



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE097

**Taking of Marine Mammals Incidental to Specified Activities; Front Street
Transload Facility Construction**

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

ACTION: Notice; proposed incidental harassment authorization; request for comments and information.

SUMMARY: NMFS has received a request from the Bergerson Construction, Inc. (Bergerson) for an authorization to take small numbers of two species of marine mammals, by Level B harassment, incidental to proposed construction activities for Front Street Transload Facility construction project in Newport, Oregon. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an authorization to Bergerson to incidentally take, by harassment, small numbers of marine mammals for a period of 1 year.

DATES: Comments and information must be received no later than *[insert date 30 days after date of publication in the FEDERAL REGISTER]*.

ADDRESSES: Comments on the application should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National

Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing email comments is *itp.guan@noaa.gov*. NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 25-megabyte file size.

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

A copy of the application may be obtained by writing to the address specified above or visiting the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm*. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings

are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for a one-year authorization to incidentally take small numbers of marine mammals by harassment, provided that there is no potential for serious injury or mortality to result from the activity. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Summary of Request

On April 22, 2015, Bergerson submitted a request to NMFS requesting an IHA for the possible harassment of small numbers of Pacific harbor seal (*Phoca vitulina richardii*) and California sea lion (*Zalophus californianus*) incidental to construction

associated with the Front Street Marine Transload Facility in the city of Newport, Oregon, for a period of one year starting November 2015. NMFS determined the IHA application was complete on July 29, 2015, and proposes to issue an IHA that would be valid between November 1, 2015, and October 31, 2016. NMFS is proposing to authorize the Level B harassment of Pacific harbor seal and California sea lion.

Description of the Specified Activity

Overview

The purpose of the proposed Front Street Marine Transload Facility construction is to construct a new transload and fish buying facility at the current location of the Undersea Gardens. The new transload facility would provide local fisherman with an alternative location for selling their fish and shellfish in Newport, Oregon (see Figure 1 of Bergerson's IHA application).

The current Undersea Gardens and all associated structures would be removed prior to construction of the new facility. The new transload facility would consist of a 132-foot wide by 141-foot deep wharf comprised of precast concrete panels supported on steel piles. Up to 112 24-inch diameter steel support piles and 14 18-inch diameter steel fender piles would be installed. The new wharf would sit level with Bay Boulevard, approximately 10 feet above mean sea level (msl), and would support a 4,000 square foot cold storage building and 500 square foot ice machine. Approximately 15,860 square feet of the new wharf would be suspended over water, resulting in approximately 9,160 square feet of net new overwater structure following removal of the existing Undersea Gardens and its associated structures (approximately 6,700 square feet).

The proposed project would result in a net removal of approximately 2,000 cubic yards of existing structural components from below the highest measured tide (HMT) of Yaquina Bay. Construction is scheduled to begin in November 2015, with completion of the wharf expected by September 2016. The associated cold storage building would be constructed after completion of the wharf. The proposed project would require approximately 12 weeks of in-water work. Construction crews and equipment would access the project site via existing roadways and two floating barges, including a crane barge (measuring 60 by 100 feet) secured with two spud piles, and a material barge (measuring 40 by 100 feet) moored to the crane barge. Piles would be installed using a vibratory hammer with some use of an impact hammer to seat the piles to their desired depth.

Dates and Duration

In-water construction is planned to take place between November 2015 and October 2016, with in-water pile removal and pile driving activities limited between November 1, 2015, and February 15, 2016.

Specified Geographic Region

The proposed activities will occur at the current Undersea Garden located in Yaquina Bay along Bay Boulevard in Newport, Oregon (see Figure 1 of Bergerson's IHA application).

Detailed Description of Front Street Transload Facility Construction

Details of each activity for the Front Street Transload Facility construction project are provided below.

- (1) Removal of the Existing Undersea Gardens

The existing Undersea Gardens and all associated structures (including a wooden breakwater, small storage dock, access ramp, small section of pier, and approximately 25 pilings) would be removed prior to construction of the new transload facility. The Undersea Gardens is a floating structure that houses an underwater aquarium and gift shop. The structure itself would be towed from its current location (via tugboat) approximately 10 miles upstream to Yaquina Boatyard, where it would then be dismantled. In order to access the Undersea Gardens with a tugboat, the existing wooden breakwater that protects the structure would have to be removed. The breakwater is comprised of vertical wooden boards assembled in a line and supported by steel and wood piles. The boards would be removed by hand and the remaining support piles (including approximately five H-piles, five 12-inch diameter steel piles, and five 12-inch diameter wooden piles) would be removed with a vibratory hammer.

Following removal of the breakwater, approximately eight 12-inch diameter wooden support piles and a small section of pier, and two 12-inch diameter spud piles that anchor the storage dock would also be removed.

It is anticipated that piling removal would require approximately 15 minutes of vibratory hammer use per pile. All items removed would be placed in a contained area on a service barge and hauled to an upland location for recycling or disposal. Removal of the existing piles would require approximately 6 hours of total vibratory hammer use over a period of two to four in-water work days. Removal of the existing Undersea Gardens and associated structures would result in the removal of approximately 2,500 cubic yards of existing in-water structures from below the HMT of Yaquina Bay, and

6,700 square feet of existing overwater structures. No dredging or in-water excavation would be required.

(2) Construction of the New Transload Facility

Wharf

The new transload facility would consist of a 132-foot wide by 141-foot deep wharf comprised of precast concrete panels supported on up to 112 24-inch diameter steel support piles, and 14 18-inch diameter steel fender piles. The precast panels would be approximately 4 feet wide by 20 feet long, requiring seven panels supported on eight rows of piles spaced 10-foot on center across each row. The bottom of each panel would be painted with white, light reflecting paint to increase natural lighting under the new wharf. The new wharf would sit level with Bay Boulevard, approximately 10 feet above msl, and would result in approximately 9,360 square feet of net new overwater structure.

Piling Installation

The steel support piles and fender piles would be installed using a vibratory hammer and an impact hammer (operating from a barge-mounted crane) to a depth of approximately 30 feet within the substrate. All new piles would also be treated with a white, light reflective coating. Each new pile would require approximately 15 to 30 minutes of vibratory hammer use for installation. It is likely that the vibratory hammer would not fully embed the piles to the required depth given the presence of siltstone below the sediment. As such, an impact hammer would be used to seat the piles to the required depth. It is anticipated that use of an impact hammer would be needed for up to 10 feet of siltstone penetration. Up to 102 piles would be located below the HMT, resulting in approximately 300 square feet (555 cubic yards) of fill.

Based on a review of pile driving logs from previous piling installation projects, Bergerson anticipates that any piles that cannot be fully embedded with use of a vibratory hammer, may require an average of 10 minutes of impact hammer use, at an average rate of 40 strikes per minute. Given the amount of time it takes to set the crane barge, center each pile, and switch between the vibratory hammer and impact hammer, it is estimated that the average installation rate would be four piles per day. This equates to potentially 40 minutes of impact hammer use (1,600 pile strikes) per day. Pile driving would occur intermittently over the course of approximately 12 weeks. The contractor would be required to implement appropriate sound attenuation methods (*e.g.*, a confined or unconfined bubble curtain) as detailed in the Mitigation Measures below. It is expected that proper use of the bubble curtain would result in 10 decibel (dB) attenuation (NMFS 2011, ICF Jones & Stokes and Illingworth & Rodkin 2009). It is possible that proper use of a bubble curtain can result in up to 20 dB attenuation depending on site specific conditions (ICF Jones & Stokes and Illingworth & Rodkin 2009).

Cold Storage Building

The new wharf would sit level with Bay Boulevard (approximately 10 feet above msl) and would support a 4,000 square foot cold storage building and 500 square foot ice machine. The proposed building would be used to cold pack local fish and shellfish for distribution. There may be some limited fish fillet processing for local distribution only. Small forklifts would be used on the wharf for unloading and loading of boats and truck trailers. Operation of the new transload facility would not require pumping of water from Yaquina Bay. All water would be provided by local utilities. In addition, no excavation or maintenance dredging would be required to construct or operate the new facility.

Furthermore, operation of the new transload facility would not increase local boat traffic within the vicinity of the action area. The new facility would service local fisherman already operating within Yaquina Bay and local Newport marinas. The operation of the new transload facility is not expected to impact on marine mammals in the project vicinity.

A summary of piles to be removed and installed is provided in Table 1.

Table 1. Project piles to be removed and installed

	Location	Pile type	Pile size (inch)	Hammer used	# piles
Pile removal	Breakwater at Undersea Garden	H pile	-	Vibratory	5
		Steel pile	12	Vibratory	5
		Wooden pile	12	Vibratory	5
	Storage dock at Undersea Garden	Wooden pile	12	Vibratory	8
		Spud pile	12	Vibratory	2
<i>Total</i>					25
Pile driving	Wharf for the new transload facility	Steel pile	24	Vibratory / impact	112
		Steer fender pile	18	Vibratory / impact	14
	<i>Total</i>				

Description of Marine Mammals in the Area of the Specified Activity

The marine mammal species under NMFS jurisdiction most likely to occur in the proposed construction area include Pacific harbor seal (*Phoca vitulina richardsi*) and California sea lion (*Zalophus californianus*).

Table 2. Marine Mammal Species Potentially Present in Region of Activity

Species	ESA Status	MMPA Status	Occurrence
Harbor Seal	Not listed	Non-depleted	Frequent
California Sea Lion	Not listed	Non-depleted	Frequent

General information on the marine mammal species found in Oregon coastal waters can be found in Caretta *et al.* (2014), which is available at the following URL:

<http://www.nmfs.noaa.gov/pr/sars/pdf/po2013.pdf>. Refer to that document for information on these species. A list of marine mammals in the vicinity of the action and their status are provided in Table 2. Specific information concerning these species in the vicinity of the proposed action area is provided in detail in the Bergerson's IHA application (Turner and Campbell, 2015).

Potential Effects of the Specified Activity on Marine Mammals

This section includes a summary and discussion of the ways that the types of stressors associated with the specified activity (e.g., pile removal and pile driving) have been observed to impact marine mammals. This discussion may also include reactions that we consider to rise to the level of a take and those that we do not consider to rise to the level of a take (for example, with acoustics, we may include a discussion of studies that showed animals not reacting at all to sound or exhibiting barely measurable avoidance). This section is intended as a background of potential effects and does not consider either the specific manner in which this activity will be carried out or the mitigation that will be implemented, and how either of those will shape the anticipated impacts from this specific activity. The “**Estimated Take by Incidental Harassment**” section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The “**Negligible Impact Analysis**” section will include the analysis of how this specific activity will impact marine mammals and will consider the content of this section, the “**Estimated Take by Incidental Harassment**” section, the “**Proposed Mitigation**” section, and the “**Anticipated Effects on Marine Mammal Habitat**” section to draw conclusions

regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms have been derived using auditory evoked potentials, anatomical modeling, and other data, Southall *et al.* (2007) designate “functional hearing groups” for marine mammals and estimate the lower and upper frequencies of functional hearing of the groups. The functional groups and the associated frequencies are indicated below (though animals are less sensitive to sounds at the outer edge of their functional range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their functional hearing range):

- Low frequency cetaceans (13 species of mysticetes): functional hearing is estimated to occur between approximately 7 Hz and 25 kHz (however, a study by Au *et al.*, (2006) of humpback whale songs indicate that the range may extend to at least 24 kHz);
- Mid-frequency cetaceans (32 species of dolphins, six species of larger toothed whales, and 19 species of beaked and bottlenose whales): functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High frequency cetaceans (eight species of true porpoises, six species of river dolphins, *Kogia*, the franciscana, and four species of cephalorhynchids): functional hearing is estimated to occur between approximately 200 Hz and 180 kHz; and

- Pinnipeds in Water: functional hearing is estimated to occur between approximately 75 Hz and 75 kHz, with the greatest sensitivity between approximately 700 Hz and 20 kHz.

As mentioned previously in this document, two marine mammal species (both are pinniped species) are likely to occur in the proposed seismic survey area.

Marine mammals exposed to high-intensity sound repeatedly or for prolonged periods can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Kastak *et al.* 1999; Schlundt *et al.* 2000; Finneran *et al.* 2002; 2005). TS can be permanent (PTS), in which case the loss of hearing sensitivity is unrecoverable, or temporary (TTS), in which case the animal's hearing threshold will recover over time (Southall *et al.* 2007). Since marine mammals depend on acoustic cues for vital biological functions, such as orientation, communication, finding prey, and avoiding predators, hearing impairment could result in the reduced ability of marine mammals to detect or interpret important sounds. Repeated noise exposure that causes TTS could lead to PTS.

Experiments on a bottlenose dolphin (*Tursiops truncatus*) and beluga whale (*Delphinapterus leucas*) showed that exposure to a single watergun impulse at a received level of 207 kPa (or 30 psi) peak-to-peak (p-p), which is equivalent to 228 dB (p-p) re 1 μ Pa, resulted in a 7 and 6 dB TTS in the beluga whale at 0.4 and 30 kHz, respectively. Thresholds returned to within 2 dB of the pre-exposure level within 4 minutes of the exposure (Finneran *et al.* 2002). No TTS was observed in the bottlenose dolphin.

Although the source level of one hammer strike for pile driving is expected to be much lower than the single watergun impulse cited here, animals being exposed for a prolonged

period to repeated hammer strikes could receive more noise exposure in terms of sound exposure level (SEL) than from the single watergun impulse (estimated at 188 dB re 1 $\mu\text{Pa}^2\text{-s}$) in the aforementioned experiment (Finneran *et al.* 2002).

Chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark *et al.* 2009). Masking is the obscuring of sounds of interest by other sounds, often at similar frequencies. Masking generally occurs when sounds in the environment are louder than, and of a similar frequency as, auditory signals an animal is trying to receive. Masking can interfere with detection of acoustic signals, such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired.

Masking occurs at the frequency band which the animals utilize. Since noise generated from in-water vibratory pile removal and driving is mostly concentrated at low frequency ranges, it may have little effect on high-frequency echolocation sounds by odontocetes (toothed whales), which may hunt California sea lion and harbor seal. However, the lower frequency man-made noises are more likely to affect the detection of communication calls and other potentially important natural sounds, such as surf and prey noise. The noises may also affect communication signals when those signals occur near the noise band, and thus reduce the communication space of animals (e.g., Clark *et al.* 2009) and cause increased stress levels (e.g., Foote *et al.* 2004; Holt *et al.* 2009).

Unlike TS, masking can potentially impact the species at community, population, or even ecosystem levels, as well as individual levels. Masking affects both senders and

receivers of the signals and could have long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels in the world's oceans have increased by as much as 20 dB (more than 3 times, in terms of SPL) from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). All anthropogenic noise sources, such as those from vessel traffic and pile removal and driving, contribute to the elevated ambient noise levels, thus intensifying masking.

Finally, in addition to TS and masking, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson *et al.* 1995), such as: changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities, such as socializing or feeding; visible startle response or aggressive behavior, such as tail/fluke slapping or jaw clapping; avoidance of areas where noise sources are located; and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries). The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography), and is therefore difficult to predict (Southall *et al.* 2007). The activities of workers in the project area may also cause behavioral reactions by marine mammals, such as pinnipeds flushing from the jetty or pier or moving farther from the disturbance to forage. However, observations of the area show that it is unlikely that more than 10 to 20 individuals of pinnipeds would be present in the project vicinity at any one time. Therefore, even if pinnipeds were flushed from the haul-out, a stampede is very unlikely, due to the relatively low number of animals

onsite. In addition, proposed mitigation and monitoring measures would minimize the startle behavior of pinnipeds and prevent the animals from flushing into the water.

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification could be expected to be biologically significant if the change affects growth, survival, or reproduction. Some of these types of significant behavioral modifications include: Drastic change in diving/surfacing patterns (such as those thought to be causing beaked whale strandings due to exposure to military mid-frequency tactical sonar); habitat abandonment due to loss of desirable acoustic environment; and cessation of feeding or social interaction.

Potential Effects on Marine Mammal Habitat

The primary potential impacts to marine mammal habitat are associated with elevated sound levels produced by vibratory pile removal and pile driving in the area. However, other potential impacts to the surrounding habitat from physical disturbance are also possible.

Potential Impacts on Prey Species

With regard to fish as a prey source for cetaceans and pinnipeds, fish are known to hear and react to sounds and to use sound to communicate (Tavolga *et al.* 1981) and possibly avoid predators (Wilson and Dill 2002). Experiments have shown that fish can sense both the strength and direction of sound (Hawkins 1981). Primary factors determining whether a fish can sense a sound signal, and potentially react to it, are the frequency of the signal and the strength of the signal in relation to the natural background noise level.

The level of sound at which a fish will react or alter its behavior is usually well above the detection level. Fish have been found to react to sounds when the sound level increased to about 20 dB above the detection level of 120 dB (Ona 1988); however, the response threshold can depend on the time of year and the fish's physiological condition (Engas *et al.* 1993). In general, fish react more strongly to pulses of sound rather than non-pulse signals (such as noise from pile driving) (Blaxter *et al.* 1981), and a quicker alarm response is elicited when the sound signal intensity rises rapidly compared to sound rising more slowly to the same level.

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

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

Passage Obstructions

Pile removal and driving operations at the Front Street Transload Facility will not obstruct movements of marine mammals. The operations at the construction will occur next to the shoreline, leaving the majority of the Yaquina Bay for marine mammals to pass.

Proposed Mitigation Measures

In order to issue an incidental take authorization under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity,

and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

For Bergerson's proposed Front Street Transload Facility construction project, Bergerson worked with NMFS and proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity. The primary purposes of these mitigation measures are to minimize sound levels from the activities, to monitor marine mammals within designated zones of influence (ZOI) corresponding to NMFS' current Level B harassment thresholds and, if marine mammals are detected within or approaching the exclusion zone, to initiate immediate shutdown or power down of the impact piling hammer, making it very unlikely potential injury or TTS to marine mammals would occur and ensuring that Level B behavioral harassment of marine mammals would be reduced to the lowest level practicable.

Time Restriction

Work would occur only during daylight hours, when visual monitoring of marine mammals can be conducted. In addition, all in-water construction will be limited to the period between November 1, 2015, and February 15, 2016.

Air Bubble Curtain

Bergerson would be required to install an air bubble curtain system around the pile during pile installation using an impact hammer.

Establishment of Exclusion Zone and Level B Harassment Zones of Influence

Before the commencement of in-water pile driving activities, Bergerson shall establish Level A exclusion zones and Level B zones of influence (ZOIs). The received underwater sound pressure levels (SPLs) within the exclusion zone would be 190 dB (rms) re 1 μ Pa and above. The Level B ZOIs would encompass areas where received underwater SPLs are higher than 160 dB (rms) and 120 dB (rms) re 1 μ Pa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively.

Based on measurements conducted in nearby in similar water depth and sediment type in the Yaquina Bay for the NOAA Marine Operation Center P Test Pile Program (Miner, 2010), average vibratory hammer sound pressure level for 24-inch steel pile at 10 meters from the pile is 157 dB re 1 μ Pa (Minor 2010; ICF Jones & Stokes and Illingworth & Rodkin 2009). Based on practical spreading model with a transmission loss constant of 15, the distance at which the sound pressure levels fall below the 120 dB (rms) re 1 μ Pa is approximately 1.8 miles from the pile (Miner, 2010).

Modeling of exclusion zone and ZOIs for impact pile driving source level are based on measurements conducted at the nearby Tongue Point Facility in Astoria, Oregon, for installation of 24-in steel pile with an impact hammer (Illingworth and Rodkin, 2009). The result shows that the SPL at 10 m from the pile is 182 dB (rms) re 1 μ Pa. Nevertheless, a conservative 190 dB (rms) re 1 μ Pa value at 10 m and a practical spreading with a transmission loss constant of 15 are used to establish the exclusion zone and ZOI. The result shows that the distance at which the SPLs fall below the 160 dB (rms) re 1 μ Pa behavioral threshold for impact hammering is approximately 0.62 miles. With a bubble curtain and an estimated 10 dB reduction in sound levels, the distance at

which the sound pressure levels fall below the 160 dB RMS behavioral threshold for impact hammering is approximately 707 feet. The exclusion zone with the air bubble curtain system would be 7 feet from the pile.

The exclusion zone for Level A harassment and ZOIs for Level B harassment are presented in Table 3 below.

Table 3. Modeled Level A and Level B harassment zones for vibratory and impact pile driving activities

Pile Driving Methods	Distance to 190 dB (m)	Distance to 160 dB (m)	Distance to 120 dB (m)
Vibratory pile driving / removal	NA	NA	2,900
Impact pile driving	10 / 2.1 (with air bubble system)	1,000 / 215 (with air bubble system)	NA

Soft Start

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

For impact pile driving, the contractor would provide an initial set of strikes from the impact hammer at reduced energy, followed by a 30-second waiting period, then two subsequent sets. (The reduced energy of an individual hammer cannot be quantified because of variations between individual drivers. Also, the number of strikes will vary at reduced energy because raising the hammer at less than full power and then releasing it results in the hammer “bouncing” as it strikes the pile resulting in multiple “strikes”).

For vibratory pile driving, the contractor will initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a 30-second waiting period. The procedure shall be repeated two additional times.

Shutdown Measures

Bergerson shall implement shutdown measures if a marine mammal is sighted approaching the Level A exclusion zone. In-water construction activities shall be suspended until the marine mammal is sighted moving away from the exclusion zone, or if the animal is not sighted for 30 minutes after the shutdown.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(1) Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

(2) A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of pile driving and

pile removal or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

(3) A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of pile driving and pile removal, or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

(4) A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of pile driving, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).

(5) Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

(6) For monitoring directly related to mitigation – an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammals 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 incidental take authorization (ITA) 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 ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Bergerson submitted a marine mammal monitoring plan as part of the IHA application. It can be found at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>. The plan may be modified or supplemented based on comments or new information received from the public during the public comment period.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

(1) An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;

(2) An increase in our understanding of how many marine mammals are likely to be exposed to levels of pile driving that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS;

(3) An increase in our understanding of how marine mammals respond to stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically

through effects on annual rates of recruitment or survival) through any of the following methods:

- Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

(4) An increased knowledge of the affected species; and

(5) An increase in our understanding of the effectiveness of certain mitigation

and monitoring measures.

Proposed Monitoring Measures

During pile removal and installation, two land-based protected species observers (PSOs) would monitor the area from the best observation points available. If weather conditions prevent adequate land-based observations of the entire ensonified zones, boat-based monitoring would be implemented.

The PSOs would observe and collect data on marine mammals in and around the project area for 30 minutes before, during, and for 30 minutes after all pile removal and pile installation work. If a PSO observes a marine mammal within or approaching the exclusion zone, the PSO would notify the work crew to initiate shutdown measures.

Monitoring of marine mammals around the construction site shall be conducted using high-quality binoculars (e.g., Zeiss, 10 x 42 power).

Data collection during marine mammal monitoring would consist of a count of all marine mammals by species, a description of behavior (if possible), location, direction of movement, type of construction that is occurring, time that pile replacement work begins and ends, any acoustic or visual disturbance, and time of the observation. Environmental conditions such as weather, visibility, temperature, tide level, current, and sea state would also be recorded.

Proposed Reporting Measures

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

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

In the event that Bergerson finds an injured or dead marine mammal that is not in the vicinity of the construction area, Bergerson would report the same information as listed above to NMFS as soon as operationally feasible.

Estimated Take by Incidental Harassment

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

As discussed above, in-water pile removal and pile driving (vibratory and impact) generate loud noises that could potentially harass marine mammals in the vicinity of Bergerson's proposed Front Street Transload Facility construction project.

As mentioned earlier in this document, currently NMFS uses 120 dB re 1 μ Pa and 160 dB re 1 μ Pa at the received levels for the onset of Level B harassment from non-impulse (vibratory pile driving and removal) and impulse sources (impact pile driving) underwater, respectively. Table 4 summarizes the current NMFS marine mammal take criteria.

Table 4. Current Acoustic Exposure Criteria for Non-explosive Sound Underwater

Criterion	Criterion Definition	Threshold
Level A Harassment (Injury)	Permanent Threshold Shift (PTS) (Any level above that which is known to cause TTS)	180 dB re 1 μ Pa (cetaceans) 190 dB re 1 μ Pa (pinnipeds) root mean square (rms)
Level B Harassment	Behavioral Disruption (for impulse noises)	160 dB re 1 μ Pa (rms)
Level B Harassment	Behavioral Disruption (for non-impulse noise)	120 dB re 1 μ Pa (rms)

As explained above, exclusion and ZOIs will be established that encompass the areas where received underwater sound pressure levels (SPLs) exceed the applicable thresholds for Level A and Level B harassments. In the case of Bergerson's proposed Front Street Transload Facility construction project, the Level B harassment ZOIs for impact and vibratory pile driving are at 215 m and 2,900 m from the source, respectively. The Level A harassment exclusion from impact pile driving is 2.1 m from the source.

Incidental take is calculated for each species by estimating the likelihood of a marine mammal being present within a ZOI during active pile removal/driving. Expected marine mammal presence is determined by past observations and general abundance near the Front Street Transload Facility during the construction window. Ideally, potential take is estimated by multiplying the area of the ZOI by the local animal density. This provides an estimate of the number of animals that might occupy the ZOI at any given moment. However, there are no density estimates for any Puget Sound population of marine mammal. As a result, the take requests were estimated using local marine mammal data sets, and information from state and federal agencies.

The calculation for marine mammal exposures is estimated by:

Exposure estimate = N (number of animals in the area) * 30 days of pile removal/driving activity

Estimates include Level B acoustical harassment during pile removal and driving. All estimates are conservative, as pile removal/driving would not be continuous during the work day. Using this approach, a summary of estimated takes of marine mammals incidental to Bergerson's Front Street Transload Facility construction work are provided in Table 5.

Table 5. Estimated numbers of marine mammals that may be exposed by Level B harassment from pile and pile driving activities

Species	Estimated marine mammal takes	Abundance	Percentage
Pacific harbor seal	750	16,165	4.64%
California sea lion	1,100	296,750	3.71%

Analysis and Preliminary Determinations

Negligible Impact

Negligible impact is “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 Level B harassment 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 behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, and effects on habitat.

To avoid repetition, this introductory discussion of our analyses applies to all the species listed in Table 5, given that the anticipated effects of Bergerson’s Front Street Transload Facility construction on marine mammals are expected to be relatively similar in nature. There is no information about the nature or severity of the impacts, or the size, status, or structure of any species or stock that would lead to a different analysis for this activity, else species-specific factors would be identified and analyzed.

Bergerson's proposed Front Street Transload Facility construction project would involve vibratory pile removal and vibratory and impact pile driving activities. Elevated underwater noises are expected to be generated as a result of these activities. The exclusion zone for Level A harassment is extremely small (2.1 m from the source) with the use of air bubble curtain system, and with the implementation of the proposed monitoring and mitigation measures described above, there would be no Level A take of marine mammals. For vibratory pile removal and pile driving, noise levels are not expected to reach the level that may cause TTS, injury (including PTS), or mortality to marine mammals.

Additionally, the sum of noise from Bergerson's proposed Front Street Transload Facility construction activities is confined to a limited area by surrounding landmasses; therefore, the noise generated is not expected to contribute to increased ocean ambient noise. In addition, due to shallow water depths in the project area, underwater sound propagation of low-frequency sound (which is the major noise source from pile driving) is expected to be poor.

In addition, Bergerson's proposed activities are localized and of short duration. The entire project area is limited to Bergerson's Front Street Transload Facility construction work. The entire project would involve the removal of 25 existing piles and installation of 126 piles. The duration for pile removal and pile driving would be 30 days. These low-intensity, localized, and short-term noise exposures may cause brief startle reactions or short-term behavioral modification by the animals. These reactions and behavioral changes are expected to subside quickly when the exposures cease. Moreover, the proposed mitigation and monitoring measures are expected to reduce potential

exposures and behavioral modifications even further. Additionally, no important feeding and/or reproductive areas for marine mammals are known to be near the proposed action area. Therefore, the take resulting from the proposed Front Street Transload Facility construction work is not reasonably expected to, and is not reasonably likely to, adversely affect the marine mammal species or stocks through effects on annual rates of recruitment or survival.

The proposed project area is not a prime habitat for marine mammals, nor is it considered an area frequented by marine mammals. Therefore, behavioral disturbances that could result from anthropogenic noise associated with Bergerson's construction activities are expected to affect only a small number of marine mammals on an infrequent and limited basis.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat, as analyzed in detail in the "**Anticipated Effects on Marine Mammal Habitat**" section. The project activities would not modify existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

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 Bergerson's Front Street

Transload Facility construction project will have a negligible impact on the affected marine mammal species or stocks.

Small Number

Based on analyses provided above, it is estimated that approximately 750 harbor seals and 1,100 California sea lions could be exposed to received noise levels that could cause Level B behavioral harassment from the proposed construction work at the Front Street Transload Facility in Newport, Oregon. These numbers represent approximately 4.6% and 3.7% of the populations of harbor seal and California sea lion, respectively, that could be affected by Level B behavioral harassment, respectively (see Table 5 above), which are small percentages relative to the total populations of the affected species or stocks.

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 mitigation and monitoring measures, which are expected to reduce the number of marine mammals potentially affected by the proposed action, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no subsistence uses of marine mammals in the proposed project area; and, thus, no subsistence uses impacted by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

NMFS has determined that issuance of the IHA will have no effect on listed marine mammals, as none are known to occur in the action area.

National Environmental Policy Act (NEPA)

NMFS prepared a draft Environmental Assessment (EA) for the proposed issuance of an IHA, pursuant to NEPA, to determine whether or not this proposed activity may have a significant effect on the human environment. This analysis will be completed prior to the issuance or denial of this proposed IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to Bergerson for conducting the Front Street Transload Facility construction project, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The proposed IHA language is provided next.

1. This Authorization is valid from November 1, 2015, through October 31, 2016.
2. This Authorization is valid only for activities associated in-water construction work at the Front Street Transload Facility construction project in Newport, Oregon.
3. (a) The species authorized for incidental harassment takings, Level B harassment only, are: Pacific harbor seal (*Phoca vitulina richardsi*) and California sea lion (*Zalophus californianus*).

(b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:

- Vibratory and impact pile driving;
- Vibratory pile removal; and
- Work associated with above piling activities.

(c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the West Coast Administrator (206-526-6150), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401, or her designee (301-427-8401).

4. The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of activities identified in 3(b) (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible).

5. Prohibitions

(a) The taking, by incidental harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed in Table 5. The taking by Level A harassment, injury or death of these species or the taking by harassment, injury or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

(b) The taking of any marine mammal is prohibited whenever the required protected species observers (PSOs), required by condition 7(a), are not present in conformance with condition 7(a) of this Authorization.

6. Mitigation

(a) Time Restriction

In-water construction work shall occur only during daylight hours, when visual monitoring of marine mammals can be conducted.

(b) Air Bubble Curtain

Bergerson shall install an air bubble curtain system around the pile during pile installation using an impact hammer.

(c) Establishment of Level A Exclusion Zone

Before the commencement of in-water impact pile driving activities, Bergerson shall establish Level A exclusion zone where received underwater sound pressure levels (SPLs) are higher than 190 dB (rms) re 1 μ Pa. The modeled isopleths for exclusion zone 2.1 m from the source.

(d) Establishment of Level B Harassment Zones of Influence

Before the commencement of in-water pile driving activities, Bergerson shall establish Level B behavioral harassment zones of influence (ZOIs) where received underwater sound pressure levels (SPLs) are higher than 120 dB (rms) re 1 μ Pa for vibratory pile driving and pile removal, and 160 dB (rms) re 1 μ Pa for impact pile driving. The modeled isopleths for vibratory pile driving and pile removal ZOI is 2,900 m from the source, and the modeled isopleths for impact pile driving ZOI is 215 m from the source.

(e) Monitoring of marine mammals shall take place starting 30 minutes before pile driving begins until 30 minutes after pile driving ends.

(f) Soft Start

(i) When there has been downtime of 30 minutes or more without pile driving, the contractor will initiate the driving with ramp-up procedures described below.

(ii) For impact pile driving, the contractor would provide an initial set of strikes from the impact hammer at reduced energy, followed by a 30-second waiting period, then two subsequent sets.

(iii) For vibratory pile driving, the contractor will initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a 30-second waiting period. The procedure shall be repeated two additional times.

(g) Shutdown Measures

(i) Bergerson shall implement shutdown measures if a marine mammal is sighted within or approaching the Level A exclusion zone. In-water construction activities shall be suspended until the marine mammal is sighted moving away from the exclusion zone, or if the animal is not sighted for 30 minutes after the shutdown.

(ii) Bergerson shall implement shutdown measures if the number of any allotted marine mammal takes reaches the limit under the IHA (if issued), if such marine mammals are sighted within the vicinity of the project area and are approaching the Level B ZOI during pile removal activities.

(iii) Bergerson shall implement shutdown measures if marine mammals within the ZOI appear disturbed by the work activity.

7. Monitoring:

(a) Protected Species Observers

Bergerson shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its construction project.

(i) During pile removal and installation, two land-based protected species observers (PSOs) shall monitor the area from the best observation points available.

(ii) If weather conditions prevent adequate land-based observations of the entire ensonified zones, boat-based monitoring shall be implemented.

(ii) Experience or training in the field identification of marine mammals (cetaceans and pinnipeds).

(iii) Monitoring of marine mammals around the construction site shall be conducted using high-quality binoculars (e.g., Zeiss, 10 x 42 power).

(iv) Data collection during marine mammal monitoring would consist of a count of all marine mammals by species, a description of behavior (if possible), location, direction of movement, type of construction that is occurring, time that pile replacement work begins and ends, any acoustic or visual disturbance, and time of the observation. Environmental conditions such as weather, visibility, temperature, tide level, current, and sea state would also be recorded.

8. Reporting:

(a) Bergerson shall provide NMFS with a draft monitoring report within 90 days of the conclusion of the construction work or within 90 days of the expiration of the IHA, whichever comes first. This report shall detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed.

(b) If comments are received from the NMFS West Coast Regional Administrator or NMFS Office of Protected Resources on the draft report, a final report shall be submitted to NMFS within 30 days thereafter. If no comments are received from NMFS, the draft report will be considered to be the final report.

(c) In the unanticipated event that the construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization (if issued), such as an injury, serious injury, or mortality, Bergerson shall immediately cease all operations

and immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the following information:

- (i) Time, date, and location (latitude/longitude) of the incident;
- (ii) Description of the incident;
- (iii) Status of all sound source use in the 24 hours preceding the incident;
- (iv) Environmental conditions (e.g., wind speed and direction, sea state, cloud cover, visibility, and water depth);
- (v) Description of marine mammal observations in the 24 hours preceding the incident;
- (vi) Species identification or description of the animal(s) involved;
- (vii) The fate of the animal(s); and
- (viii) Photographs or video footage of the animal (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with Bergerson to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance.

Bergerson may not resume their activities until notified by NMFS via letter, email, or telephone.

(E) In the event that Bergerson 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 (i.e., in less than a moderate state of decomposition as described in the next paragraph), Bergerson will immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast

Regional Stranding Coordinators. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Bergerson to determine whether modifications in the activities are appropriate.

(F) In the event that Bergerson discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Bergerson shall report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators, within 24 hours of the discovery.

Bergerson shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Bergerson can continue its operations under such a case.

9. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein or if the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.

10. A copy of this Authorization must be in the possession of each contractor who performs the construction work at the Front Street Transload Facility constructions.

Dated: August 10, 2015.

Donna S. Wieting,

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

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