress'' is the cost of the response. During a stress response, an animal uses glycogen stores that can be quickly replenished once the stress is alleviated. In such circumstances, the cost of the stress response would not pose serious fitness consequences. However, when an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other functions. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function.

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well-studied through controlled experiments and for both laboratory and free-ranging animals (*e.g.,* Holberton *et al.,* 1996; Hood *et al.,* 1998; Jessop *et al.,* 2003; Krausman *et al.,* 2004; Lankford *et al.,* 2005). Stress responses due to exposure to anthropogenic sounds or other stressors and their effects on marine mammals have also been reviewed (Fair and Becker 2000; Romano *et al.,* 2002b) and, more rarely, studied in wild populations (*e.g.,* Romano *et al.,* 2002a). For example, Rolland *et al.* (2012) found that noise reduction from reduced ship traffic in the Bay of Fundy was associated with decreased stress in North Atlantic right whales. These and other studies lead to a reasonable expectation that some marine mammals will experience physiological stress responses upon exposure to acoustic stressors and that it is possible that some of these would be classified as ''distress.'' In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2003), however distress is an unlikely result of these projects based on observations of marine mammals during previous, similar projects in the area.

Masking—Sound can disrupt behavior through masking, or interfering with, an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation) (Richardson *et al.,* 1995). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* pile driving, shipping, sonar, seismic exploration) in origin. The ability of a noise source to mask biologically important sounds depends on the characteristics of both the noise source and the signal of interest (*e.g.,* signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.,* sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions. Masking of natural sounds can result when human activities produce high levels of background sound at frequencies important to marine mammals. Conversely, if the background level of underwater sound is high (*e.g.,* on a day with strong wind and high waves), an anthropogenic sound source would not be detectable as far away as would be possible under quieter conditions and would itself be masked. The Puget Sound area contains active commercial shipping, ferry operations, and commercial fishing as well as numerous recreational and other commercial vessels, and background sound levels in the area are already elevated.

Airborne Acoustic Effects—Pinnipeds that occur near the project site could be exposed to airborne sounds associated with pile driving and removal that have the potential to cause behavioral harassment, depending on their distance from pile driving activities. Cetaceans are not expected to be exposed to airborne sounds that would result in harassment as defined under the MMPA.

Airborne noise would primarily be an issue for pinnipeds that are swimming or hauled out near the project site within the range of noise levels elevated above the acoustic criteria. We recognize that pinnipeds in the water could be exposed to airborne sound that may result in behavioral harassment when looking with their heads above water. Most likely, airborne sound would cause behavioral responses similar to those discussed above in relation to underwater sound. For instance, anthropogenic sound could cause hauled-out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to temporarily abandon the area and move further from the source. However, these animals would likely previously have been 'taken' because of exposure to underwater sound above the behavioral harassment thresholds, which are generally larger than those associated with airborne sound. There are no haulouts near the project sites. Thus, the behavioral harassment of these animals is already accounted for in these estimates of potential take. Therefore, we do not believe that authorization of incidental take resulting from airborne sound for pinnipeds is warranted, and airborne sound is not discussed further here.

Marine Mammal Habitat Effects

WSDOT's proposed construction activities could have localized, temporary impacts on marine mammal habitat, including prey, by increasing in-water sound pressure levels and slightly decreasing water quality. Increased noise levels may affect acoustic habitat (see masking discussion above) and adversely affect marine mammal prey in the vicinity of the project areas (see discussion below). During impact and vibratory pile driving or removal, elevated levels of underwater noise would ensonify the project areas where both fishes and mammals occur and could affect foraging success. Additionally, marine mammals may avoid the area during construction, however, displacement due to noise is expected to be temporary and is not expected to result in long-term effects to the individuals or populations. Construction activities are of short duration and would likely have temporary impacts on marine mammal habitat through increases in underwater and airborne sound.

A temporary and localized increase in turbidity near the seafloor would occur in the immediate area surrounding the area where piles are installed or removed. In general, turbidity associated with pile installation is localized to about a 25-ft (7.6-m) radius around the pile (Everitt *et al.,* 1980). The sediments of the project site will settle out rapidly when disturbed. Cetaceans are not expected to be close enough to the pile driving areas to experience effects of turbidity, and any pinnipeds could avoid localized areas of turbidity. Local currents are anticipated to disburse any additional suspended sediments produced by project activities at moderate to rapid rates depending on tidal stage. Therefore, we expect the impact from increased turbidity levels to be discountable to marine mammals and do not discuss it further.

In-Water Construction Effects on Potential Foraging Habitat

The area likely impacted by the project is relatively small compared to the available habitat in Puget Sound. The area is highly influenced by anthropogenic activities. The total seafloor area affected by pile installation and removal is a small area compared to the vast foraging area available to marine mammals in the area. At best, the impact area provides marginal foraging habitat for marine mammals and fishes. Furthermore, pile driving and removal at the project site would not obstruct long-term movements or migration of marine mammals.

Avoidance by potential prey (*i.e.,* fish or, in the case of transient killer whales, other marine mammals) of the immediate area due to the temporary loss of this foraging habitat is also possible. The duration of fish and marine mammal avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated. Any behavioral avoidance by fish or marine mammals of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity.

In-Water Construction Effects on Potential Prey—Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* crustaceans, cephalopods, fish, zooplankton, other marine mammals). Marine mammal prey varies by species, season, and location. Here, we describe studies regarding the effects of noise on known marine mammal prey other than other marine mammals (which have been discussed earlier).

Fish utilize the soundscape and components of sound in their environment to perform important functions such as foraging, predator avoidance, mating, and spawning (*e.g.,* Zelick and Mann, 1999; Fay, 2009). Depending on their hearing anatomy and peripheral sensory structures, which vary among species, fishes hear sounds using pressure and particle motion sensitivity capabilities and detect the motion of surrounding water (Fay *et al.,* 2008). The potential effects of noise on fishes depends on the overlapping frequency range, distance from the sound source, water depth of exposure, and species-specific hearing sensitivity, anatomy, and physiology. Key impacts to fishes may include behavioral responses, hearing damage, barotrauma (pressure-related injuries), and mortality.

Fish react to sounds which are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to noise depends on the physiological state of the fish, past exposures, motivation (*e.g.,* feeding, spawning, migration), and other environmental factors. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy. Additional studies have documented effects of pile driving on fish; several are based on studies in support of large, multiyear bridge construction projects (*e.g.,* Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Several studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Fewtrell and McCauley, 2012; Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Paxton *et al.,* 2017). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Pena *et al.,* 2013; Wardle *et al.,* 2001; Jorgenson and Gyselman, 2009; Popper *et al.,* 2015).

SPLs of sufficient strength have been known to cause injury to fish and fish mortality. However, in most fish species, hair cells in the ear continuously regenerate and loss of auditory function likely is restored when damaged cells are replaced with new cells. Halvorsen *et al.* (2012a) showed that a TTS of 4–6 dB was recoverable within 24 hours for one species. Impacts would be most severe when the individual fish is close to the source and when the duration of exposure is long. Injury caused by barotrauma can range from slight to severe and can cause death, and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to impact pile driving (Halvorsen *et al.,* 2012b; Casper *et al.,* 2013).

The most likely impact to fishes from pile driving and removal and construction activities at the project areas would be temporary behavioral avoidance of the area. The duration of fish avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution, and behavior is anticipated.

Construction activities, in the form of increased turbidity, have the potential to adversely affect forage fish in the project areas. Forage fish form a significant prey base for many marine mammal species that occur in the project areas. Increased turbidity is expected to occur in the immediate vicinity (on the order of 10 ft (3 m) or less) of construction activities. However, suspended sediments and particulates are expected to dissipate quickly within a single tidal cycle. Given the limited area affected and high tidal dilution rates any effects on forage fish are expected to be minor or negligible. Finally, exposure to turbid waters from construction activities is not expected to be different from the current exposure; fish and marine mammals in Eagle Harbor are routinely exposed to substantial levels of suspended

sediment from natural and anthropogenic sources.

In summary, given the short daily duration of sound associated with individual pile driving events and the relatively small areas being affected, pile driving activities associated with the proposed actions are not likely to have a permanent, adverse effect on any fish habitat, or populations of fish species. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity. Thus, we conclude that impacts of the specified activities are not likely to have more than short-term adverse effects on any prey habitat or populations of prey species. Further, any impacts to marine mammal habitat are not expected to result in significant or long-term consequences for individual marine mammals, or to contribute to adverse impacts on their populations.

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 determinations.

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

Authorized takes would primarily be by Level B harassment (in the form of behavioral disturbance and TTS), as use of the acoustic sources (*i.e.,* vibratory or impact pile driving and removal) have the potential to result in disruption of behavioral patterns and cause a temporary loss in hearing sensitivity for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result for porpoises and harbor seals because predicted auditory injury zones are larger. The proposed mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the proposed take numbers are estimated.

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

Acoustic Thresholds

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

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

WSDOT's proposed activities includes the use of continuous (vibratory hammer) and impulsive (impact hammer) sources, and therefore the 120 and 160 dB re 1 μPa (rms) thresholds are applicable.

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

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

TABLE 5—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

Hearing group	PTS onset acoustic thresholds * (received level)	
	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.

TABLE 5—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT—Continued

Hearing group	PTS onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
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, ANSI defines peak sound pressure as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript ''flat'' is being included to indicate peak sound pressure should be flat weighted or unweighted within the 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 are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

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

In order to calculate distances to the Level A harassment and Level B harassment thresholds for the methods and piles being used in these projects, NMFS used acoustic monitoring data from previous pile driving at the Bainbridge Island Ferry Terminal (impact installation of 24-in steel piles) and Eagle Harbor Maintenance Facility (impact installation of 30-in steel piles), as well as pile driving at other locations within Puget Sound to develop source levels for the various pile types, sizes, and methods for the two projects (Table 6). A source level for vibratory driving of 18-in steel piles is not available so it is conservatively assumed to be equivalent to the source level for 24-in steel piles.

TABLE 6—EXPECTED PROJECT SOUND SOURCE LEVELS

Pile type and size (in)	Method	Source level (dB re 1 μPa)	Source level measurement distance (m)	Reference
12-in timber	Vibratory removal	152 dB rms	10	Greenbusch Group (2018).
18-in and 24-in steel	Vibratory installation and removal.	166 dB rms	10	WSDOT (2020) [1].
30-in steel	Vibratory installation and removal.	176 dB rms	6	WSDOT (2020) [1].
36-in steel	Vibratory installation	184 dB rms	10	WSDOT (2020) [1].
24-in steel	Impact installation	206 dB peak; 179 dB SEL; 195 dB rms.	10	WSDOT (2020) [1].
30-in steel	Impact installation	194 dB peak; 182 dB SEL; 184 dB rms.	10	WSDOT (2020) [1].
36-in steel	Impact installation	205 dB peak; 178 dB SEL; 191 dB rms.	10	WSDOT (2020) [1].

[1] WSDOT Biological Assessment Manual Table 7–15.

Level B Harassment Zones

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

TL = B * Log10 (R1/R2)

Where:

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R1 = the distance of the modeled SPL from the driven pile, and

R2 = the distance from the driven pile of the initial measurement

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for WSDOT's proposed activities in the absence of specific modelling. The Level B harassment zones for WSDOT's proposed activities are shown in Table 7.

Level A Harassment Zones

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically

going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as pile installation and removal, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur PTS. The isopleths generated by the User Spreadsheet used the same TL coefficient as the Level B harassment zone calculations (*i.e.,* the practical spreading value of 15). Inputs used in the User Spreadsheet (*e.g.,* number of piles per day, duration and/or strikes per pile) are presented in Tables 1 and 2, and the resulting isopleths are reported below in Table 7.

TABLE 7—LEVEL A HARASSMENT AND LEVEL B HARASSMENT ZONES

Pile size/type	Pile driving method	Level A harassment zone (m)					Level B harassment zone (m)
		LF cetaceans	MF cetaceans	HF cetaceans	Phocids	Otariids	
12-in timber	Vibratory removal.	4.1	0.4	6.1	2.5	0.2	[a] 1,360
18-in steel	Vibratory installation/removal.	23.4	2.1	34.5	14.2	1.0	[a] 11,659
24-in steel	Vibratory installation/removal.	27.1	2.4	40.1	16.5	1.2	[a] 11,659
30-in steel	Vibratory installation/removal.	65.1	5.8	96.2	39.5	2.8	[a b] 32,470
36-in steel	Vibratory installation.	485.1	43.0	717.2	294.9	20.7	[a b] 184,785
24-in steel	Impact installation.	784.8	27.9	934.8	420.0	30.6	[c] 2,154
30-in steel	Impact installation.	1,359.6	48.4	1,619.5	727.6	53.0	[c] 2,154398
36-in steel	Impact installation.	795.9	28.3	948.0	425.9	31.0	[c] 2,1541,166

[a] Distance to 120 dB rms threshold.
[b] Distance to Level B harassment threshold without obstruction; however for these projects, 13,345 m is the maximum in-water distance until land is reached.
[c] Distance to 160 dB rms threshold.

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide information about the occurrence of marine mammals, including density or other relevant information, that will inform the quantitative estimate of the take that is reasonably likely to occur and proposed for authorization. Unless otherwise specified, the term ''pile driving'' in this section, and all following sections, may refer to either pile installation or removal. WSDOT first estimated take for both projects using the areas ensonified above the Level B harassment threshold and density estimates for marine mammals in Puget Sound. Density estimates for all species except harbor porpoises were from the U.S. Navy's Marine Species Density Database (MSDD) for the Northwest Training and Testing (NWTT) Study Area (U.S. Navy, 2019). For harbor porpoises, WSDOT used the density estimate from Evenson (2016) as it was considered more conservative than the density estimate for harbor porpoises from the NWTT MSDD. However, for all species except harbor seals and harbor porpoises, WSDOT did not consider the resulting take estimates to be realistic (*i.e.,* either over- or underestimated take). Instead, WSDOT compiled monitoring results from pile driving between August 2017 and February 2021 at the Seattle Ferry Terminal Multimodal Project at Colman Dock (WSDOT 2021) (Table 8). Because the Level B harassment zones from vibratory pile driving at Colman Dock extended to or near the Bainbridge Island shoreline, and because the Level B harassment zones from vibratory pile driving at the Bainbridge Ferry Terminal and Eagle Harbor Maintenance Facility extend to the shoreline, WSDOT considered the monitoring results from the Seattle Multimodal Project to be the most relevant and comprehensive sightings data available for the project areas. Based on the Seattle Multimodal Project monitoring results, WSDOT used their best professional judgement to estimate the number of marine mammals that may be taken incidental to the proposed activities.

NMFS has carefully reviewed WSDOT's analysis and concludes that it represents an appropriate and accurate method for estimating incidental take caused by WSDOT's activities.

TABLE 8—MARINE MAMMAL DENSITY AND SIGHTINGS

Species	Density/km^2	Sightings total	Average sightings/day (372 days)	Maximum one-day sightings	Take requested
Harbor Seal	3.91	1,939	5.21	43	Yes.
Northern Elephant Seal	[1] 0.0	1	0.003	1	Yes.
California Sea Lion	0.0152–0.2211	2,625	7.05	38	Yes.
Steller Sea Lion	0.0010–0.0478	100	0.27	10	Yes.
Unidentified pinniped	N/A	118	N/A	9	N/A.
Killer Whale Southern Resident	0.000009–0.007828	297	0.80	26	No.
Killer Whale Transient	0.001582–0.002373	47	0.13	20	Yes.

TABLE 8—MARINE MAMMAL DENSITY AND SIGHTINGS—Continued

Species	Density/km²	Sightings total	Average sightings/day (372 days)	Maximum one-day sightings	Take requested
Gray Whale	0.000086	4	0.011	1	Yes.
Minke Whale	0.00045	1	0.003	1	Yes.
Unidentified large whale	N/A	2	N/A	1	N/A.
Unidentified small whale	N/A	10	N/A	9	N/A.
Harbor Porpoise	0.58	413	1.11	40	Yes.
Dall's Porpoise	0.00045	8	0.02	5	Yes.
Pacific White-sided Dolphin	0.0	2	0.005	2	Yes.
Long-beaked Common Dolphin	0.0	2	0.005	1	Yes.
Common Bottlenose Dolphin	0.0	6	0.02	2	Yes.
Unidentified dolphin/porpoise	N/A	42	N/A	5	N/A.

Gray Whale

WSDOT estimated that up to 20 gray whales could be taken by Level B harassment from each project, for a total of 40 takes of gray whales by Level B harassment. In consideration of the infrequent occurrence of gray whales in the project areas, the proposed mitigation and monitoring measures that WSDOT would be required to comply with, including marine mammal monitoring and coordination with Orca Network that would alert WSDOT to the presence of large whales in the project area (see Proposed Mitigation), and given the size and visibility of gray whales, WSDOT would be able to detect gray whales and stop work before gray whales could enter the Level A harassment zones. Therefore, it is unlikely that any gray whales would be taken by Level A harassment. No take of gray whales by Level A harassment is requested or proposed to be authorized.

Minke Whale

WSDOT estimated that up to 20 minke whales could be taken by Level B harassment from each project, for a total of 40 takes of minke whales by Level B harassment. Like gray whales, in consideration of the infrequent occurrence of minke whales in the project areas, the proposed mitigation and monitoring measures that WSDOT would be required to comply with, including marine mammal monitoring and coordination with Orca Network (see Proposed Mitigation), and given the size and visibility of minke whales, WSDOT would be able to detect minke whales and stop work before minke whales could enter the Level A harassment zones. Therefore, it is unlikely that any minke whales would be taken by Level A harassment. No take of minke whales by Level A harassment is requested or proposed to be authorized.

Long-Beaked Common Dolphin

WSDOT estimated that up to 20 long-beaked common dolphins could be taken by Level B harassment from each project, for a total of 40 takes of long-beaked common dolphins by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of long-beaked common dolphins, WSDOT would be able to cease pile driving before long-beaked common dolphins could enter the Level A harassment zone. No take of long-beaked common dolphins by Level A harassment is requested or proposed to be authorized.

Bottlenose Dolphin

WSDOT estimated that up to 20 bottlenose dolphins could be taken by Level B harassment from each project, for a total of 40 takes of bottlenose dolphins by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of bottlenose dolphins, WSDOT would be able to cease pile driving before bottlenose dolphins could enter the Level A harassment zone. No take of bottlenose dolphins by Level A harassment is requested or proposed to be authorized.

Pacific White-Sided Dolphin

WSDOT estimated that up to 20 Pacific white-sided dolphins could be taken by Level B harassment from each project, for a total of 40 takes of Pacific white-sided dolphins by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of long-beaked common dolphins, WSDOT would be able to cease pile driving before long-beaked common dolphins could enter the Level A harassment zone. No take of long-beaked common dolphins by Level A harassment is requested or proposed to be authorized.

Killer Whale (Transient)

WSDOT estimated that up to 60 transient killer whales could be taken by Level B harassment from each project, for a total of 120 takes of killer whales by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of killer whales, WSDOT would be able to cease pile driving before killer whales could enter the Level A harassment zone. No take of killer whales by Level A harassment is requested or proposed to be authorized.

As stated above, no take of Southern Resident killer whales is expected or proposed to be authorized.

Harbor Porpoise

To estimate the number of harbor porpoises that may be taken by Level B harassment from the two projects, WSDOT calculated the area ensonified above the Level B harassment threshold for each pile size, type, and method for both projects. WSDOT then multiplied the estimated density of harbor porpoises in the area (0.58 per km²; Evenson 2016) by the ensonified area and the expected days of work for each project element (Table 9).

TABLE 9—ESTIMATED TAKE OF HARBOR PORPOISES BY LEVEL B HARASSMENT

Pile size, type, and method	Bainbridge ensonified area (km^2)	Bainbridge days of work	Eagle Harbor ensonified area (km^2)	Eagle Harbor days of work	Bainbridge takes by Level B harassment by pile size, type, and method	Eagle Harbor takes by Level B harassment by pile size, type, and method
12-in timber vibratory	0.5	5	0.8	13	3	6
18-in steel vibratory	N/A	0	23.2	3	0	27
24-in steel vibratory	2.3	2	23.2	3	3	40
30-in steel vibratory	2.3	23	23.2	4	320	53
36-in steel vibratory	2.3	6	23.2	4	84	53
24-in steel impact	0.9	13	0.87	3	17	2
30-in steel impact	0.4	2	N/A	0	3	0
36-in steel impact	0.9	6	0.87	1	8	1
Total					298	183

The areas ensonified above the Level A harassment threshold for high-frequency cetaceans has been omitted from the areas ensonified above the Level B harassment threshold presented in Table 9. For impact installation of 30-in steel piles, the Level A harassment zone for high-frequency cetaceans is approximately 1,620 m. To estimate the number of harbor porpoises that may be present within the Level A harassment zone, WSDOT used the average sightings rate from the Seattle Multimodal Project at Colman Dock (0.691 harbor porpoises per day; Table 8) multiplied by the days of impact pile driving expected for each project (27 days for the Bainbridge Project and 8 days for the Eagle Harbor Project) to estimate that 19 and 6 harbor porpoises may be taken by Level A harassment from the Bainbridge Project and Eagle Harbor Project, respectively, for a total of 25 takes of harbor seals by Level A harassment.

Dall's Porpoise

WSDOT estimated that up to 20 Dall's porpoises could be taken by Level B harassment from each project, for a total of 40 takes of Dall's porpoises by Level B harassment.

For impact installation of 30-in steel piles, the Level A harassment zone for high-frequency cetaceans is approximately 1,620 m. Dall's porpoises are considered rare in the project area and are unlikely to be present within the Level A harassment zones but WSDOT conservatively estimates that no more than 5 Dall's porpoises could enter the Level A harassment zones of each project, for a total of 10 takes of Dall's porpoises by Level A harassment.

California Sea Lion

Over the course of 372 days of monitoring for the Seattle Multimodal Project at Colman Dock, the average number of California sea lions observed per day was 7.05 (Table 8). WSDOT used that average sightings rate multiplied by the days of work for each project (57 days for the Bainbridge Project and 31 days for the Eagle Harbor Project) to estimate that 402 and 219 California sea lions may be taken by Level B harassment from the Bainbridge Project and Eagle Harbor Project, respectively, for a total of 621 takes of California sea lions by Level B harassment.

The largest Level A harassment zone for otariid pinnipeds is 53 m. WSDOT would be required to implement a 60 m shutdown zone for otariids for all pile driving activities. At that close range, WSDOT would be able to detect California sea lions and implement the required shutdown measures before California sea lions could enter the Level A harassment zone. Therefore, no takes of California sea lions by Level A harassment are requested or proposed to be authorized.

Steller Sea Lion

WSDOT estimated that 180 Steller sea lions could be taken by Level B harassment from each project, for a total of 360 takes of Steller sea lions by Level B harassment. The largest Level A harassment zone for otariid pinnipeds is 53 m. WSDOT would be required to implement a 60 m shutdown zone for otariids for all pile driving activities. At that close range, WSDOT would be able to detect Steller sea lions and implement the required shutdown measures before Steller sea lions could enter the Level A harassment zone. Therefore, no takes of Steller sea lions by Level A harassment are requested or proposed to be authorized.

Harbor Seal

To estimate the number of harbor seals that may be taken by Level B harassment from the two projects, WSDOT calculated the area ensonified above the Level B harassment threshold for each pile size, type, and method for both projects. WSDOT then multiplied the estimated density of harbor seals in the area (3.91 per km^2; Navy 2019) by the ensonified area and the expected days of work for each project element (Table 10). In total, WSDOT estimates that 3,450 harbor seals may be taken by Level B harassment.

TABLE 10—ESTIMATED TAKE OF HARBOR SEALS BY LEVEL B HARASSMENT

Pile size, type, and method	Bainbridge ensonified area (km^2)	Bainbridge days of work	Eagle Harbor ensonified area (km^2)	Eagle Harbor days of work	Bainbridge takes by pile size, type, and method	Eagle Harbor takes by pile size, type, and method
12-in timber vibratory	1.5	5	1.6	13	30	81
18-in steel vibratory	N/A	0	24.1	3	0	188
24-in steel vibratory	24.0	2	24.1	3	188	283
30-in steel vibratory	24.0	23	24.1	4	2,158	377
36-in steel vibratory	24.0	6	24.1	4	563	377
24-in steel impact	2.0	13	1.66	3	102	20

TABLE 10—ESTIMATED TAKE OF HARBOR SEALS BY LEVEL B HARASSMENT—Continued

Pile size, type, and method	Bainbridge ensonified area (km²)	Bainbridge days of work	Eagle Harbor ensonified area (km²)	Eagle Harbor days of work	Bainbridge takes by pile size, type, and method	Eagle Harbor takes by pile size, type, and method
30-in steel impact	1.3	2	N/A	0	10	0
36-in steel impact	2.0	6	1.66	1	47	7
Total					2,117	1,333

The areas ensonified above the Level A harassment threshold for high-frequency cetaceans has been omitted from the areas ensonified above the Level B harassment threshold presented in Table 10. For impact installation of 30-in steel piles, the Level A harassment zone for phocid pinnipeds is approximately 728 m. To estimate the number of harbor seals that may be present within the Level A harassment zone, WSDOT used the average sightings rate from the Seattle Multimodal Project at Colman Dock (5.21 harbor seals per day; Table 8) multiplied by the days of impact pile driving expected for each project (27 days for the Bainbridge Project and 8 days for the Eagle Harbor Project) to estimate that 141 and 42 harbor seals may be taken by Level A harassment from the Bainbridge Project and Eagle Harbor Project, respectively, for a total of 183 takes of harbor seals by Level A harassment.

Northern Elephant Seal

Individual elephant seals have occasionally been reported in central Puget Sound (*e.g.,* Orca Network, 2020) but are considered rare in the project areas. WSDOT estimated that up to 10 northern elephant seals could be taken by Level B harassment from each project, for a total of 20 takes of northern elephant seals by Level B harassment. The largest Level A harassment zone (728 m) occurs during impact installation of 30-in steel pipe piles (Table 7). It is unlikely that northern elephant seals would be found within this zone, and even more unlikely that northern elephant seals would be found within the Level A harassment zones for vibratory pile driving (up to 295 m). However, even if northern elephant seals were encountered in the project areas, at that close range, WSDOT would be able to detect them and implement the required shutdown measures before any northern elephant seals could enter the Level A harassment zones. Therefore, no take of northern elephant seals by Level A harassment is requested or proposed to be authorized.

TABLE 11—PROPOSED TAKE OF MARINE MAMMALS BY LEVEL A AND LEVEL B HARASSMENT FROM THE BAINBRIDGE PROJECT BY SPECIES AND STOCK

Species	Stock	Proposed take by Level B harassment	Proposed take by Level A harassment
Gray whale	Eastern North Pacific	20	0
Minke whale	California/Oregon/Washington	20	0
Killer whale	West Coast Transient	60	0
Bottlenose dolphin	California Coastal	20	0
Long-beaked common dolphin	California	20	0
Pacific white-sided dolphin		20	0
Harbor porpoise	Washington Inland Waters	298	19
Dall's porpoise	California/Oregon/Washington	20	5
California sea lion	U.S	402	0
Steller sea lion	Eastern	180	0
Northern elephant seal	California Breeding	10	0
Harbor seal	Washington Northern Inland Waters	2,117	141

TABLE 12—PROPOSED TAKE OF MARINE MAMMALS BY LEVEL A AND LEVEL B HARASSMENT FROM THE EAGLE HARBOR PROJECT BY SPECIES AND STOCK

Species	Stock	Proposed take by Level B harassment	Proposed take by Level A harassment
Gray whale	Eastern North Pacific	20	0
Minke whale	California/Oregon/Washington	20	0
Killer whale	West Coast Transient	60	0
Bottlenose dolphin	California Coastal	20	0
Long-beaked common dolphin	California	20	0
Pacific white-sided dolphin		20	0
Harbor porpoise	Washington Inland Waters	183	6
Dall's porpoise	California/Oregon/Washington	20	5
California sea lion	U.S	219	0
Steller sea lion	Eastern	180	0
Northern elephant seal	California Breeding	10	0
Harbor seal	Washington Northern Inland Waters	1,333	42

TABLE 13—TOTAL PROPOSED TAKE OF MARINE MAMMALS BY LEVEL A AND LEVEL B HARASSMENT, BY SPECIES AND STOCK AND PERCENT OF TAKE BY STOCK

Species	Stock	Total proposed take by Level A harassment	Total proposed take by Level B harassment	Total proposed take	Percent of stock
Gray whale	Eastern North Pacific	0	40	40	0.2
Minke whale	California/Oregon/Washington	0	40	40	11.0
Killer whale	West Coast Transient	0	120	120	34.4
Bottlenose dolphin	California Coastal	0	40	40	8.8
Long-beaked common dolphin	California	0	40	40	3.2
Pacific white-sided dolphin	California/Oregon/Washington	0	40	40	0.2
Harbor porpoise	Washington Inland Waters	25	481	506	5.0
Dall's porpoise	California/Oregon/Washington	10	40	50	0.3
California sea lion	U.S	0	621	621	0.24
Steller sea lion	Eastern	0	360	360	0.83
Northern elephant seal	California Breeding	0	20	20	0.01
Harbor seal	Washington Northern Inland Waters	183	3,450	3,633	32.9

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (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 the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

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

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

Shutdown Zones

Before the commencement of in-water construction activities, WSDOT would establish shutdown zones for all activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Pile driving would also not commence until all marine mammals are clear of their respective shutdown zones. Shutdown zones are established in consideration of the Level A harassment zones and therefore typically vary based on the activity type and marine mammal hearing group. However, rather than establishing different shutdown zones for each hearing group for each project element, WSDOT proposed to simplify the shutdown zones and implement only 1 or 2 shutdown zones for each hearing group across all project elements (Table 14). For example, the 720 m shutdown zone proposed to be implemented for low-frequency and high-frequency cetaceans for all vibratory pile driving activities encompasses both the largest Level A harassment zone for high-frequency cetaceans (717.2 m; see Table 7) and the largest Level A harassment zone for low-frequency cetaceans (485.1 m; see Table 7). This conservatively protects animals in both hearing groups, simplifies analysis and monitoring, and presents minimal risks to implementing the project, as marine mammals in these hearing groups are unlikely to be present within 720 m of the construction site during pile driving activities. For impact pile driving, WSDOT proposes to retain the 720 m shutdown zone for high-frequency cetaceans but increase the shutdown zone for low-frequency cetaceans to 2,175 m which encompasses the largest Level B harassment zone for impact pile driving, and is also the proposed shutdown zone for preventing take of unauthorized species (*e.g.,* Southern Resident killer whales, humpback whales) (Table 14). The Level A harassment zones for high-frequency cetaceans from impact pile driving are all greater than 720 m (Table 7), thus any high-frequency cetacean that enters the Level A harassment zone beyond 720 m would be recorded as taken by Level A harassment.

At minimum, the shutdown zone for all hearing groups and all activities would be 10 m. For in-water heavy machinery work other than pile driving (*e.g.,* standard barges, *etc.*), if a marine mammal comes within 10 m, operations would cease and vessels would reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include, for example, the movement of the barge to the pile location or positioning of the pile on the substrate via a crane.

WSDOT would also establish shutdown zones for all marine mammals for which take has not been authorized or for which incidental take has been authorized but the authorized number of takes has been met. These zones are equivalent to the Level B harassment zones for each activity (see Table 14).

WSDOT would also implement shutdown measures for Southern Resident killer whales and humpback whales. If Southern Resident killer whales or humpback whales are sighted within the vicinity of the project areas and are approaching the Level B harassment zone (see Table 14), WSDOT would shut down the pile driving equipment to avoid possible take of these species. If a killer whale

approaches the Level B harassment zone during pile driving, and it is unknown whether it is a Southern Resident killer whale or a transient killer whale, it would be assumed to be a Southern Resident killer whale and WSDOT would implement the shutdown measure.

If a Southern Resident killer whale, unidentified killer whale, or humpback whale enters the Level B harassment zone undetected, in-water pile driving would be suspended until the whale exits the Level B harassment zone, or 15 minutes have elapsed with no sighting of the animal, to avoid further Level B harassment.

TABLE 14—SHUTDOWN ZONES FOR PIER 58 RECONSTRUCTION

Pile type and method	Shutdown zone (m)					
	LF cetacean	MF cetacean	HF cetacean	Phocids	Otariids	Southern resident killer whales, humpback whales, and other unauthorized species
12-in timber vibratory	720	60	720	60	60	2,175
18-in steel vibratory	720	60	720	60	60	[a] 13,345
24-in steel vibratory	720	60	720	60	60	[a] 13,345
30-in steel vibratory	720	60	720	60	60	[a] 13,345
36-in steel vibratory	720	60	720	60	60	[a] 13,345
24-in steel impact	2,175	60	720	60	60	2,175
30-in steel impact	2,175	60	720	60	60	2,175
36-in steel impact	2,175	60	720	60	60	2,175

[a] 13,345 m is the maximum distance sound can travel before reaching land.

Protected Species Observers

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

Monitoring for Level A and Level B Harassment

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

Pre-Activity Monitoring

Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs would observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone would be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zones listed in Table 14, pile driving activity would be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity would not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zones or 15 minutes have passed without re-detection of the animal. When a marine mammal for which Level B harassment take is authorized is present in the Level B harassment zone, activities would begin and Level B harassment take would be recorded. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones would commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.,* the entire shutdown zone and surrounding waters must be visible to the naked eye).

Coordination With Local Marine Mammal Research Network

Prior to the start of pile driving for the day, the PSOs would contact the Orca Network to find out the location of the nearest marine mammal sightings. The Local Marine Mammal Research Network consists of a list of over 600 (and growing) residents, scientists, and government agency personnel in the United States 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 visual sighting network allows researchers to document presence and location of various marine mammal species.

Soft Start

Soft-start procedures are used to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors would be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-

energy strike sets. Soft start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

Bubble Curtain

A bubble curtain would be employed during impact installation or proofing of steel piles, unless the piles are driven in the dry, or water is less than 3 ft (0.9 m) in depth. A noise attenuation device would not be required during vibratory pile driving. If a bubble curtain or similar measure is used, it would distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column. Any other attenuation measure would be required to provide 100 percent coverage in the water column for the full depth of the pile. The lowest bubble ring would be in contact with the mudline for the full circumference of the ring. The weights attached to the bottom ring would ensure 100 percent mudline contact. No parts of the ring or other objects would prevent full mudline contact.

Based on our evaluation of the WSDOT's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

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

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

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

Visual Monitoring

Marine mammal monitoring during pile driving activities would be conducted by PSOs meeting NMFS' standards and in a manner consistent with the following:

- Independent PSOs (*i.e.,* not construction personnel) who have no other assigned tasks during monitoring periods would be used;
- At least one PSO would have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience; and
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator would be designated. The lead observer would be required to have prior experience working as a marine mammal observer during construction.

PSOs would 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.

During impact driving of all steel piles, and during vibratory removal of timber piles, WSDOT would have three PSOs stationed to monitor the project area: one at the construction site, one across Eagle Harbor looking toward the construction site, and one on board the Seattle-Bainbridge ferry. For vibratory driving of all steel piles, WSDOT would have five PSOs to monitor the project area: three at the locations described for impact pile driving, with one additional PSO stationed on the Seattle waterfront and one stationed on Alki Beach looking west toward Bainbridge Island.

Monitoring would be conducted 30 minutes before, during, and 30 minutes after all in water construction activities. In addition, observers would record all incidents of marine mammal occurrence, regardless of distance from activity, and would document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

Reporting

A draft marine mammal monitoring report would be submitted to NMFS within 90 days after the completion of pile driving activities, or 60 days prior to a requested date of issuance of any future IHAs for the project, or other projects at the same location, whichever comes first. The marine mammal report would include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report would include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including: (a) How many and what type of piles were driven or removed and the

method (*i.e.,* impact or vibratory); and (b) the total duration of time for each pile (vibratory driving) number of strikes for each pile (impact driving);

- PSO locations during marine mammal monitoring; and
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance.

For each observation of a marine mammal, the following would be reported:

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

If no comments are received from NMFS within 30 days, the draft reports would constitute the final reports. If comments are received, a final report addressing NMFS' comments would be required to be submitted within 30 days after receipt of comments. All PSO datasheets and/or raw sighting data would be submitted with the draft marine mammal report.

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, WSDOT would report the incident to the Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov*), NMFS and to the West Coast Region (WCR) regional stranding coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, WSDOT would immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHAs. WSDOT would not resume their activities until notified by NMFS.

The report would include the following information:

1. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
2. Species identification (if known) or description of the animal(s) involved;
3. Condition of the animal(s) (including carcass condition if the animal is dead);
4. Observed behaviors of the animal(s), if alive;
5. If available, photographs or video footage of the animal(s); and
6. General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

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

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

The takes from Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No serious injury or mortality is anticipated given the nature of the activities and measures designed to minimize the possibility of injury to marine mammals. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see Proposed Mitigation section).

To avoid repetition, the majority of our analysis applies to all the species listed in Table 3, given that the anticipated effects of these projects on different marine mammal stocks are expected to be relatively similar in nature. Where there are special circumstances for a species or stock (*e.g.,* gray whales), they are included as a separate subsection below.

NMFS has identified key factors which may be employed to assess the level of analysis necessary to conclude whether potential impacts associated with a specified activity should be considered negligible. These include (but are not limited to) the type and magnitude of taking, the amount and importance of the available habitat for the species or stock that is affected, the duration of the anticipated effect to the species or stock, and the status of the species or stock. The following factors support negligible impact determinations for all affected stocks.

Take by Level A harassment is proposed for three species (harbor seals, harbor porpoise, and Dall's porpoise) to account for the possibility that an animal could enter a Level A harassment zone prior to detection, and remain within that zone for a duration long enough to incur PTS. Any take by Level A harassment is expected to arise from, at most, a small degree of PTS, *i.e.,* minor degradation of hearing capabilities within regions of hearing that align most completely with the

energy produced by impact pile driving (*i.e.,* the low-frequency region below 2 kilohertz (kHz)), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of PTS. Two of the 3 species for which Level A harassment is proposed to be authorized are high-frequency cetaceans (harbor porpoise and Dall's porpoise), and the hearing ability of the third species for which Level A harassment is proposed to be authorized (harbor seal) below 2 kHz is also poor (NMFS, 2018). Given the hearing ranges of these three species, PTS incurred at the low frequencies of pile driving noise would not interfere either with conspecific communication or echolocation, and therefore would not be expected to impact on the survival or reproductive abilities of the affected individuals, let alone the stock or population.

As described above, NMFS expects that marine mammals would likely move away from an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start. WSDOT would also be required to shut down pile driving activities if marine mammals approach within hearing group-specific zones (see Table 14), further minimizing the likelihood and degree of PTS that would be incurred. Even absent mitigation, no serious injury or mortality from construction activities is anticipated or proposed to be authorized.

Effects on individuals that are taken by Level B harassment in the form of behavioral disruption, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as avoidance, increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.,* Thorson and Reyff 2006). Most likely, individuals would simply move away from the sound source and temporarily avoid the area where pile driving is occurring. If sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activities are occurring, particularly as the project is located in a busy harbor with high amounts of vessel traffic, including large ferry boats. We expect that any avoidance of the project areas by marine mammals would be temporary in nature and that any marine mammals that avoid the project areas during construction would not be permanently displaced. Short-term avoidance of the project areas and energetic impacts of interrupted foraging or other important behaviors is unlikely to affect the reproduction or survival of individual marine mammals, and the effects of behavioral disturbance on individuals is not likely to accrue in a manner that would affect the rates of recruitment or survival of any affected stock.

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

The projects are also not expected to have significant adverse effects on affected marine mammals' habitats. The project activities will not modify existing marine mammal habitat for a significant amount of time. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected (with no known particular importance to marine mammals), the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences. Aside from the biologically important area (BIA) for gray whales described below, there are no known areas of importance for other marine mammals, such as feeding or pupping areas, in the project area.

For all species and stocks, take would occur within a limited, relatively confined area (Eagle Harbor within central Puget Sound) of the stocks' ranges. Given the availability of suitable habitat nearby, any displacement of marine mammals from the project areas is not expected to affect marine mammals' fitness, survival, and reproduction due to the limited geographic area that will be affected in comparison to the much larger habitat for marine mammals in Puget Sound. Level A harassment and Level B harassment will be reduced to the level of least practicable adverse impact to the marine mammal species or stocks and their habitat through use of mitigation measures described herein. Some individual marine mammals in the project areas may be present and be subject to repeated exposure to sound from pile driving on multiple days. However, these individuals would likely return to normal behavior during gaps in pile driving activity. Eagle Harbor is a busy harbor and monitoring reports from previous in-water pile driving activities along the nearby Seattle waterfront (*e.g.,* WSDOT, 2022) indicate that marine mammals continue to remain in the greater project area throughout pile driving activities. Therefore, any behavioral effects of repeated or long duration exposures are not expected to negatively affect survival or reproductive success of any individuals. Thus, even repeated Level B harassment of some small subset of an overall stock is unlikely to result in any effects on rates of reproduction and survival of the stock.

Gray Whales

Puget Sound is part of a BIA for migrating gray whales (Calambokidis *et al.,* 2015). While Eagle Harbor is included in the BIA, gray whales typically remain further north in Puget Sound, primarily in the waters around Whidbey Island (Calambokidis *et al.,* 2018). Gray whales are rarely observed in central Puget Sound, and have never been documented inside Eagle Harbor. Therefore, even though the project areas overlap with the BIA, the infrequent occurrence of gray whales suggests that the projects would have minimal, if any, impact on the migration of gray whales in the BIA, and would therefore not affect reproduction or survival.

There is an ongoing UME for gray whales (see the Description of Marine Mammals in the Area of Specified Activities section of this notice). However, we do not expect the takes estimated to occur and proposed for authorization to exacerbate or compound upon this ongoing UME. As noted previously, no Level A harassment, serious injury, or mortality of gray whales is expected or authorized, and any Level B harassment takes of gray whales would most likely be in the form of behavioral disturbance. Preliminary findings from necropsied gray whales that are considered part of the ongoing UME have shown evidence of emaciation, suggesting that impacts to feeding would be of most concern. However, the project areas have not been identified as important for feeding of gray whales. Additionally, the project areas are not considered important for breeding gray whales. Therefore the projects are unlikely to disrupt any

critical behaviors (*e.g.,* feeding, mating) or have any effect on the reproduction or survival of gray whales, even in light of the ongoing UME.

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

- No mortality or serious injury is anticipated or proposed to be authorized for either project;
- Level A harassment is not anticipated or proposed to be authorized for 9 of the 12 species. For the other three species, Level A harassment would be in the form of a slight degree of PTS;
- Level B harassment would be in the form of behavioral disturbance, primarily resulting in avoidance of the project areas around where impact or vibratory pile driving is occurring, and some low-level TTS that may limit the detection of acoustic cues for relatively brief amounts of time in relatively confined footprint of the activities;
- Nearby areas of similar habitat value within Puget Sound are available for marine mammals that may temporarily vacate the project areas during construction activities for both projects;
- Effects on species that serve as prey for marine mammals from the activities are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations from either project;
- The number of anticipated takes by Level B harassment is relatively low for all stocks for both projects;
- The ensonifed areas from both projects are very small relative to the overall habitat ranges of all species and stocks, and will not adversely affect ESA-designated critical habitat, or cause more than minor impacts in any BIAS or any other areas of known biological importance;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat from either project;
- The efficacy of the mitigation measures in reducing the effects of the specified activities on all species and stocks for both projects; and
- Monitoring reports from similar work in Puget Sound that have documented little to no effect on individuals of the same species that could be impacted by the specified activities from both projects.

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

For all species and stocks other than killer whales from the West Coast Transient stock, the proposed take is below one-third of the stock abundance. The proposed take of transient killer whales, as a proportion of the stock abundance is 34.4 percent, if all takes are assumed to occur for unique individuals. In reality, it is unlikely that all takes would occur to different individuals. The project area represents a small portion of the stock's overall range (from Alaska to California (Muto *et al.,* 2019)) and based on sightings reports from the Orca Network, it is reasonable to expect that the same individual transient killer whales would be present within the project area on multiple days during the proposed activities. Therefore, it is more likely that there will be multiple takes of a smaller number of individuals within the project area, such that the number of individuals taken would be less than one third of the population.

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

Unmitigable Adverse Impact Analysis and Determination

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

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

No incidental take of ESA-listed species is proposed for authorization or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to WSDOT for conducting the Bainbridge Island Ferry Terminal Overhead Loading Replacement Project and Eagle Harbor Maintenance Facility Slip F Improvement Project in Bainbridge Island, Washington during the August 2022 to February 2023 in-water work season, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities.*

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any other aspect of this notice of proposed IHA for the proposed Bainbridge Island Ferry Terminal Overhead Loading Replacement Project and Eagle Harbor Maintenance Facility Slip F Improvement Project. We also request comment on the potential renewal of this proposed IHA as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform

decisions on the request for this IHA or a subsequent renewal IHA.

On a case-by-case basis, NMFS may issue a one-time, one-year renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly identical activities as described in the Description of Proposed Activities section of this notice is planned or (2) the activities as described in the Description of Proposed Activities section of this notice would not be completed by the time the IHA expires and a renewal would allow for completion of the activities beyond that described in the *Dates and Duration* section of this notice, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to the needed renewal IHA effective date (recognizing that the renewal IHA expiration date cannot extend beyond one year from expiration of the initial IHA).
- The request for renewal must include the following:

(1) An explanation that the activities to be conducted under the requested renewal IHA are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.,* reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take).

(2) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: August 4, 2022.

Kimberly Damon-Randall,

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

[FR Doc. 2022–17141 Filed 8–9–22; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XC222]

Pacific Fishery Management Council; Public Meeting

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

ACTION: Notice of public meeting.

SUMMARY: The Pacific Fishery Management Council's (Pacific Council) Coastal Pelagic Species Advisory Subpanel will hold one public meeting.

DATES: The meeting will be held Thursday, September 1, 2022, from 12 p.m. to 2 p.m. Pacific Daylight Time or until business for the day has been completed.

ADDRESSES: This meeting will be held online. Specific meeting information, including directions on how to join the meeting and system requirements will be provided in the meeting announcement on the Pacific Council's website (see *www.pcouncil.org*). You may send an email to Mr. Kris Kleinschmidt (*kris.kleinschmidt@noaa.gov*) or contact him at (503) 820–2412 for technical assistance.

Council address: Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, OR 97220–1384.

FOR FURTHER INFORMATION CONTACT: Jessi Doerpinghaus, Staff Officer, Pacific Council; telephone: (503) 820–2415.

SUPPLEMENTARY INFORMATION: The primary purpose of this online meeting is to discuss and potentially develop work products and recommendations for the Pacific Council's September 2022 meeting. Topics will include changes to Council Operating Procedure 23, ecosystem initiatives, and Council processes and efficiencies. Other items on the Pacific Council's September agenda may be discussed as well. The meeting agenda will be available on the Pacific Council's website in advance of the meeting.

Although non-emergency issues not contained in the meeting agenda may be discussed, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically listed in this document and any issues arising after publication of this document 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

Requests for sign language interpretation or other auxiliary aids should be directed to Mr. Kris Kleinschmidt (*kris.kleinschmidt@noaa.gov;* (503) 820–2412) at least 10 days prior to the meeting date.

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

Dated: August 4, 2022.

Rey Israel Marquez,

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

[FR Doc. 2022–17090 Filed 8–9–22; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Pribilof Islands, Taking for Subsistence Purposes

AGENCY: National Oceanic & Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of information collection, request for comment.

SUMMARY: The Department of Commerce, in accordance with the Paperwork Reduction Act of 1995 (PRA), invites the general public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden. The purpose of this notice is to allow for 60 days of public comment preceding submission of the collection to OMB.

DATES: To ensure consideration, comments regarding this proposed information collection must be received on or before October 11, 2022.

ADDRESSES: Interested persons are invited to submit written comments to Adrienne Thomas, NOAA PRA Officer, at *NOAA.PRA@noaa.gov.* Please reference OMB Control Number 0648–0699 in the subject line of your comments. Do not submit Confidential Business Information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or specific questions related to collection activities should be directed to Michael T. Williams, Pribilof Islands Program Manager, 222 W 7th Ave., Anchorage,