



NOAA FISHERIES

PROPOSED ACTION: Issuance of an Incidental Harassment Authorization for Front Street Marine Transload Facility Construction in Newport, Oregon.

TYPE OF STATEMENT: Draft Environmental Assessment

LEAD AGENCY: U.S. Department of Commerce
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National Marine Fisheries Service

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ABSTRACT: This Environmental Assessment analyzes the environmental impacts of the National Marine Fisheries Service, Office of Protected Resources' proposal to issue an Incidental Harassment Authorization, pursuant to section 101(a)(5)(D) of the Marine Mammal Protection Act, to the Bergerson Construction, Inc. for the take of small numbers of marine mammals incidental to conducting the Front Street Transload Facility Construction in Newport, Oregon.

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Chapter 1 Introduction and Purpose and Need

1.1. Description of Proposed Action

The Marine Mammal Protection Act (MMPA) prohibits the incidental taking of marine mammals. The incidental take of a marine mammal falls under three categories: mortality, serious injury, or harassment, which includes injury and behavioral effects. The MMPA defines harassment as any act of pursuit, torment, or annoyance which: (1) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (2) 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). There are exceptions to the MMPA's prohibition on take, such as the authority at issue here for us to authorize the incidental taking of small numbers of marine mammals by harassment upon the request of a U.S. citizen provided we follow certain statutory and regulatory procedures and make determinations. This exception is discussed in more detail in Section 1.2.

We propose to issue an Incidental Harassment Authorization (IHA) to the Bergerson Construction Inc. (Bergerson) under the MMPA for the taking of small numbers of marine mammals, incidental to Bergerson's Front Street Marine Transload Facility construction in Newport, Oregon. We do not have the authority to permit, authorize, or prohibit Bergerson's construction activities.

Our proposed action is a direct outcome of Bergerson requesting an IHA under Section 101(a)(5)(D) of the MMPA to take marine mammals, by harassment, incidental to conducting the Front Street Marine Transload Facility construction. Impact and vibratory pile driving activities associated with that Project have the potential to take, by harassment, marine mammals. Bergerson therefore requires an IHA for incidental take.

Our issuance of an IHA to Bergerson is a major federal action under the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations in 40 CFR §§ 1500-1508, and NOAA Administrative Order (NAO) 216-6. Thus, we are required to analyze the effects of our proposed action.

This Draft Environmental Assessment (Draft EA), titled "*Issuance of an Incidental Harassment Authorization for Front Street Marine Transload Facility Constructio in Newport, Oregon,*" (hereinafter, Draft EA) addresses the potential environmental impacts of two alternatives, namely:

- Issue the Authorization to Bergerson under the MMPA for Level B harassment of marine mammals during Bergerson's Front Street Marine Transload Facility construction, taking into account the prescribed means of take, mitigation measures, and monitoring requirements required in the proposed Authorization; or

- Not issue an Authorization to Bergerson, in which case, for the purposes of NEPA analysis only, we assume that Bergerson would forego the proposed Front Street Marine Transload Facility construction.

1.1.1. Background on Bergerson’s MMPA Application

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.

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.

1.1.2. Marine Mammals in the Action Area

The proposed construction project could adversely affect the following marine mammal species under NMFS jurisdiction:

- Harbor seal (*Phoca vitulina richardii*), and
- California sea lion (*Zalophus californianus*).

1.2. Purpose and Need

The MMPA prohibits “takes” of marine mammals, with a number of specific exceptions. The applicable exception in this case is an authorization for incidental take of marine mammals in section 101(a)(5)(D) of the MMPA.

Section 101(a)(5)(D) of the MMPA directs the Secretary of Commerce (Secretary) to authorize, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, by United States citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if we make certain findings and provide a notice of a proposed authorization to the public for review. Entities seeking to obtain authorization for the incidental take of marine mammals under our jurisdiction must submit such a request (in the form of an application) to us.

We have issued regulations to implement the Incidental Take Authorization provisions of the MMPA (50 CFR Part 216) and have produced Office of Management and Budget (OMB)-approved application instructions (OMB Number 0648-0151) that prescribe the procedures necessary to apply for authorizations. All applicants must comply with the regulations at 50 CFR

§ 216.104 and submit applications requesting incidental take according to the provisions of the MMPA.

Purpose: The primary purpose of our proposed action—the issuance of an Authorization to Bergerson—is to authorize (pursuant to the MMPA) the take of marine mammals incidental to Bergerson’s proposed activities. The IHA, if issued, would exempt Bergerson from the take prohibitions contained in the MMPA.

To authorize the take of small numbers of marine mammals in accordance with Section 101(a)(5)(D) of the MMPA, we must evaluate the best available scientific information to determine whether the take would have a negligible impact on marine mammals or stocks and not have an unmitigable adverse impact on the availability of affected marine mammal species for certain subsistence uses. We cannot issue an IHA if it would result in more than a negligible impact on marine mammal species or stocks or if it would result in an unmitigable adverse impact on subsistence.

In addition, we must prescribe, where applicable, the permissible methods of taking and other means of effecting the least practicable impact on the species or stocks of marine mammals and their habitat (i.e., mitigation), paying particular attention to rookeries, mating grounds, and other areas of similar significance. If appropriate, we must prescribe means of effecting the least practicable impact on the availability of the species or stocks of marine mammals for subsistence uses. Authorizations must also include requirements or conditions pertaining to the monitoring and reporting of such taking, in large part to better understand the effects of such taking on the species. Also, we must publish a notice of a proposed Authorization in the *Federal Register* for public notice and comment.

The underlying purpose of this action is therefore to determine whether the take resulting from Bergerson’s Front Street Marine Transload Facility construction would have a negligible impact on affected marine mammal species or stocks and would not have an unmitigable adverse impact on the availability of marine mammals for taking for subsistence uses, and to develop mitigation and monitoring measures to reduce the potential impacts.

Need: On April 22, 2015, Bergerson submitted an application demonstrating both the need and potential eligibility for issuance of an IHA in connection with the activities described in section 1.1.1. We now have a corresponding duty to determine whether and how we can authorize take by Level B harassment incidental to the activities described in Bergerson’s application. Our responsibilities under section 101(a)(5)(D) of the MMPA and its implementing regulations establish and frame the need for this proposed action.

Any alternatives considered under NEPA must meet the agency’s statutory and regulatory requirements. Our described purpose and need guide us in developing reasonable alternatives for consideration, including alternative means of mitigating potential adverse effects. Thus, we are

developing and analyzing alternative means of developing and issuing an Authorization, which may require the applicant to include additional mitigation and monitoring measures in order for us to make our determinations under the MMPA.

1.3. The Environmental Review Process

NEPA compliance is necessary for all “major” federal actions with the potential to significantly affect the quality of the human environment. Major federal actions include activities fully or partially funded, regulated, conducted, authorized, or approved by a federal agency. Because our issuance of an Authorization would allow for the taking of marine mammals consistent with provisions under the MMPA and incidental to the applicant’s activities, we consider this as a major federal action subject to NEPA.

Under the requirements of NAO 216-6 section 6.03(f)(2)(b) for incidental harassment authorizations, we prepared this Draft EA to determine whether the direct, indirect and cumulative impacts related to the issuance of an IHA for incidental take of marine mammals during the conduct of Bergerson’s Front Street Marine Transload Facility construction in Newport, Oregon, could be significant. If we deem the potential impacts to be not significant, this analysis, in combination with other analyses incorporated by reference, may support the issuance of a Finding of No Significant Impact (FONSI) for the proposed Authorization.

1.3.1. Laws, Regulations, or Other NEPA Analyses Influencing the Draft EA’s Scope

We have based the scope of the proposed action and nature of the two alternatives considered in this Draft EA on the relevant requirements in section 101(a)(5)(D) of the MMPA. Thus, our authority under the MMPA bounds the scope of our alternatives. We conclude that this analysis—when combined with the analyses in the following documents—fully describes the impacts associated with the proposed construction project with mitigation and monitoring for marine mammals. After conducting a review of the information and analyses for sufficiency and adequacy, we incorporate by reference the relevant analyses on Bergerson’s proposed action as well as discussions of the affected environment and environmental consequences within the following documents, per 40 CFR §1502.21 and NAO 216-6 § 5.09(d):

- *Request for an Incidental Harassment Authorization Under the Marine Mammal Protection Act: Front Street Marine Transload Facility, Newport, Oregon, Yaquina Bay (6th Field HUC #171002040303) (T11S, R11W, S8) (Turner and Campbell, 2015),*
- *Biological Assessment for Front Street Marine Transload Facility, Newport, Oregon, Yaquina Bay (6th Field HUC #171002040303) (T11S, R11W, S8) (Campbell, 2015)*
- *Draft Environmental Assessment: Homeporting of Two Fast Response Cutters in District, Astoria, Oregon, and Newport, Oregon (USCG, 2015)*

MMPA APPLICATION AND NOTICE OF THE PROPOSED AUTHORIZATION

The CEQ regulations (40 CFR § 1502.25) encourage federal agencies to integrate NEPA's environmental review process with other environmental reviews. We rely substantially on the public process for developing proposed Authorizations and evaluating relevant environmental information and provide a meaningful opportunity for public participation as we develop corresponding EAs. We fully consider public comments received in response to our publication of the notice of proposed Authorization during the corresponding NEPA process.

We considered Bergerson's proposed mitigation and monitoring measures and determined that they would help ensure that the Project would effect the least practicable impact on marine mammals. These measures include: (1) conducting in-water construction only during daylight hours, when visual monitoring of marine mammals can be conducted; (2) implementing a soft start for all impact and vibratory pile driving; and (3) implementing shutdown and power down measures if a marine mammal is detected within or approaching the exclusion zone. Through the MMPA process, we preliminarily determined that, provided that Bergerson implements the required mitigation and monitoring measures, the impact of the Project on marine mammals would be, at worst, a temporary modification in behavior of small numbers of certain species of marine mammals that may be hauled out in the vicinity of the proposed activity.

We would also prepare a *Federal Register* notice on the proposed activity and request that the public submit comments, information, and suggestions concerning Bergerson's request, the content of our proposed IHA, and potential environmental effects related to the proposed issuance of the Authorization. This Draft EA incorporates by reference and relies on Bergerson's application (Bergerson, 2015).

In summary, the analyses referenced above support our conclusion that, with the incorporation of the proposed monitoring and mitigation measures, the issuance of an IHA to Bergerson for the Front Street Marine Transload Facility construction would not result in any significant direct, indirect, or cumulative impacts. Based on our MMPA analysis, the intermittent frequency and short duration of the harassment from the construction project would allow adequate time for the marine mammals to recover from potentially adverse effects. Furthermore, the referenced analyses concluded that additive or cumulative effects of the construction project on its own or in combination with other activities, are not expected to occur. Finally, the environmental analyses did not identify any significant environmental issues or impacts.

1.3.2. Scope of Environmental Analysis

Given the limited scope of the decision for which we are responsible (*i.e.*, issue the IHA including prescribed means of take, mitigation measures, and monitoring requirements, or not issue the IHA), this Draft EA provides more focused information on the primary issues and impacts of environmental concern related specifically to our issuance of the IHA. This Draft EA does not further evaluate effects to the elements of the human environment listed in Table 1,

because previous environmental reviews (Campbell, 2015; Turner and Campbell, 2015; USCG, 2015) have shown that the issuance of an IHA for activities similar to Bergerson’s proposed construction project would not significantly affect those components of the human environment. Moreover, those analyses are consistent with our MMPA analysis concluding that there would be no significant impacts to marine mammals.

Table 1. Components of the human environment not affected by our issuance of an IHA.

Biological	Physical	Socioeconomic / Cultural
Amphibians	Air Quality	Commercial Fishing
Humans	Geography	Recreational Fishing
Non-Indigenous Species	Land Use	National Historic Preservation Sites
Seabirds	State Marine Protected Areas	National Trails and Nationwide Inventory of Rivers
	Park Land	Low Income Populations
	Prime Farmlands	Minority Populations
	Wetlands	Public Health and Safety
		Historic and Cultural Resources

1.3.3. Comments on This Draft EA

NAO 216-6 established NOAA procedures for complying with NEPA and the implementing NEPA regulations issued by the CEQ. Consistent with the intent of NEPA and the clear direction in NAO 216-6 to involve the public in NEPA decision-making, we are releasing this Draft EA for public comment on the potential environmental impacts of our issuance of an IHA, as well as comment on the activities described in Bergerson’s MMPA application and in the *Federal Register* notice of the proposed IHA. The CEQ regulations further encourage agencies to integrate the NEPA review process with review under other environmental statutes. Consistent with agency practice, we integrated our NEPA review and preparation of this Draft EA with the public process required by the MMPA for the proposed issuance of an IHA.

The Draft EA and *Federal Register* notice of the proposed IHA, combined with our preliminary determinations, supporting analyses, and corresponding public comment period are instrumental in providing the public with information on relevant environmental issues and offering the public a meaningful opportunity to provide comments to us for consideration in both the MMPA and NEPA decision-making processes.

1.4. Other Permits, Licenses, or Consultation Requirements

This section summarizes federal, state, and local permits, licenses, approvals, and consultation requirements necessary to implement the proposed action.

1.4.1. National Environmental Policy Act

Issuance of an Authorization is subject to environmental review under NEPA. NMFS may prepare an EA, an EIS, or determine that the action is categorically excluded from further review. While NEPA does not dictate substantive requirements for an Authorization, it requires consideration of environmental issues in federal agency planning and decision making. The procedural provisions outlining federal agency responsibilities under NEPA are provided in CEQ's implementing regulations (40 CFR §§ 1500-1508).

1.4.2. Marine Mammal Protection Act

The MMPA and its provisions that pertain to the proposed action are discussed above in section 1.2.

1.4.3. Endangered Species Act (ESA)

No ESA-listed marine mammal species under NMFS jurisdiction occurs in the vicinity of Bergerson's proposed construction projects.

1.4.4. Magnuson-Stevens Fishery Conservation and Management Act

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Federal agencies are required to consult with the Secretary of Commerce with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency which may adversely affect essential fish habitat (EFH) identified under the MSFCMA. Although All WSF terminals are within Pacific groundfish, coastal pelagic, and Pacific salmon EFH. Coastal pelagic fish are primarily associated with the open-ocean and coastal areas, and are not likely to occur near WSF terminals.

NMFS is currently consulting on EFH with its West Coast Regional Office. The consultation would be completed prior to the determination of issuance of an IHA.

Chapter 2 Alternatives

2.1. Introduction

NEPA and the CEQ implementing regulations (40 CFR §§ 1500-1508) require consideration of alternatives to proposed major federal actions and NAO 216-6 provides NOAA policy and guidance on the consideration of alternatives to our proposed action. An EA must consider all reasonable alternatives, including the Preferred Alternative. It must also consider the No Action Alternative, even if that alternative does not meet the stated purpose and need. This provides a baseline analysis against which we can compare the other alternatives.

To warrant detailed evaluation as a reasonable alternative, an alternative must meet our purpose and need. In this case, as we previously explained in Chapter 1 of this EA, an alternative only meets the purpose and need if it satisfies the requirements under section 101(a)(5)(D) the MMPA. We evaluated each potential alternative against these criteria; identified one action alternative along with the No Action Alternative; and carried these forward for evaluation in this Draft EA. This chapter describes the alternatives and compares them in terms of their environmental impacts and their achievement of objectives.

As described in Section 1.2, the MMPA requires that we must prescribe the means of effecting the least practicable impact on the species or stocks of marine mammals and their habitat. In order to do so, we must consider Bergerson's proposed mitigation measures, as well as other potential measures, and assess how such measures could benefit the affected species or stocks and their habitat. Our evaluation of potential measures includes consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, we expect the successful implementation of the measure to minimize adverse impacts to marine mammals; (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation.

Any additional mitigation measure proposed by us beyond what the applicant proposes should be able to or have a reasonable likelihood of accomplishing or contributing to the accomplishment of one or more of the following goals:

- Avoidance or minimization of marine mammal injury, serious injury, or death, wherever possible;
- A reduction in the numbers of marine mammals taken (total number or number at biologically important time or location);
- A reduction in the number of times the activity takes individual marine mammals (total number or number at biologically important time or location);
- A reduction in the intensity of the anticipated takes (either total number or number at biologically important time or location);

- 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; and
- For monitoring directly related to mitigation, an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Alternative 1 (the Preferred Alternative) includes a suite of mitigation measures intended to minimize potentially adverse interactions with marine mammals.

2.2. Description of Bergerson's Proposed Activities

The proposed project would construct a new transload and fish buying facility at the current location of the Undersea Gardens in Yaquina Bay (Figure 1). The 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.

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

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.



Figure 1. Project location for the Newport Front Street Transload Facility construction project.

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.

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>					126

2.3. Description of Alternatives

2.3.1. Alternative 1 – Issuance of an Authorization with Mitigation Measures

The proposed action constitutes Alternative 1 and is the Preferred Alternative. Under this alternative, we would issue an IHA (valid from November 1, 2015, through October 31, 2016) to Bergerson allowing the incidental take, by Level B harassment, of two species of marine mammals, subject to the mandatory mitigation and monitoring measures and reporting requirements set forth in the proposed IHA, if issued, along with any additions based on consideration of public comments.

PROPOSED MITIGATION MEASURES

For Bergerson's proposed Front Street Marine Transload Facility construction, 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 corresponding to NMFS' current Level B harassment thresholds and, if marine mammals within the zone of influence (ZOI) appear disturbed by the work activity, to initiate immediate shutdown or power down of the piling hammer, making it very unlikely potential injury or temporary hearing threshold shifts (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 would 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 2 below.

Table 2. Modeled Level A and Level B harassment zones for vibratory and impact pile driving activities

File 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.

PROPOSED MONITORING AND REPORTING 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.

2.3.2. Alternative 2 – No Action Alternative

We are required to evaluate the No Action Alternative per CEQ NEPA regulations. The No Action Alternative serves as a baseline to compare the impacts of the Preferred and other Alternatives. Under the No Action alternative, we would not issue an IHA to Bergerson for the proposed construction project.

Under the No Action Alternative, Bergerson could choose not to proceed with their proposed activities or to proceed without an IHA. If they choose the latter, Bergerson would not be exempt from the MMPA prohibitions against the take of marine mammals and would be in violation of the MMPA if take of marine mammals occurs.

For purposes of this EA, we characterize the No Action Alternative as Bergerson not receiving an IHA and Bergerson would not conduct construction activities for its proposed Front Street Marine Transload Facility construction.

2.4. Alternatives Considered but Eliminated from Further Consideration

NMFS considered whether other alternatives could meet the purpose and need and support Bergerson's proposed construction project. An alternative that would allow for the issuance of an IHA with no required mitigation or monitoring was considered but eliminated from consideration, as it would not be in compliance with the MMPA and therefore would not meet the purpose and need. For that reason, this alternative is not analyzed further in this document. No other alternatives that would meet the purpose and need of the project were identified.

Chapter 3 Affected Environment

This chapter describes existing conditions in the proposed action areas. Complete descriptions of the physical, biological, and social environment of the action area are contained in the documents listed in Section 1.3.1 of this EA. We incorporate those descriptions by reference and briefly summarize or supplement the relevant sections for marine mammals in the following subchapters.

3.1. Physical Environment

3.1.1. Natural Environment

The Front Street Transload Facility is located at the current Undersea Gardens (a local tourist attraction) in Yaquina Bay along Bay Boulevard in Newport, Oregon (Figure 1).

3.1.2. Essential Fish Habitat

The area includes marine habitat, and is within designated Pacific groundfish, coastal pelagic and Pacific salmonid EFH.

3.2. Biological Environment

The primary component of the biological environment that would be impacted by the proposed action and alternatives would be marine mammals, which would be directly impacted by the authorization of incidental take. We briefly summarize this component of the biological environment here.

3.2.1. Marine Mammals

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*). Neither of these species is listed as endangered species under the Endangered Species Act (ESA).

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>. These species include harbor seals, California sea lions, harbor porpoises, killer whales, and occasionally humpback whales and gray whales. The information is incorporated here by reference. Please 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 3. 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). Species regularly occur in the Yaquina Bay near the proposed project area include harbor seals and California sea lions. The information is incorporated here by reference. Please refer to that document for detailed information.

Table 3. 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

3.3. Social Environment

Because our proposed action and alternatives relate only to the authorization of incidental take of marine mammals, the components of the social environment are not relevant to our proposed action (see subchapter 1.3.2 - Scope of Environmental Analysis). Therefore, no further analysis of the social environment is required here.

Chapter 4 Environmental Consequences

This chapter of the EA analyzes the impacts of the two alternatives and addresses the potential direct, indirect, and cumulative impacts of the proposed IHA. Bergerson's application and other related environmental analyses identified previously facilitate this analysis.

Under the MMPA, we have evaluated the potential impacts of Bergerson's construction program activities in order to determine whether to authorize incidental take of marine mammals. Under NEPA, we have determined that an EA is appropriate to evaluate the potential significance of environmental impacts resulting from the issuance of an IHA.

4.1. Effects of Alternative 1 – Issuance of an IHA with Mitigation Measures

Alternative 1 is the Preferred Alternative, under which we would issue an IHA to Bergerson allowing the incidental take, by Level B harassment, of two species of marine mammals from November 1, 2015, through October 31, 2016, subject to the mandatory mitigation and monitoring measures and reporting requirements set forth in the IHA, if issued. We would incorporate the mitigation and monitoring measures and reporting described earlier in this Draft EA into a final IHA.

4.1.1. Impacts to Marine Mammal Habitat

No permanent impacts to marine mammal habitat are proposed to or would occur as a result of the proposed Project. The Bergerson's proposed Front Street Transload Facility construction project would not modify the existing habitat. Therefore, no restoration of the habitat would be necessary. A temporary, small-scale loss of foraging habitat may occur for marine mammals, if the marine mammals leave the area during pile removal and driving activities.

Acoustic energy created during pile removal and driving would have the potential to disturb fish within the vicinity of the pile replacement work. As a result, the affected area could temporarily lose foraging value to marine mammals. During pile driving, high noise levels may exclude fish from the vicinity of the piling. Hastings and Popper (2005) identified several studies that suggest fish would relocate to avoid areas of damaging noise energy. If fish leave the area of disturbance, pinniped foraging habitat in that area may have temporarily decreased foraging value when piles are driven using impact hammering.

The duration of fish avoidance of this area after pile driving stops is unknown. However, the affected area represents an extremely small portion of the total foraging range of marine mammals that may be present in and around the project area.

Because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammals and the food sources that they utilize are not expected to cause significant or long-term consequences for individual marine mammals or marine mammal populations.

Project-related impacts to Pacific groundfish, coastal pelagic and Pacific salmon EFH are expected to be negligible due to the following reasons:

- The project is not expected to significantly affect the distribution or abundance of potential Pacific groundfish, coastal pelagic or Pacific salmon prey species in the action area due to its small scale.
- Though a low number of prey species individuals may be disturbed during in-water work, impacts would be short-term and limited to the immediate area around the pile.
- Though a low number of prey species individuals may be exposed to localized turbidity, impacts would be short-term and limited to the immediate vicinity of the pile.

4.1.2. Impacts to Marine Mammals

We expect that behavioral disturbance or displacement resulting from the activities associated with the Project have the potential to impact marine mammals. The majority of impacts are likely to occur from pile driving and pile removal activities. Pile driving and removal activities associated with the construction could cause pinniped behavioral modification and temporary displacement within the vicinity of the action area through: (1) noise generated from pile removal and pile driving; and (2) visual disturbance from construction activities and crew. These activities are not anticipated to result in injury, serious injury, or mortality of any marine mammal species and none are proposed to be authorized.

4.1.2.1. Acoustic Impacts

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 22 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 are likely to occur in the proposed seismic survey area. Bergerson and NMFS determined that in-water pile removal and pile driving during the Front Street Transload Facility construction project has the potential to result in behavioral harassment of the marine mammal species and stocks in the vicinity of the proposed activity.

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 would 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 watrgun 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 watrgun 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 watrgun impulse (estimated at 188 dB re 1 μ Pa²-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.

Nevertheless, the sum of noise from Bergerson's proposed Front Street Transload Facility construction project 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.

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 biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. Although consequences of behavioral modification could be expected to be biologically significant if the change affects growth, survival, or reproduction, this is not expected from a Bergerson's proposed construction

activities due to its small scale, limited area, and brief duration. 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.

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 proposed project area is not a biologically important area for marine mammals, nor is it considered a critical habitat 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.

4.1.2.2. Visual Disturbance

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.

4.1.2.3. Estimated Take of Marine Mammals by Level B Incidental 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 μPa and 160 dB re 1 μPa 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 μPa (cetaceans) 190 dB re 1 μPa (pinnipeds) root mean square (rms)

Level B Harassment	Behavioral Disruption (for impulse noises)	160 dB re 1 μPa (rms)
Level B Harassment	Behavioral Disruption (for non-impulse noise)	120 dB re 1 μPa (rms)

As explained above, ZOIs would be established that encompass the areas where received underwater sound pressure levels (SPLs) exceed the applicable thresholds for Level B harassment. The modeled exclusion zone for Level A harassment is only 7 feet (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 Yaquina Bay 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:

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

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%

4.2. Effects of Alternative 2 – No Action Alternative

Under the No Action Alternative, we would not issue an IHA to Bergerson. As a result, Bergerson would not receive an exemption from the MMPA prohibitions against the take of marine mammals and would be in violation of the MMPA if they proceeded with their project and take of marine mammals occurred. If the project is not conducted, the “No Action” alternative would result in no disturbance to marine mammals.

4.3. Compliance with Necessary Laws – Necessary Federal Permits

We have determined that the issuance of an IHA is consistent with the applicable requirements of the MMPA, MSFMCA, and our regulations. Please refer to Section 1.4 of this EA for more information.

4.4. Unavoidable Adverse Impacts

Bergerson’s application and the other environmental analyses identified previously (Campbell, 2015; Turner and Campbell, 2015; USCG, 2015) summarize unavoidable adverse impacts to marine mammals or to their populations to which they belong or on their habitats occurring in the proposed project area. We incorporated those documents by reference to include potential effects on other species. Specific sections incorporated in this document are found in Sections 7 and 10 of the IHA application (Turner and Campbell, 2015), Sections 6, 7, and 8 of the Biological Assessment (Campbell, 2015), and Chapter 4 of the USCG EA (USCG, 2015).

We acknowledge that the incidental take authorized would potentially result in unavoidable adverse impacts to individual animals that would be harassed as a result of the Project. However, we do not expect Bergerson’s activities to have adverse consequences on the viability of marine mammals in the Pacific Ocean or in Yaquina Bay, and we do not expect the marine mammal populations in that area to experience reductions in reproduction, numbers, or distribution that might appreciably reduce their likelihood of surviving in the wild. We expect that the numbers of individuals of all species taken by harassment would be small (relative to species or stock abundance) and that the proposed Front Street Transload Facility construction project and the take resulting from the proposed project activities would have a negligible impact on the affected species or stocks of marine mammals.

The MMPA requirement of ensuring the proposed action has no unmitigable adverse impact to subsistence uses does not apply here because there are no permitted subsistence uses of marine mammals in the region.

4.5. Cumulative Effects

NEPA defines cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR §1508.7). Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time.

Past, present, and foreseeable impacts to marine mammal populations include the following: commercial whaling; climate change affecting the prey base and habitat quality as a result of global warming; ship strikes; fishing gear entanglement; exposure to biotoxins and the resulting bioburden; acoustic masking from anthropogenic noise; competition with commercial fisheries; and killer whale predation. These activities account for cumulative impacts to regional and

worldwide populations of marine mammals, many of whom are a small fraction of their former abundance. However, quantifying the biological costs for marine mammals within an ecological framework is a critical missing link to our assessment of cumulative impacts in the marine environment and assessing cumulative effects on marine mammals (Clark et al., 2009). Despite these regional and global anthropogenic and natural pressures, available trend information indicates that most local populations of marine mammals in the Pacific Ocean are stable or increasing (Carretta et al., 2014).

The proposed construction project would add another, albeit localized and temporary, activity in Oregon coast. This activity would be limited to a small area in the City of Newport for a relatively short period of time. This section provides a brief summary of the human-related activities affecting the marine mammal species in the action area.

4.5.1. Coastal Construction

Beside the proposed Front Street Transload Facility construction project in the Yaquina Bay off Newport, the United States Coast Guard (USCG) is proposing to acquire and homeport two Fast Response Cutters (FRCs) for USCG Area of Responsibility District Thirteen. One of the homeports would be across the Front Street Transload Facility on the other side of Yaquina Bay off the City of Astoria (USCG, 2015). The USCG's proposed homeport construction activity would involve pile driving activities that would likely occur in mid-2016, and would not be concurrent with pile driving activities for the Front Street Transload Facility construction which occur between November 1, 2015, and February 15, 2016.

4.5.2. Marine Pollution

Marine mammals are exposed to contaminants via the food they consume, the water in which they swim, and the air they breathe. Point and non-point source pollutants from coastal runoff, offshore mineral and gravel mining, at-sea disposal of dredged materials and sewage effluent, marine debris, and organic compounds from aquaculture are all lasting threats to marine mammals in the project area. The long-term impacts of these pollutants, however, are difficult to measure.

The persistent organic pollutants (POPs) tend to bioaccumulate through the food chain; therefore, the chronic exposure of POPs in the environment is perhaps of the most concern to high trophic level predators such as California sea lions and Pacific harbor seals.

The Bergerson's construction and demolition activities associated with the Front Street Transload Facility construction project are not expected to cause increased exposure of POPs to marine mammals in the project vicinity due to the small scale and localized nature of the activities. Additionally, the Bergerson would use barges to carry out all construction debris and demolition material for proper disposal.

4.5.3. Commercial and Private Marine Mammal Watching

Although marine mammal watching is considered by many to be a non-consumptive use of marine mammals with economic, recreational, educational and scientific benefits, it is not without potential negative impacts. One concern is that animals may become more vulnerable to vessel strikes once they habituate to vessel traffic (Swingle et al. 1993; Laist et al. 2001; Jensen and Silber 2004; Douglas et al. 2008). Another concern is that preferred habitats may be abandoned if disturbance levels are too high. Several recent research efforts have monitored and evaluated the impacts of people closely approaching, swimming, touching and feeding marine mammals and has suggested that marine mammals are at risk of being disturbed (“harassed”), displaced or injured by such close interactions. Researchers investigating the adverse impacts of marine mammal viewing activities have reported boat strikes, disturbance of vital behaviors and social groups, separation of mothers and young, abandonment of resting areas, and habituation to humans (Nowacek *et al.* 2001).

There are no known marine mammal watching operations based in the vicinity of the proposed action area. However, the proposed Bergerson’s Front Street Transload Facility construction project would not likely add additional cumulative adverse effects due to its small spatial scale and brief duration.

4.5.4. Commercial Fishing

Commercial fisheries may affect marine mammals indirectly by altering the quality of their habitat. The removal of large numbers of fish (both target and non-target or bycatch species) from a marine ecosystem can change the composition of the fish community, altering the abundance and distribution of prey available for marine mammals. In addition, by removing large amounts of biomass, commercial fisheries compete with other consumers that depend on the target species for food, which can, in turn, increase competition between different piscivorous predators. Nevertheless, the proposed action area is a transload facility where no fishing activity is occurring. The proposed transload facility construction would not change the current status quo of commercial fisheries in the Yaquina Bay area.

4.5.5. Climate Change

Global climate change could significantly affect the marine resources of the Northwest Pacific region. Possible impacts include temperature and rainfall changes and potentially rising sea levels and changes to ocean conditions. These changes may affect the coastal marine ecosystem in the proposed action area by increasing the vertical stratification of the water column and changing the intensity and rhythms of coastal winds and upwelling. Such modifications could cause ecosystem regime shifts as the productivity of the regional ecosystem undergoes various changes related to nutrients input and coastal ocean process (FWS 2011).

The precise effects of global climate change on the action area, however, cannot be predicted at this time because the coastal marine ecosystem is highly variable in its spatial and temporal scales.

4.5.6. Summary of Cumulative Effects

Although commercial harvest no longer takes place, whale watching, coastal construction and development, and marine pollution continue to result in some level of impact to marine mammal populations in the area. Nonetheless, the proposed construction work at the Front Street Transload Facility would only add negligible additional impacts to marine mammals in the project area due to the limited project footprint within the action area.

The pile driving and pile removal activities associated with the Front Street Transload Facility construction project are well planned to minimize impacts to the biological and physical environment of the areas by implementing mitigation and monitoring protocols. Therefore, NMFS has determined that the Bergerson's Front Street Transload Facility construction project would not have a significant cumulative effect on the human environment, provided that the mitigation and monitoring measures described in Sections 2.3.4 and 2.3.5 are implemented.

Chapter 5 List of Preparers and Agencies Consulted

Agencies Consulted

NMFS West Coast Region, Essential Fish Habitat consultation.

Prepared By

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