E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XD824]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Terminal 4 Expansion and Redevelopment Project at the Port of Grays Harbor, Washington

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

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

SUMMARY: NMFS has received a request from Ag Processing Inc. (AGP) for authorization to take marine mammals incidental to the Terminal 4 (T4) Expansion and Redevelopment Project (Project) at the Port of Grays Harbor (Port) in both the City of Aberdeen and City of Hoquiam, Grays Harbor County, Washington. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, 1-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 **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, NMFS and should be submitted via email to *ITP.Pauline@noaa.gov*. 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 below.

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 *https://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: Robert Pauline, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

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

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

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 NAO 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 May 12, 2023, NMFS received a request from AGP for an IHA to take marine mammals incidental to construction activities in the City of Aberdeen and City of Hoquiam, Grays Harbor County, Washington. Following NMFS' review of the application, AGP submitted a revised version on August 4, 2023. The application was deemed adequate and complete on February 20, 2024. AGP's request is for take of harbor seal, California sea lion, Steller sea lion and harbor porpoise by Level B harassment and, for harbor seal and harbor porpoise, by Level A harassment. Neither AGP nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Proposed Activity

Overview

AGP would work in partnership with the Port to construct a new export terminal at T4. AGP and the Port would each undertake separate stages of the construction; however, the IHA, if issued, would be held by AGP as the responsible party, and would authorize take associated with the combined specified activity, with AGP acting on behalf of the Port for that portion. The activity includes removal of existing piles and the installation of both temporary and permanent piles of various sizes. The construction would occur for 105 days, which would occur intermittently over the in-water work window (discussed below). Takes of marine mammals by Level A and Level B harassment would occur due to both impact and vibratory pile driving and vibratory removal. The purpose of the project is to expand T4 and redevelop adjacent parcels to increase rail and shipping capacity at the Port in order to accommodate growth of dry bulk, breakbulk, and roll-on/roll-off cargos.

Dates and Duration

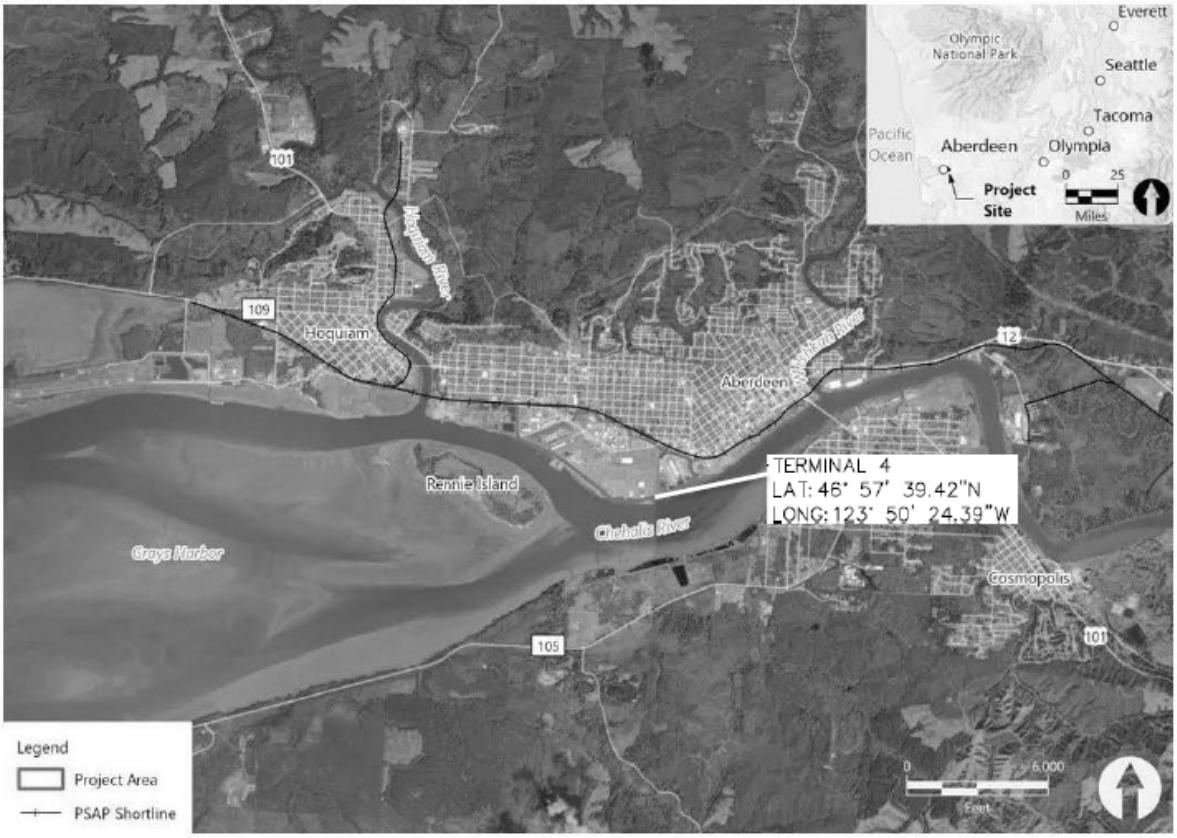
This IHA would be valid for one year from July 16, 2024 through July 15, 2025. Due to in-water work timing restrictions to protect Endangered Species Act (ESA)-listed

salmonids, all planned in-water construction including pile removal and installation is limited to a work window from July 16 through February 15. Pile driving would be completed intermittently throughout the daylight hours. All pile driving is expected to be completed during one season of construction.

Specific Geographic Region

The Project site is situated in both the City of Aberdeen and City of Hoquiam, Grays Harbor County, Washington in Township 17 North, Range 9 West, section 17, near where the Chehalis River enters Grays Harbor (figure 1). Land use in the Aberdeen area is a mix of residential, commercial, industrial, and open space and/or undeveloped lands.

Figure 1 -- Project Location in Grays Harbor, WA



Detailed Description of the Specified Activity

The T4 Project in-water work will include upgrades to the fender system on the T4 dock and the installation of a ship loader facility. The existing timber-piled fender system at the Terminal 4 Berth A (T4A) will be replaced with a modern pile-supported panel system and a modern suspended panel system at Berth B (T4B). Terminal 4's Berths A and B have distinctly different structural systems, necessitating piles to support the fender system at Berth A but not at Berth B. The new fender system will consist of a series of steel fender panels, each supported by one or more steel pipe piles at each fender location along T4A and supported by the existing deck only along T4B.

The proposed Project consists of vibratory pile driving installation and removal and impact pile installation. Existing piles will be removed from the substrate using the direct pull method. If direct pulling is unsuccessful, vibratory extraction will be used. Vibratory extractors are commonly used to remove steel pile where sediments allow. The vibratory hammer is mounted to the top of the pile, and the pile is then vibrated between 1,200 and 2,400 vibrations per minute. The vibrations liquefy and loosen the sediment surrounding the pile, allowing it to be removed with an upward lift from the crane. Broken or damaged piles that cannot be removed by either the vibratory hammer or direct pull will be cut off at or below the mudline. Based on the substrate conditions at the site, it is anticipated that most of the existing timber piles will be removed by direct pull. However, for the purposes of estimating take it is assumed they would all be subject to vibratory removal. The Project will include the removal of up to:

- 50, 18-inch timber piles
- 6, 12-inch steel H-piles
- 27, 16.5-inch pre-stressed concrete octagonal sections

New and replacement piles will be installed with a vibratory hammer or combination of a vibratory hammer and impact hammer. Impact pile driving would be

avoided to the extent feasible. Piles will be aligned with steel templates to ensure the correct position of the piles relative to each other. The proposed Project will also include installation of up to:

- 50, 36-inch steel pipe piles
- 24, 24-inch steel pipe piles
- 6, 12-inch steel H-sections
- 15, 18-inch steel pipe piles,
- 24, 24 to 30-inch steel pipe piles.

Additionally, a total of up to 24 temporary 24-inch steel piles may be installed for temporary construction use or to address unforeseen conditions. The temporary piles will be placed and removed as necessary. A summary of the proposed pile removal and installation methods for the dock upgrades and the ship loader facility are presented below in table 1 and table 2.

Table 1 -- Planned In-Water Pile Removal and Installation for T4 Dock Upgrades

Location	Pile Type and Size	Activity	Removal/ Install Method	Number of Piles	Total Days of Operation	Piles Per day	Hours Vib Install	Impact Strikes per Pile
Permanent Piles								
Terminal 4A and 4B	Up to 18-inch timber piles	Removal	Vibratory hammer, direct pull	Up to 50	Up to 12	Up to 10	Up to 5.0/ day or ~0.5/ pile	None
Terminal 4B	18-inch steel pipe pile	Installation	Vibratory hammer	Up to 15	Up to 6	Up to 6	Up to 3.0/ day or ~0.5/ pile	None
Terminal 4A	24-to-30-inch steel pipe pile	Installation	Vibratory hammer	Up to 24	Up to 18	Up to 6	Up to 6.0/ day or ~1.0/ pile	None

Table 2 -- In-water Pile Removal and Installation for New AGP Export Terminal, Shiploader

Location	Pile Type and Size	Activity	Install/ Removal Method	Number of Piles	Total Days of Operation	Piles per day	Avg. Hours Vibratory per Pile	Impact Strikes per Pile
Permanent Piles								
Terminal 4B	12-inch steel H sections	Removal	Vibratory hammer or direct pull	Up to 6	Up to 3	Up to 3	Up to 1.5/ day or ~0.5/ pile	None
Terminal 4B	16.5-inch concrete octagonal pile	Removal	Vibratory hammer, direct pull	Up to 27	Up to 9	Up to 8	Up to 8/ day or ~1.0/ pile	None
Terminal 4B	36-inch-diameter steel pipe pile	Install	Vibratory and impact hammer	Up to 50	Up to 30	Up to 4	Up to 8/ day or ~2/ pile	Up to 2,400/ day or ~600/ pile
Terminal 4B	New 24-inch steel pipe pile	Install	Vibratory and impact hammer	Up to 24	Up to 12	Up to 4	Up to 6/ day or ~1.5/ pile	Up to 2,000/ day or ~500/ pile
Terminal 4B	12-inch steel H-piles	Install	Vibratory hammer	Up to 6	Up to 3	Up to 3	Up to 1.5/ day or ~0.5/ pile	None
Temporary Piles								
Terminal 4B	24-inch steel pipe pile	Install	Vibratory hammer	Up to 24	Up to 6	Up to 8	Up to 4/ day or ~0.5/ pile	None
Terminal 4B	24-inch steel pipe pile	Removal	Vibratory hammer	Up to 24	Up to 6	Up to 8	Up to 4/ day or ~0.5/ pile	None

Above water construction would include rail upgrades and T4 cargo yard relocation and expansion which would all occur landward of the Grays Harbor shoreline. This above-water work is not expected to result in any take of marine mammals. Noise generated above the water would not be transmitted into the water to the degree that resulting underwater noise would be expected to cause disturbance and, none of the pinniped haulouts are located close enough to the project area to cause disturbance. Therefore, airborne noise is not considered further in this document.

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, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species*).

Table 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 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 proposed to be authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most

species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' Alaska and Pacific SARs. All values presented in table 3 are the most recent available at the time of publication (including from the draft 2023 SARs) and are available online at: (https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports).

Table 3 -- Species Likely Impacted by the Specified Activities[1]

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[2]	Stock abundance (CV, N_{min}, most recent abundance survey)[3]	PBR	Annual M/SI[4]
Odontoceti (toothed whales, dolphins, and porpoises)						
Family Phocoenidae (porpoises)						
Harbor porpoise	*Phocoena phocoena*	Northern Oregon/, Washington Coast	-,-; N	22,074 (0.391, 16,068, 2022)	161	3.2
Order Carnivora – 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	>321
Steller Sea Lion	*Eumetopias jubatus*	Eastern	-,-; N	36,308 (N/A, 36,308, 2022)	2,178	93.2
Family Phocidae (earless seals)						
Harbor Seal	*Phoca vitulina*	Oregon/Washington Coastal Stock	-, -, N	24,731[5] (1999)	UNK	10.6

1-Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://www.marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/;*).

2 - 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.

3 - NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable.

4 - 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, vessel strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range.

5- There is no current estimate of abundance available for this stock. Value presented is the most recent available and based on 1999 data.

As indicated above, all four species (with four managed stocks) in table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. While killer whales (*Orcincus orca*), humpback whales (*Megaptera novaeangilae*), gray whales (*Eschrichtius robustus*), and minke whales (*Balaenoptera acutorostrada*) have been sighted in Grays Harbor, the temporal and/or spatial occurrence of these species is such that take is not expected to occur. Furthermore, if any of these species are sighted approaching Level B harassment zones, construction activities would be shut down in order to avoid harassment. Therefore, take is not expected for these species and they are not discussed further in this document.

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). Little information exists on harbor porpoise movements and stock structure in Grays Harbor. Hall (2004) found that the frequency of sightings of harbor porpoises decreased with increasing depths beyond 150 meters, with the highest numbers observed at water depths ranging from 61 to 100 meters. Although harbor porpoises have been spotted in deep water, they tend to remain in shallower shelf waters (less than 150 meters), where they are most often observed in small groups of few individuals (Baird, 2003). Stranding incidents in the area have been rare.

California Sea Lion

California sea lions are found from Vancouver Island, British Columbia, to the southern tip of Baja, California. California Sea lions breed on the offshore islands of

southern and central California from May through July (Heath and Perrin, 2008). The California sea lion is the most frequently sighted pinniped found in Washington waters and uses haulout sites located on jetties, offshore rocks and islands, log booms, marina docks, and navigation buoys. 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.

The nearest documented California sea lion haulout sites to the Project site are at the Westport Docks, approximately 13 miles west of the Project site near the entrance to Grays Harbor (Jeffries *et al.* 2015), and another haulout observed in 1997 referred to as the mid-harbor flats located approximately 5.65 miles west of the Project site (Washinton Department of Fish and Wildlife (WDFW), 2022). During six aerial surveys conducted in 2014 and 2015, a total of 113 California sea lions were observed in Grays Harbor on the Westport docks (Jeffries *et al.,* 2015). Occurrences of California sea lion strandings have been rare near the project area.

Steller Sea Lion

Steller sea lions range from southeast Alaska to central California, including Washington. The species prefers beaches, ledges, and rocky reefs for breeding and hauling out (NMFS 2023c). In Washington, Steller sea lions occur mainly along the outer coast from the Columbia River to Cape Flattery (Jeffries *et al.,* 2000). Smaller numbers use the Strait of Juan de Fuca, the San Juan Islands, and Puget Sound south to about the Nisqually River mouth in Thurston and Pierce counties (Wiles, 2015). The Eastern Depleted Population Segment (DPS) 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 (M.M. Muto *et al.,* 2021). Most

pups (86 percent) are born in rookeries in southeast Alaska and British Columbia (Wiles, 2015). Steller sea lions occupy 22 haulouts in Washington, the largest of which are on the outer Olympic coast (Wiles, 2015).

WDFW Priority Habitat and Species Data does not indicate any observances of Steller sea lions in Grays Harbor (WDFW, 2022). The nearest documented Steller sea lion haulout sites to the Project site are at Split Rock, 35 miles north of the entrance to Grays Harbor, and at the mouth of the Columbia River, 46 miles south of the entrance to Grays Harbor (Jeffries *et al.,* 2000). A few Steller sea lions may haul out on buoys near the Westport marina, located 13 miles west of the Project site, or at Westport docks, similar to California sea lions. Steller sea lion strandings have been rare near the project area.) No other confirmed Steller sea lion observations have been located specific to Grays Harbor.

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 (Fisher, 1952; Bigg 1969, 1981). Harbor seals are the only pinniped species that occurs year-round and breeds in Washington waters. Pupping seasons vary by geographic region, with pups born in coastal estuaries (Columbia River, Willapa Bay, and Grays Harbor) from mid-April through June (Jeffries *et al.*, 2000). According to WDFW's atlas of seal and sea lion haulout sites (Jeffries *et al.,* 2000), all haulouts in Grays Harbor are associated with tidal flats; at high tide it is assumed that these animals are foraging elsewhere in the estuary.

The nearest documented harbor seal haulout site to the Project site is a low-tide haulout located 6 miles to the west.

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 *et al.*, 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 provides a discussion of the ways in which components of the specified activity may impact marine mammals and their habitat. The **Estimated Take of Marine Mammals** 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 of Marine Mammals** 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.

Description of Sounds 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. 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 to 20 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 activity 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 project would include impact pile driving, vibratory pile driving, and vibratory pile removal. The sounds produced by these activities fall into one of two general sound types: impulsive and non-impulsive. Impulsive sounds (*e.g.*, explosions, gunshots, 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; ANSI, 2005;

NMFS, 2018). Non-impulsive sounds (*e.g.*, aircraft, machinery operations such as drilling or dredging, vibratory pile driving, 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.*, Southall *et al.,* 2007).

Two types of pile hammers would be used on this project: impact and vibratory. Impact hammers operate by repeatedly dropping a heavy piston onto a pile to drive the pile into the substrate. Sound generated by impact hammers is characterized by rapid rise times and high peak levels, a potentially injurious combination (Hastings and Popper, 2005). Vibratory hammers install piles by vibrating them and allowing the weight of the hammer to push them into the sediment. Vibratory hammers produce significantly less sound than impact hammers. Peak sound pressure levels (SPLs) may be 180 dB or greater, but are generally 10 to 20 dB lower than SPLs generated during 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 the AGP's proposed activity on marine mammals could involve both non-acoustic and acoustic stressors. Potential non-acoustic stressors include the physical presence of the equipment and personnel; however, any impacts to marine mammals are expected to primarily be acoustic in nature.

Auditory Effects

The introduction of anthropogenic noise into the aquatic environment from pile driving and removal is the primary means by which marine mammals may be harassed from AGP's specified activity. In general, animals exposed to natural or anthropogenic

sound may experience physical and behavioral effects, ranging in magnitude from none to severe (Southall *et al.,* 2007, 2021). Exposure to pile driving noise has the potential to result in auditory threshold shifts (TS) 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 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 noise on marine mammals are dependent on several factors, including, but not limited to, sound type (*e.g.*, impulsive vs. non-impulsive), the species, age and sex class (*e.g.*, adult male vs. mom with calf), duration of exposure, the distance between the pile and the animal, received levels, behavior at time of exposure, and previous history with exposure (Wartzok *et al.,* 2004; Southall *et al.,* 2007). Here we discuss physical auditory effects (TSs) followed by behavioral effects and potential impacts on habitat.

NMFS defines a noise-induced 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 (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, as with the exception of a single study unintentionally inducing PTS in a harbor seal (Kastak *et al.,* 2008), there are no empirical data measuring PTS in marine mammals 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) — 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 (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 (2015), marine mammal studies have shown the amount of TTS increases with cumulative sound exposure level (SELcum) in an accelerating fashion: At low exposures with lower SELcum, the amount of TTS is typically small and the growth curves have shallow slopes. At exposures with higher SELcum, 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 (*Tursiops truncatus*), 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). 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. 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).

Installing piles requires a combination of impact pile driving and vibratory pile driving. For the project, these activities would not occur at the same time and there would likely be pauses in activities producing the sound during each day. Given these pauses and that many marine mammals are likely moving through the action area 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, Southall *et al.*, 2021).

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); 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.,* 2003; Southall *et al.,* 2007, 2021; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not

only among individuals but also within exposures of an individual, depending on previous experience with a sound source, context, and numerous other factors (Ellison *et al.,* 2012, Southall *et al.*, 2021), 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. For a review of studies involving marine mammal behavioral responses to sound, see Southall *et al.,* 2007; Gomez *et al.,* 2016; and Southall *et al.,* 2021 reviews.

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 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.

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. Grays Harbor is home to a busy industrial port as well as large numbers small private vessels that transit the area on a regular basis; therefore, background sound levels in the bay are likely already elevated.

Marine Mammal Habitat Effects

AGP's construction activities could have localized, temporary impacts on marine mammal habitat by increasing in-water SPLs and slightly decreasing water quality. Construction activities are of short duration and would likely have temporary impacts on marine mammal habitat through increases in underwater sound. Increased noise levels may affect acoustic habitat (see masking discussion above) and adversely affect marine mammal prey in the vicinity of the project area (see discussion below). During pile driving, elevated levels of underwater noise would ensonify the Port where both fish and mammals may occur and could affect foraging success.

In-water pile driving and pile removal would also cause short-term effects on water quality due to increased turbidity. Local currents are anticipated to disburse suspended sediments produced by project activities at moderate to rapid rates depending

on tidal stage. AGP would employ standard construction best management practices, thereby reducing any impacts. Considering the nature and duration of the effects, combined with the measures to reduce turbidity, the impact from increased turbidity levels is expected to be discountable.

Pile installation and removal may temporarily increase turbidity resulting from suspended sediments. Any increases would be temporary, localized, and minimal. AGP must comply with state water quality standards during these operations by limiting the extent of turbidity to the immediate project area. In general, turbidity associated with pile installation is localized to about a 25-feet (ft) radius around the pile (Everitt *et al.*, 1980). Cetaceans are not expected to enter the harbor and be close enough to the project pile driving areas to experience effects of turbidity, and any pinnipeds would likely be transiting the area and could avoid localized areas of turbidity. Therefore, the impact from increased turbidity levels is expected to be discountable to marine mammals. Furthermore, pile driving and removal at the project site would not obstruct movements or migration of marine mammals.

Effects on Prey

Construction activities would produce continuous (*i.e.*, vibratory pile driving) and impulsive (*i.e.*, impact driving) sounds. Fish react to sounds that are especially strong and/or intermittent low-frequency sounds. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. 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, although several are based on studies in support of large, multiyear bridge construction projects (*e.g.*, Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Sound pulses at received levels may cause noticeable changes in behavior (Pearson *et al.,* 1992; Skalski *et al.,*

1992). SPLs of sufficient strength have been known to cause injury to fish and fish mortality.

Impacts on marine mammal prey (*i.e.*, fish or invertebrates) of the immediate area due to the acoustic disturbance are possible. The duration of fish or invertebrate avoidance or other disruption of behavioral patterns in this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution and behavior is anticipated. Further, significantly large areas of fish and marine mammal foraging habitat are available in the nearby waters.

The duration of the construction activities is relatively short, with pile driving and removal activities expected to take only 105 days. Each day, construction would occur for no more than 12 hours during the day and pile driving activities would be restricted to daylight hours. The most likely impact to fish from pile driving activities at the project area would be temporary behavioral avoidance of the area. In general, impacts to marine mammal prey species are expected to be minor and temporary due to the short timeframe for the project.

Construction activities, in the form of increased turbidity, have the potential to adversely affect fish in the project area. Increased turbidity is expected to occur in the immediate vicinity (on the order of 10 ft (3 meters (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 fish are expected to be minor or negligible. In addition, best management practices would be in effect, which would limit the extent of turbidity to the immediate project area.

In summary, given the relatively short daily duration of sound associated with individual pile driving and events and the relatively small areas being affected, pile driving activities associated with the proposed action are not likely to have a permanent,

adverse effect on any fish habitat, or populations of fish species. Thus, we conclude that impacts of the specified activity 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 of Marine Mammals

This section provides an estimate of the number of incidental takes proposed for authorization through the IHA, which will inform NMFS' consideration of "small numbers," the negligible impact determinations, and impacts on subsistence uses.

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

Authorized takes would primarily be by Level B harassment, as use of the acoustic stressors (*i.e.*, pile driving) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for high frequency species (harbor porpoise) and phocids (harbor seal). Auditory injury is unlikely to occur for other species due to PTS zone sizes. 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. Generally speaking, Level B harassment take estimates based on these behavioral harassment thresholds are expected to include any likely takes by TTS as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

AGP's proposed activity includes the use of continuous (vibratory driving and removal) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μPa 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). AGP's proposed activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving and removal) sources.

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

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

Table 5 – Thresholds Identifying the Onset of Permanent Threshold Shift

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

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

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

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

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

commercial and industrial activities in the project area may contribute to elevated background noise levels which may mask sounds produced by the project.

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:

$TL = B * \mathrm{Log}_{10} (R_1/R_2)$,

where

TL = transmission loss in dB

B = transmission loss coefficient

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

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

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6-dB reduction in sound level for each doubling of distance from the source (20*log[range]). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source (10*log[range]). A practical spreading value of 15 is often used under conditions, such as the project site, where water increases with depth as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Practical spreading loss is assumed here.

The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. In order to calculate the distances to the Level A harassment and the Level B harassment sound thresholds for the methods and piles being used in this project, NMFS used acoustic monitoring data from other locations to develop proxy source levels for the various pile types, sizes and methods. The project includes vibratory and impact pile installation of steel and vibratory removal of steel, timber piles, and concrete piles. Pile sizes range from 12-in to 36-in. Source levels for the various pile sizes and driving methods are presented in table 6. Bubble curtains would be employed during all impact driving, with an assumed 5 dB effective attenuation (Caltrans 2020).

Table 6 -- Proxy Sound Source Levels for Pile Sizes and Driving Methods

Method and Pile Type	Sound Level at 10 m (dB rms)		
Vibratory Hammer			
36-inch steel piles (installation)[1]	170		
30-inch steel pipe piles (installation)[2]	159		
24-inch steel piles (installation and removal)[3]	154		
18-inch steel pipe piles (installation)[4]	158		
12-inch steel H-piles (installation and removal)[5]	150		
18-inch creosote timber piles (removal)[6]	162		
16.5-inch concrete octagonal sections (removal)[6]	163		
Impact Hammer	dBrms	dBSEL	dBpeak
24-inch steel piles (single strike)[7]	190 (185)	177 (172)	203 (198)
36-inch steel piles (single strike)[8]	193 (188)	183 (178)	210 (205)

[1] Laughlin 2012 as cited in WSDOT 2020
[2] 2023 NMFS Calculations based on data from Denes *et al.* 2016 (Auke Bay, Ketchikan, Kake), Edmonds Ferry Terminal (Laughlin 2011, 2017), Colman Dock - Seattle Ferry Terminal (Laughlin 2012), Kodiak Pier 3 (PND Engineers, 2015)
[3] 2023 NMFS Calculations based on data from Naval Base Kitsap Bangor Test Pile (Navy (2012)) and EHW-2 (Navy(2013)), Gustavus (Miner, 2020)
[4] Caltrans 2020

[5] From generic value recommended in the Caltrans 2015 summary table, as it was representative of the data and provided a citable data point and included projects from San Rafael, CA; Norfolk Naval Station, VA; Chevron Long Wharf, CA; JEB Little Creek, Norfolk, VA

[6] Data not available, anticipated noise levels are based on available noise levels for the vibratory removal of 20-inch diameter concrete piles (Naval Facilities Engineering Systems Command Southwest 2022). Noise levels were back-calculated to a 10 meter measurement distance assuming a 15 log transmission loss. Based on prior coordination with NMFS for the Johnson Pier Expansion and Dock Replacement Project IHA Request (M&N 2022) this data source is an acceptable surrogate for timber piles (Pers. comm. Cara Hotchkin 2023).

[7] From Caltrans 2015, pooled and averaged from 20 to 24" piles from Stockton WWTP, CA; Bradshaw Bridge, CA; Rodeo Dock, CA; Tongue Point Pier,OR; Cleer Creek WWTP, CA; SR 520 Test Pile, WA; Portland Light Rail, OR; Port of Coeyman, NY; Pritchard Lake, CA; Amorco Wharf, CA; 5th Street Bridge, CA; Schuyler Heim Bridge, CA; Tanana River, AK, NBK EHW2, WA; Crescent City, CA; Avon Wharf, CA; Orwood Bridge Replacement, CA; Tesoro Amorco Wharf, CA; USCG Floating Dock, CA; Norfolk, VA; Plains Terminal, CA. A 5dB attenuation applied in parenthesis for the use of a bubble curtain.

[8] Caltrans 2020, unattenuated data used as reference. A 5dB attenuation applied in parenthesis for the use of a bubble curtain.

Note: It is assumed that noise levels during vibratory pile installation and vibratory pile removal are similar.

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 impact or vibratory pile driving 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. Inputs used for impact driving in the optional User Spreadsheet tool, and the resulting estimated isopleths, are reported below in table 7 and table 8 below.

Table 7 -- User Spreadsheet Inputs for Impact Driving

Inputs	36-inch Impact	24-inch Impact
Spreadsheet Tab Used	E.1) Impact Pile Driving (STATIONARY SOURCE: Impulsive, Intermittent)	
Source Level (Single Strike/shot SEL)	183	177
Weighting Factor Adjustment (kHz)	2	2
Strikes per pile	600	500
Piles Per day	4	4
Propagation (xLogR)	15	15
Distance of source level measurement (meters)	10	10

Table 8 -- Calculated Level A Harassment Zones, Impact Installation (m)

Pile Type	Level A Threshold		
	High-Frequency Cetaceans 155 dB SELcum	Phocid Pinnipeds 185 dB SELcum	Otariid Pinnipeds 203 db SELcum
36-inch steel piles (installation)	990	445	33
24-inch steel piles, permanent (installation)	349	157	12

Table 9 shows the User Spreadsheet Inputs for vibratory driving and the resulting Level A harassment zones are shown in table 10. Calculated Level B harassment isopleths are found in table 11.

Table 9 -- User Spreadsheet Inputs for Vibratory Driving

Inputs	36-in Steel (install)	24-to-30-in steel (install)	24-in steel perm. (install)	24-in steel temp. (install and removal)	18-in steel (install)	12-inch steel H-piles (install and removal)	18-in timber (removal)	16.5-inch concrete (removal)

Tab Used	A.1) Vibratory Pile Driving (STATIONARY: Non-impulsive, Continuous)							
Source Level (RMS)	170	159	154	154	158	150	162	163
Weighting Factor Adjustment (kHz)	2.5							
Duration (minutes)	120	60	90	30	30	30	30	60
Piles per day	4	6	4	8	6	3	10	8
Propagation (xLogR)	15							
Distance of source level (m)	10							

Table 10 -- Calculated Level A Harassment Zones, Vibratory Installation and Removal (m)

Pile Type	Level A Threshold		
	High-Frequency Cetaceans 173 dB SELcum	Phocid Pinnipeds 201 dB SELcum	Otariid Pinnipeds 219 dB SELcum
36-inch steel piles (installation)	161	67	5
24-to-30-inch steel pipe piles (installation)	25	10	1
24-inch steel piles, permanent (installation)	12	5	1
24-inch steel piles, temporary (installation and removal)	9	4	1
18-inch steel pipe piles (installation)	13	6	1
12-inch steel H-piles (installation and removal)	3	1	1
18-inch creosote timber piles (removal)	35	15	1
16.5-inch concrete octagonal sections (removal)	55	23	2

Table 11 -- Level B Harassment Zones, Vibratory and Impact Driving (m)

Pile Type	Level B Threshold All Marine Mammals 120 dBrms
120 dB threshold	
36-inch steel piles (installation)	21,545
24-to-30-inch steel pipe piles (installation)	3,981
24-inch steel piles, (installation and removal)	1,847
18-inch steel pipe piles (installation)	3,415
12-inch steel H-piles (installation and removal)	1,000
18-inch creosote timber piles (removal)	6,310
16.5-inch concrete octagonal sections (removal)	7,365
160 dB threshold	
36-inch steel piles (Installation)	736
24-inch steel piles, permanent (Installation)	465

Marine Mammal Occurrence and Take Estimation

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which will inform the take calculations. The primary source for density estimates is from the Navy Marine Species Density Database (NMSDD) Phase III for the Northwest Training and Testing Study Area (Navy, 2019) although density calculated from other aerial surveys was used for harbor seal. These density estimates will be used to calculate take due to the lack of site-specific data that is available.

To quantitatively assess potential exposure of marine mammals to noise levels from pile driving over the NMFS threshold guidance, the following equation was first used to provide an estimate of potential exposures within estimated harassment zones:

Exposure estimate = N × Level B harassment zone (km^2) × maximum days of pile driving where

N = density estimate (animals per km^2) used for each species.

Harbor Seal

There are no harbor seal density estimates for Grays Harbor, but the Navy Marine Species Density Database (NMSDD 2020) estimates the density of harbor seals in the waters offshore of Grays Harbor as 0.3424 animals per square kilometer. However, harbor seals are anticipated to be more common within Grays Harbor than within offshore areas. Therefore, this density estimate may underestimate actual densities for the project site.

Two aerial surveys of Grays Harbor were conducted in June of 2014. The average count was multiplied by a regional correction factor of 1.43 (Huber *et al.,* 2001) to yield the estimated harbor seal abundance. A correction factor was used because aerial surveys of harbor seals on land only produce a minimum assessment of the population and animals in the water must be accounted for to estimate total abundance. The average survey count (7,495 seals/survey) was used to calculate density by dividing by the area of Grays Harbor (243 km^2) resulting in a calculated density of 30.85 animals per km^2). This value was used to calculate estimated take by both Level A harassment and Level B harassment during the driving of the various types of piles for the Project. Estimated takes by Level B harassment are shown in table 12 and takes by Level A harassment are shown in table 13.

The largest Level A harassment zone for phocid pinnipeds extends from 157 to 445 m from the source during impact driving. AGP and NMFS agreed on the implementation of a 100 m shutdown zone in order to shut down for those animals closest to the pile driving activity but allow for pile driving to continue for animals that are beyond 100 m (see **Proposed Mitigation** section). AGP is confident they can complete work in an efficient manner with the occurrence of harbor seals in the project area. AGP has requested authorization of 18,830 takes of harbor seals by Level B

harassment as well as 73 harbor seal takes by Level A harassment. NMFS concurs with the requests and is proposing to authorize take of harbor seals at these levels.

Table 12 – Calculated Take Estimate of Harbor Seals by Level B Harassment

Pile Type	Installation/ Removal Method	Harbor Seal Density per km^2	Days of Pile Driving	Level B Area (km^2)	Shutdown Zone Distance	Shutdown Area (km^2)	Level B Take Estimate
36-inch steel piles (installation)	Vibratory	30.85	24	10.2	70	0.03	7,529.87
36-inch steel piles (installation)	Impact to proof	30.85	6	1.07	100	0.05	188.80
24-to-30-inch steel pipe piles (installation)	Vibratory	30.8	18	4.95	10	0.009	2,739.29
24-inch steel piles, permanent (installation)	Vibratory	30.85	10	2.72	10	0.004	804.37
24-inch steel piles, permanent (installation)	Impact to proof	30.85	2	0.46	100	0.05	30.36
24-inch steel piles, temporary (installation and removal)	Vibratory	30.85	12	2.72	10	0.004	1,005.46
18-inch steel pipe piles (installation)	Vibratory	30.85	6	4.3	10	0.009	794.26
12-inch steel H-piles (installation and removal)	Vibratory	30.85	6	1.7	10	0.004	313.93
18-inch creosote timber piles (removal)	Vibratory	30.85	12	7.4	15	0.014	2,734.30
16.5-inch concrete octagonal sections (removal)	Vibratory	30.85	9	7.97	25	0.011	2,209.82
Total							**18,350**

Table 13 – Calculated take Estimate of Harbor Seals by Level A Harassment

Pile Type	Installation/ Removal Method	Harbor Seal Density per km^2	Days of Pile Driving	Level A Area (km^2)	Shutdown Zone Distance	Shutdown Area (km^2)	Level A Take Estimate

36-inch steel piles (installation)	Vibratory	30.85	24	0.03	70	0.03	0.00
36-inch steel piles (installation)	Impact to proof	30.85	6	0.43	100	0.05	70.34
24-to-30-inch steel pipe piles (installation)	Vibratory	30.8	18	0.009	10	0.009	0.00
24-inch steel piles, permanent (installation)	Vibratory	30.85	10	0.002	10	0.004	0.00
24-inch steel piles, permanent (installation)	Impact to proof	30.85	2	0.084	100	0.05	2.52
24-inch steel piles, temporary (installation and removal)	Vibratory	30.85	12	0.0018	10	0.004	0.00
18-inch steel pipe piles (installation)	Vibratory	30.85	6	0.005	10	0.009	0.00
12-inch steel H-piles (installation and removal)	Vibratory	30.85	6	0.0009	10	0.004	0.00
18-inch creosote timber piles (removal)	Vibratory	30.85	12	0.014	15	0.014	0.00
16.5-inch concrete octagonal sections (removal)	Vibratory	30.85	9	0.01	25	0.011	0.00
Total							**73**

California Sea Lion

The NMSDD estimates the density of California sea lions in the waters offshore of Grays Harbor as 0.0288, 0.5573 and 0.66493 animals per km^2 in summer, fall and winter, respectively (Navy, 2019). AGP conservatively utilized the higher winter density value to calculate estimated take. Based on this density estimate, the number of California sea lions that may be taken by Level B harassment is presented in table 14. Take by Level A harassment is not anticipated since the nearest documented California sea lion haulout sites are at the Westport Docks, approximately 13 miles west of the Project site near the entrance to Grays Harbor (Jeffries *et al.,* 2015), and another haulout observed in 1997 referred to as the mid-harbor flats located approximately 5.65 miles west of the Project site (WDFW, 2022). Additionally, the largest Level A harassment zone is 33 m, with all the other zones for both impact and vibratory driving no more than 12 m.

AGP has requested and NMFS is proposing to authorize 387 California sea lion takes by Level B harassment as shown in table 14.

Table 14 -- Level B Harassment Take Estimates for California Sea Lions

Pile Type	Installation/ Removal Method	California Sea lion Density per km^2	Days of Pile Driving	Level B Area (km^2)	Shutdown Zone Distance	Shutdown Area (km^2)	Level B Take Estimate
36-inch steel piles (installation)	Vibratory	0.6493	24	10.2	10	0.03	158.48
36-inch steel piles (installation)	Impact to proof	0.6493	6	1.07	35	0.016	4.11
24-to-30-inch steel pipe piles (installation)	Vibratory	0.6493	18	4.95	10	0.009	57.75
24-inch steel piles, permanent (installation)	Vibratory	0.6493	10	2.72	10	0.004	16.93
24-inch steel piles, permanent (installation)	Impact to proof	0.6493	2	0.46	15	0.006	0.71
24-inch steel piles, temporary (installation and removal)	Vibratory	0.6493	12	2.72	10	0.004	21.16
18-inch steel pipe piles (installation)	Vibratory	0.6493	6	4.3	10	0.009	16.72
12-inch steel H-piles (installation and removal)	Vibratory	0.6493	6	1.7	10	0.004	6.61
18-inch creosote timber piles (removal)	Vibratory	0.6493	12	7.4	10	0.009	57.59
16.5-inch concrete octagonal sections (removal)	Vibratory	0.6493	9	7.97	10	0.004	46.55
Total							**387**

Steller Sea Lion

The NMSDD estimates the density of Steller sea lions in the waters offshore of Grays Harbor as 0.1993 animals per km^2 in the summer, 0.1678 animals per km^2 in the winter/spring, and 0.1390 animals per km^2 in the fall (Navy, 2020). The summer density estimate of 0.1993 per km^2 has been used as a conservative surrogate for Steller sea lion density within Grays Harbor.

WDFW Priority Habitat and Species Data does not indicate any observances of Steller sea lions in Grays Harbor (WDFW, 2022). The nearest documented Steller sea lion haulout sites to the Project site are at Split Rock, 35 miles north of the entrance to Grays Harbor, and at the mouth of the Columbia River, 46 miles south of the entrance to Grays Harbor (Jeffries *et al.*, 2000). A few Steller sea lions may haul out on buoys near the Westport marina, located 13 miles west of the Project site, or at Westport docks, similar to California sea lions. Given that the Level A harassment zone varies from one (1) to five (5) meters during vibratory pile installation and 12 to 33 meters during impact installation, in addition to their uncommon appearances in Grays Harbor, no take by Level A harassment is anticipated or proposed by NMFS.

AGP has requested and NMFS is proposing to authorize 119 Steller sea lion takes by Level B harassment as shown in table 15.

Table 15 -- Level B Harassment Take Estimates for Steller Sea Lions

Pile Type	Installation/ Removal Method	Stellar Sea lion Density per km^2	Days of Pile Driving	Level B Area (km^2)	Shutdown Zone Distance	Shutdown Area (km^2)	Level B Take Estimate
36-inch steel piles (installation)	Vibratory	0.1993	24	10.2	10	0.03	48.65
36-inch steel piles (installation)	Impact to proof	0.1993	6	1.07	35	0.016	1.26
24-to-30-inch steel pipe piles (installation)	Vibratory	0.1993	18	4.95	10	0.009	17.73
24-inch steel piles, permanent (installation)	Vibratory	0.1993	10	2.72	10	0.004	5.20
24-inch steel piles, permanent (installation)	Impact to proof	0.1993	2	0.46	15	0.006	0.22
24-inch steel piles, temporary (installation and removal)	Vibratory	0.1993	12	2.72	10	0.004	6.50
18-inch steel pipe piles (installation)	Vibratory	0.1993	6	4.3	10	0.009	5.13
12-inch steel H-piles (installation and removal)	Vibratory	0.1993	6	1.7	10	0.004	2.03
18-inch creosote timber piles (removal)	Vibratory	0.1993	12	7.4	10	0.009	17.68
16.5-inch concrete octagonal sections (removal)	Vibratory	0.1993	9	7.97	10	0.004	14.29
Total							**119**

Harbor Porpoise

The Navy has estimated that density of harbor porpoises in the waters offshore of Grays Harbor is 0.467 animals per km^2 (Navy, 2019). AGP acknowledges that this value may be an overestimate since it is based on offshore observations. However, lacking additional survey or anecdotal evidence, this NMSDD value is used as a conservative estimate for the number of harbor porpoises that are expected to be within Grays Harbor. Estimated take by Level B harassment is shown in table 16.

During impact pile driving, the Level A harassment isopleths range from 349 to 990 m for high-frequency cetaceans and up to 161 m during vibratory driving. AGP has proposed to implement a maximum of 100-m shutdown zone. This leaves large areas where take of harbor porpoises by Level A harassment could occur. It would be challenging for protected species observers to effectively monitor out to the full extent of these zones given the cryptic nature of harbor porpoises. Therefore, take was estimated using porpoise density multiplied by the area of the Level A harassment zone beyond 100 m (in cases where the Level A harassment zone exceeded the shutdown zone) multiplied by the number of driving days as shown in table 17.

AGP has requested and NMFS is proposing to authorize 277 harbor porpoise takes by Level B harassment and 5 harbor porpoises by Level A harassment.

Table 16 – Calculated Take Estimate of Harbor Porpoise by Level B Harassment

Pile Type	Installation/ Removal Method	Harbor Porpoise Density per km^2	Days of Pile Driving	Level B Area (km^2)	Shutdown Zone Distance	Shutdown Area (km^2)	Level B Take Estimate
36-inch steel piles (installation)	Vibratory	0.467	24	10.2	100	0.05	113.76
36-inch steel piles (installation)	Impact to proof	0.467	6	1.07	100	0.05	2.86
24-to-30-inch steel pipe piles (installation)	Vibratory	0.467	18	4.95	25	0.023	41.42
24-inch steel piles, permanent (installation)	Vibratory	0.467	10	2.72	10	0.004	12.18
24-inch steel piles, permanent (installation)	Impact to proof	0.467	2	0.46	100	0.05	0.46
24-inch steel piles, temporary (installation and removal)	Vibratory	0.467	12	2.72	10	0.004	15.22
18-inch steel pipe piles (installation)	Vibratory	0.467	6	4.3	15	0.014	12.01
12-inch steel H-piles (installation and removal)	Vibratory	0.467	6	1.7	10	0.004	4.75
18-inch creosote timber piles (removal)	Vibratory	0.467	12	7.4	35	0.034	41.28
16.5-inch concrete octagonal sections (removal)	Vibratory	0.467	9	7.97	55	0.025	33.39
Total							**277**

Table 17 – Calculated Take Estimate of Harbor Porpoise by Level A Harassment

Pile Type	Installation/ Removal Method	Harbor Porpoise Density per km^2	Days of Pile Driving	Level A Area (km^2)	Shutdown Zone Distance	Shutdown Area (km^2)	Level A Take Estimate

36-inch steel piles (installation)	Vibratory	0.467	24	0.086	100	0.05	0.40
36-inch steel piles (installation)	Impact to proof	0.467	6	1.64	100	0.05	4.46
24-to-30-inch steel pipe piles (installation)	Vibratory	0.467	18	0.023	25	0.023	0.00
24-inch steel piles, permanent (installation)	Vibratory	0.467	10	0.005	10	0.004	0.00
24-inch steel piles, permanent (installation)	Impact to proof	0.467	2	0.28	100	0.05	0.26
24-inch steel piles, temporary (installation and removal)	Vibratory	0.467	12	0.004	10	0.004	0.00
18-inch steel pipe piles (installation)	Vibratory	0.467	6	0.012	15	0.014	0.00
12-inch steel H-piles (installation and removal)	Vibratory	0.467	6	0.001	10	0.004	0.00
18-inch creosote timber piles (removal)	Vibratory	0.467	12	0.034	35	0.034	0.00
16.5-inch concrete octagonal sections (removal)	Vibratory	0.467	9	0.025	55	0.025	0.00
Total							**5**

Table 18 -- Estimated Take by Level A and Level B Harassment, by Species and Stock

Common Name	Stock	Stock Abundance	Level A	Level B	Total proposed take	Proposed take as percentage of stock
Harbor porpoise	Northern Oregon/Washington Coast	22,074	5	277	282	1.3
Steller sea lion	Eastern U.S.	36,308	--	119	119	0.3
California sea lion	U.S.	257,606	--	387	387	0.2
Harbor seal	OR/WA coast stock	24,731[a]	73	18,350	18,423	74.5

[a]There is no current estimate of abundance available for this stock. Value presented is the most recent available and based on 1999 data.

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.

Pre-Activity Monitoring - Prior to the start of daily in-water construction activity, or whenever a break in pile driving/removal 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 zone, a soft-start cannot proceed until the animal has left the zone or has not been observed for 15 minutes. If the monitoring zone has been observed for 30 minutes and marine mammals are not present within the zone, soft-start procedures can commence and work can continue. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated in Table 19 are clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals. If work ceases for more than 30 minutes, the pre-activity monitoring of both the monitoring zone and shutdown zone would commence.

Implementation of Shutdown Zones for Level A Harassment - For all pile driving/removal activities, AGP would implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Implementation of shutdowns would be used to avoid or minimize takes by Level A harassment from vibratory and impact pile driving for all four

species for which take may occur. Shutdown zones would be based upon the Level A harassment isopleth for each pile size/type and driving method where applicable. However, a maximum shutdown zone of 100 m was requested by AGP and is being proposed by NMFS. This is anticipated to reduce Level A harassment exposures without resulting in a substantial risk to the project schedule that could occur if marine mammals repeatedly enter into larger shutdown zones.

A minimum shutdown zone of 10 m would be required for all in-water construction activities to avoid physical interaction with marine mammals. Proposed shutdown zones for each activity type are shown in table 19.

Table 19 -- Shutdown Zones during Pile Installation and Removal (m)

Pile Type	Shutdown Zone			Level B Harassment Zone
	High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds	
Impact				
36-inch steel piles (installation)	100	100	35	740
24-inch steel piles, permanent (installation)	100	100	15	465
Vibratory				
36-inch steel piles (installation)	100	70	10	21,550
24-to-30-inch steel pipe piles (installation)	25	10	10	3,985
24-inch steel piles, permanent (installation)	15	10	10	1,850
24-inch steel piles, temporary (installation and removal)	10	10	10	1,850
18-inch steel pipe piles (installation)	15	10	10	3,415
12-inch steel H-piles (installation and removal)	10	10	10	1,000
18-inch creosote timber piles (removal)	35	15	10	6,310

16.5-inch concrete octagonal sections (removal)	55	25	10	7,365

All marine mammals would be monitored in the Level B harassment zones and throughout the area as far as visual monitoring can take place. If a marine mammal enters the Level B harassment zone, in-water activities would continue and protected Species Observers (PSOs) would document the animal's presence within the estimated harassment zone.

If a species for which authorization has not been granted, or a species which has been granted but the authorized takes are met, is observed approaching or within the Level B harassment zone, pile driving activities will be shut down immediately.. Activities will not resume until the animal has been confirmed to have left the area or 15 minutes has elapsed with no sighting of the animal.

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

Bubble Curtain - A bubble curtain would be employed during impact installation or proofing of steel piles. 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. Air flow to the bubblers must be balanced around the circumference of the pile.

Based on our evaluation of the applicant's proposed measures, 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 activity; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);

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

Visual Monitoring

Monitoring shall be conducted by NMFS-approved observers in accordance with sections 13.1 and 13.2 of the application. Trained observers shall be placed from the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. Observer training must be provided prior to project start, and shall include instruction on species identification (sufficient to distinguish the species in the project area), description and categorization of observed behaviors and interpretation of behaviors that may be construed as being reactions to the specified activity, proper completion of data forms, and other basic components of biological monitoring, including tracking of observed animals or groups of animals such that repeat sound exposures may be attributed to individuals (to the extent possible).

Monitoring would be conducted 30 minutes before, during, and 30 minutes after pile driving/removal activities. In addition, observers shall record all incidents of marine

mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving/removal activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

A minimum of three PSOs would be on duty during all in-water pile driving activities. One observer will be stationed on the existing dock or similar location to monitor the Level A harassment zones, and two other observers will be stationed throughout the Level B harassment zones where best line of sight views would provide most complete coverage of the zone. PSOs would monitor for marine mammals entering the harassment zones; the position(s) may vary based on construction activity and location of piles or equipment.

PSOs would scan the waters using binoculars and would use a handheld range-finder device to verify the distance to each sighting from the project site. All PSOs would be trained in marine mammal identification and behaviors and are required to have no other project-related tasks while conducting monitoring. In addition, monitoring would be conducted by qualified observers, who would be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator via a radio. AGP would adhere to the following observer qualifications:

> (i) PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods.
>
> (ii) At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
>
> (iii) Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

(iv) Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.

(v) PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.

Additional standard observer qualifications include:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

Reporting

A draft marine mammal monitoring report would be submitted to NMFS within 90 days after the completion of pile driving and removal activities. It would include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring.

- Construction activities occurring during each daily observation period, including the number and type of piles driven or removed and by what method (*i.e.*, impact driving) and the total equipment duration for cutting for each pile or total number of strikes for each pile (impact driving).
- PSO locations during marine mammal monitoring.
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance.
- Upon observation of a marine mammal, the following information: Name of PSO who sighted the animal(s) and PSO location and activity at 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 bearing of each marine mammal observed relative to the pile being driven for each sighting (if pile driving was occurring at time of sighting); Estimated number of animals (min/max/best estimate); Estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*); Animal's closest point of approach and estimated time spent within the harassment zone; and 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.

- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.

If no comments are received from NMFS within 30 days, the draft final report would constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

Reporting Injured or Dead Marine Mammals

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA (if issued), such as an injury, serious injury or mortality, AGP would immediately cease the specified activities and report the incident to the Office of Protected Resources, NMFS, and the West Coast Region regional stranding coordinator. The report would include the following information:

- Description of the incident;
- Environmental conditions (*e.g.*, Beaufort sea state, visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with AGP to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. AGP would not be able to resume their activities until notified by NMFS.

In the event that the AGP discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition as described in the

next paragraph), AGP would immediately report the incident to the Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov*), NMFS and to the West Coast Region regional stranding coordinator as soon as feasible. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with AGP to determine whether modifications in the activities are appropriate.

Negligible Impact Analysis and Determination

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

To avoid repetition, the majority of our analysis applies to all the species listed in table 18, given that many of the anticipated effects of this project on different marine mammal stocks are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

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

Take by Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No serious injury or mortality is anticipated or proposed for authorization given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. Take by Level A harassment is only anticipated for harbor porpoise and harbor seal. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see **Proposed Mitigation** section).

Based on reports in the literature as well as monitoring from other similar activities, behavioral disturbance (*i.e.*, Level B harassment) would likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff, 2006; HDR, Inc., 2012; Lerma, 2014). Most likely for pile driving, individuals would simply move away

from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted in Washington, which have taken place with no observed severe responses of any individuals or known long-term adverse consequences. Level B harassment would be reduced to the level of least practicable adverse impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring. While vibratory driving associated with the proposed project may produce sound at distances of many kilometers from the project site, thus overlapping with some likely less-disturbed habitat, the project site itself is located in a busy harbor and the majority of sound fields produced by the specified activities are close to the harbor. Animals disturbed by project sound would be expected to avoid the area and use nearby higher-quality habitats.

In addition to the expected effects resulting from authorized Level B harassment, we anticipate that harbor porpoises and harbor seals may sustain some limited Level A harassment in the form of auditory injury. However, animals in these locations that experience PTS would likely only receive slight PTS, *i.e.* minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by pile driving, *i.e.* the low-frequency region below 2 kHz, not severe hearing impairment or impairment in the regions of greatest hearing sensitivity. If hearing impairment occurs, it is most likely that the affected animal would lose a few decibels in its hearing sensitivity, which in most cases is not likely to meaningfully affect its ability to forage and communicate with conspecifics. As described above, we expect that marine mammals would be likely to move away from a sound source that represents an aversive

stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat. The project activities would not modify existing marine mammal habitat for a significant amount of time. The activities may cause some fish or invertebrates 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, the relatively small area of the habitat that may be affected, and the availability of nearby habitat of similar or higher value, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences. While there are haulouts for pinnipeds in the area, these locations are some distance from the actual project site. According to WDFW's atlas of seal and sea lion haulout sites (Jeffries *et al.,* 2000), all haulouts in Grays Harbor are associated with tidal flats and at high tide it is assumed that these animals are foraging elsewhere in the estuary. The nearest documented harbor seal haulout site to the Project site is a low-tide haulout located 6 miles to the west of the project site. The nearest documented California sea lion haulout sites to the Project site are at the Westport Docks, approximately 13 miles west of the Project site near the entrance to Grays Harbor (Jeffries *et al.,* 2015), and another haulout observed in 1997 referred to as the mid-harbor flats located approximately 5.65 miles west of the Project site (WDFW, 2022). The nearest documented Steller sea lion haulout sites to the Project site are at Split Rock, 35 miles north of the entrance to Grays Harbor, and at the mouth of the Columbia River, 46 miles south of the entrance to Grays Harbor (Jeffries *et al.*, 2000). A few Steller sea lions may haul out on buoys near the Westport marina, located 13 miles west of the Project site, or at Westport docks, similar to California sea lions. While repeated exposures of individuals to this pile driving activity could cause limited Level A harassment in harbor

seals and Level B harassment in seals and sea lions, they are unlikely to considerably disrupt foraging behavior or result in significant decrease in fitness, reproduction, or survival for the affected individuals.

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

- No serious injury or mortality is anticipated or authorized;
- Any Level A harassment exposures (*i.e.*, to harbor porpoise and harbor seals, only) are anticipated to result in slight PTS (*i.e*., of a few decibels), within the lower frequencies associated with pile driving;
- The anticipated incidents of Level B harassment would consist of, at worst, temporary modifications in behavior that would not result in fitness impacts to individuals;
- The ensonifed areas from the project is very small relative to the overall habitat ranges of all species and stocks;
- Repeated exposures of pinnipeds to this pile driving activity could cause slight Level A harassment in seals and Level B harassment in seals and sea lion species, but are unlikely to considerably disrupt foraging behavior or result in significant decrease in fitness, reproduction, or survival for the affected individuals. In all, there would be no adverse impacts to the stocks as a whole; and
- The proposed mitigation measures are expected to reduce the effects of the specified activity to the level of least practicable adverse impact.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the

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

Table 18 demonstrates the number of instances in which individuals of a given species could be exposed to received noise levels that could cause take of marine mammals. Our analysis shows that less than 2 percent of all but one stock could be taken by harassment. While the percentage of stock taken from the Oregon/Washington coastal stock of harbor seal appears to be high (74.5 percent), in reality the number of individuals taken by harassment would be far less. Instead, it is more likely that there will be multiple takes of a smaller number of individuals over multiple days, lowering the number of individuals taken. The range of the Oregon/Washington coastal stock includes harbor seals from the California/Oregon border to Cape Flattery on the Olympic Peninsula of Washington, which is a distance of approximately 150 miles (240 km) (Carretta *et al.*, 2002). Additionally, there are over 150 Oregon/Washington coastal harbor seal stock haulouts along the outer Washington coast spanning from the Columbia River north to

Tatoosh Island on the northwestern tip of the Olympic Peninsula (Scordino, 2010). This figure does not include many additional haulout sites found along the Oregon coast. Given the expansive range of the Oregon/Washington coastal stock along with the numerous haulouts that have been documented on the Washington coast, it is unlikely that the number of individuals taken, limited largely to the pool of seals present in Grays Harbor, would exceed 1/3 of the stock. In consideration of various factors described above, we have preliminarily determined that numbers of individuals taken would comprise less than one-third of the best available population abundance estimate of the Oregon/Washington coastal stock of harbor seal.

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 ESA of 1973 (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 AGP for conducting pile driving activities at the Port from July 16, 2024 through July 15, 2025, 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 pile driving by AGP. 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 Activity** section of this notice is planned; or (2) the activities as described in the **Description of Proposed Activity** 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: April 1, 2024.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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